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KỶ YẾU HỘI THẢO KHOA HỌC QUỐC TẾ 2024

DU LỊCH THÔNG MINH VÀ PHÁT TRIỂN BỀN VỮNG

SMART TOURISM AND SUSTAINABLE DEVELOPMENT:
Potentials, Opportunities and Challenges

TIỀM NĂNG, CƠ HỘI VÀ THÁCH THỨC

Quyển **1**

NHÀ XUẤT BẢN ĐẠI HỌC QUỐC GIA HÀ NỘI

KỶ YẾU HỘI THẢO KHOA HỌC QUỐC TẾ 2024

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SÁCH KHÔNG BÁN

KỶ YẾU
HỘI THẢO KHOA HỌC QUỐC TẾ
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Hiện nay ngành du lịch đang phát triển nhanh và năng động theo hướng chuyên nghiệp, tạo ra những điều kiện thuận lợi để du lịch thông minh phát triển. Phát triển du lịch thông minh mở ra nhiều cơ hội cho các nước, đặc biệt là các quốc gia đang phát triển và có nhiều tiềm năng du lịch như Việt Nam. Việc phát triển du lịch dựa trên nền thành tựu khoa học và công nghệ, đặc biệt là ứng dụng của công nghệ thông tin và truyền thông góp phần hiện đại hóa ngành Du lịch, tăng hiệu quả cho công tác quản lý, điều hành và kinh doanh du lịch, nâng cao chất lượng và tăng giá trị sản phẩm, dịch vụ du lịch, tăng trải nghiệm cho khách hàng… Du lịch thông minh và phát triển bền vững là lựa chọn tất yếu, có ý nghĩa quan trọng trong việc tạo ra những tác động tích cực đối với sự phát triển bền vững về kinh tế, xã hội và môi trường. Phát triển các mô hình du lịch thông minh và kinh doanh bền vững giúp mang lại những lợi ích thiết thực và bền vững cho các bên liên quan (người dân, khách du lịch, doanh nghiệp và địa phương) và tích cực góp phần nâng cao năng lực cạnh tranh của ngành Du lịch Việt Nam.

Hội thảo "Du lịch thông minh và phát triển bền vững: Tiềm năng, cơ hội và thách thức - Smart tourism and sustainable development: potentials, opportunities and challenges" là một diễn đàn quan trọng, có ý nghĩa sâu sắc, là cơ hội để các nhà khoa học, chuyên gia, giảng viên và các nhà nghiên cứu, các nhà quản lý, các doanh nghiệp hoạt động trong lĩnh vực du lịch, khách sạn - nhà hàng có cơ hội được trao đổi học thuật, chia sẻ kinh nghiệm và cập nhật kiến thức chuyên môn trong lĩnh vực du lịch, phục vụ đắc lực cho công tác giảng dạy, nghiên cứu và áp dụng trong thực tiễn nhằm thúc đẩy sự phát triển du lịch thông minh và đạt được sự phát triển bền vững của du lịch Việt Nam.

Ban Tổ chức vui mừng vì đã nhận được sự quan tâm, hợp tác và đồng hành của rất nhiều nhà khoa học, giảng viên, nghiên cứu sinh, học viên cao học trong và ngoài trường. Chúng tôi đã nhận được hơn 165 nghiên cứu của các tác giả từ nhiều cơ quan,

trường đại học, viện nghiên cứu trong và ngoài nước gửi tới, bao gồm: Học viện Holmes Institute, Australia; Tập đoàn Giáo dục Thụy Sĩ; Trường Đại học Hồ Nam, Trung Quốc; Đại học Naresuan, Thái Lan; Trường Đại học Đại Diệp (Da-Yeh University), Đài Loan; Trường Đại học Kinh tế Quốc dân; Trường Đại học Thương Mại; Trường Đại học Tôn Đức Thắng; Trường Đại học Duy Tân; Trường Đại học Khoa học Xã hội & Nhân văn - ĐHQG TP. Hồ Chí Minh; Học viện Ngân hàng; Học viện Chính trị khu vực II; Viện Chiến lược phát triển, Bộ Kế hoạch và Đầu tư; Trường Đại học Công đoàn; Trường Đại học Văn hóa Hà Nội; Trường Đại học Phenikaa; Đại học Kinh tế - Kỹ thuật Công nghiệp; Trường Đại học Công nghệ Đông Á; Trường Đại học Hạ Long; Trường Đại học Đại Nam; Trường Đại học Sư phạm Thái Nguyên; Trường Đại học Nha Trang; Trường Đại học Công nghiệp TP. Hồ Chí Minh; Trường Đại học Sài Gòn; Trường Đại học Nông Lâm TP. Hồ Chí Minh; Trường Đại học Công nghệ Thông tin và truyền thông Việt – Hàn, Đại học Đà Nẵng; Trường Đại học Cần Thơ; Trường Đại học Tây Đô; Trường đại học Văn Hiến; Trường Đại học Phú Yên; Trường Đại học Tài chính - Marketing; Trường Đại học Công nghệ Đồng Nai; Trường Đại học Công thương Thành phố Hồ Chí Minh; Trường Đại học Thủ Dầu Một; Trường Đại học Ngân hàng Thành phố Hồ Chí Minh; Trường Đại học Bách Khoa, Đại học Quốc gia TP. Hồ Chí Minh; và nhiều đơn vị khác.

Các bài viết được bình duyệt đưa vào Kỷ yếu đã tập trung làm rõ chủ đề của hội thảo về du lịch thông minh, phát triển bền vững và được chia thành 2 tập:

- Tập 1: Du lịch thông minh và phát triển du lịch bền vững gắn với bối cảnh hội nhập kinh tế, cách mạng công nghiệp 4.0, trí tuệ nhân tạo và chuyển đổi số: Triển vọng, cơ hội và thách thức phát triển du lịch thông minh tại Việt Nam.

- Tập 2: Các mô hình phát triển du lịch thông minh, ứng dụng công nghệ thông tin và kinh doanh bền vững trong lĩnh vực du lịch, quản trị dịch vụ du lịch và lữ hành, nhà hàng - khách sạn, vai trò của các bên liên quan trong đào tạo và phát triển du lịch thông minh.

Kết quả của các công trình nghiên cứu của các học giả gắn với những chủ đề trên giúp gợi mở các giải pháp, chính sách và định hướng chiến lược đúng đắn để các cơ quan quản lý, các nhà hoạch định chính sách, chính quyền địa phương và các doanh nghiệp hoạt động trong lĩnh vực du lịch nhận dạng các cơ hội, giải quyết được những thách thức để khơi dậy được tiềm năng và phát huy được các nguồn lực sẵn có (nguồn lực tài nguyên thiên nhiên, nguồn lực văn hóa xã hội, nguồn lực con người, thể chế chính sách và khoa học công nghệ) để thúc đẩy sự phát triển của du lịch thông minh và đảm bảo sự phát triển bền vững của du lịch Việt Nam trong bối cảnh mới.

Hội thảo "Du lịch thông minh và phát triển bền vững: Tiềm năng, cơ hội và thách thức - Smart tourism and sustainable development: potentials, opportunities and

challenges" năm 2024 được tổ chức theo hình thức kết hợp trực tuyến và trực tiếp. Hình thức trực tiếp được tổ chức tại phiên toàn thể và ở các tiểu ban. Hình thức trực tuyến giúp kết nối linh hoạt các giảng viên, học viên, nghiên cứu sinh, các nhà nghiên cứu, học giả ở nhiều khu vực, địa phương trong và ngoài nước, giúp người tham dự có được cơ hội trao đổi kết quả nghiên cứu, góp phần nâng cao năng lực chuyên môn, kiến thức và giải pháp để phát triển du lịch thông minh và phát triển bền vững đáp ứng nhu cầu của xã hội và phát triển kinh tế đất nước.

Ban Tổ chức xin trân trọng cảm ơn các quý vị, các nhà khoa học, các thầy cô giáo, các học viên và nghiên cứu sinh đã tích cực viết bài và tham gia Hội thảo. Rất mong quý vị sẽ tiếp tục quan tâm, hợp tác, tham dự và hỗ trợ chúng tôi để tổ chức thành công các hoạt động học thuật sau này.

Kính chúc quý vị luôn mạnh khỏe, hạnh phúc, gặt hái được nhiều thành công trong công tác, trong hoạt động nghiên cứu khoa học và cuộc sống!

Trân trọng!

BAN TỔ CHỨC HỘI THẢO

FACTORS AFFECTING INTENTION TO USE MOBILE APPLICATIONS IN TOURISM OF YOUTH IN HANOI CITY

Nguyễn Thị Diễm Kiều[1]

Abstract: The purpose of this study is to investigate and analyze factors affecting the intention to use mobile applications in tourism among young people in Hanoi City. The study utilized SPSS software version 26.0 to analyze the proposed hypothesis and structural model. Primary data were collected through a questionnaire survey conducted from October to November 2023, involving the participation of 400 young individuals who have either used or are currently using mobile applications in tourism in Hanoi City. The research findings highlight several important factors affecting the intention to use mobile applications in tourism among young people in Hanoi City. These factors include reliability, ease of use, usefulness, security, compatibility, and social influence. The study provides in-depth analysis of the relationships between these factors and their impact on the intention to use mobile applications in tourism. This research contributes to the field of tourism by providing empirical evidence on the factors affecting young people's intention to use mobile applications in tourism in Hanoi City. The research addresses gaps in the literature by specifically focusing on the context of youth in Hanoi City. The findings of this research are expected to improve understanding and knowledge about using smart applications on electronic devices in general, and mobile applications in particular in tourism activities.

Keywords: Mobile applications, Hanoi tourism, Hanoi City.

Tóm tắt: Mục đích của nghiên cứu là điều tra và phân tích các yếu tố ảnh hưởng đến ý định sử dụng ứng dụng di động trong du lịch của thanh niên tại thành phố Hà Nội. Nghiên cứu sử dụng phần mềm SPSS phiên bản 26.0 để phân tích các giả thuyết và mô hình cấu trúc được đề xuất. Dữ liệu chính được thu thập thông qua cuộc khảo sát bằng bảng câu hỏi với sự tham gia của 400 thanh niên đã sử dụng hoặc đang sử dụng ứng dụng di động trong du lịch tại thành phố Hà Nội. Kết quả nghiên cứu nhấn mạnh một số yếu tố quan trọng ảnh hưởng đến ý định sử dụng ứng dụng di động trong du lịch của thanh niên tại thành phố Hà Nội. Các yếu tố này bao gồm độ tin cậy, độ dễ sử dụng, tính hữu ích, bảo mật, tương thích và ảnh hưởng xã hội. Nghiên cứu cung cấp phân tích sâu rộng về mối quan hệ giữa những yếu tố này và ảnh hưởng của chúng đối với ý định sử dụng ứng dụng di động trong du lịch. Nghiên cứu này đóng góp cho lĩnh vực du lịch bằng cách cung cấp bằng chứng thực nghiệm về các yếu tố ảnh hưởng đến ý định sử dụng ứng dụng di động trong du lịch của thanh niên tại thành phố Hà Nội. Nghiên cứu giải quyết những khoảng trống trong văn kiện bằng cách tập trung đặc biệt vào ngữ cảnh của thanh niên tại thành phố Hà Nội. Các kết quả của nghiên cứu này dự kiến sẽ cải thiện sự hiểu biết và kiến thức về việc sử dụng ứng dụng thông minh trên thiết bị điện tử nói chung, và đặc biệt là ứng dụng di động trong hoạt động du lịch.

Từ khóa: Ứng dụng di động, du lịch Hà Nội, thành phố Hà Nội.

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1. INTRODUCTION

In 2020, the domestic and global service industries encountered numerous difficulties due to the COVID-19 pandemic, which not only had a significant impact on human lives with a global mortality rate of 6.2% according to the Vietnam Ministry of Health (2020) and a projected global economic downturn of -2.3% according to the WTO (2020), but also affected various sectors. Vietnam, as a country, was also heavily affected in many industries, with the tourism sector likely experiencing the greatest impact. The changing living environment has presented more challenges, but it has also served as a crucial test for the advancement of digital technology. We have restricted face-to-face interactions, and the necessity for "no direct contact" has necessitated support applications such as smart homes and online shopping, leading to increased reliance on social networks.

For the tourism industry, mobile applications have revolutionized the way users access travel services. Instead of relying on traditional, time-consuming methods, users can now obtain information or tourism program they want with just a click. Therefore, to both optimize mobile applications to cater to users' needs and to help young people save time, the author has chosen to address the issue: "Factors affecting the intention to use mobile applications in tourism of young people in Hanoi City".

2. LITERATURE REVIEW

2.1. Intent to use

According to the English dictionary of Cambridge University (Cambridge Dictionary, 2011), "intention" refers to ideas or tasks that people plan in advance and wish to carry out. Meanwhile, according to Ajzen (1991), intention is the background step of behavior. Intentions are considered motivational factors that influence behavior, reflecting the individual's willingness and effort to perform the behavior. As a pre-set rule, the greater the intention to perform a behavior, the greater the likelihood of the behavior being executed. Intention is also a mental state that reflects the commitment to perform an action in the future. It involves cognitive activities such as planning and preparation (Bratman. M.E, 1987).

According to Davis and colleagues (1989), actual behavior and intention are correlated after research. Therefore, the intention to use can be understood as an individual's commitment to technology (Fishbein and Azjen, 1975). Additionally, according to Howard and Sheth (1969), the purchase intention is understood as the intention to purchase, which is a precursor step before consumers make purchasing decisions. Furthermore, the research of Zhang and colleagues (2012) also confirms that intention to use is a crucial concept in consumer behavior research and is the most important determinant of actual consumer behavior.

2.2. Mobile applications in tourism

That is mobile application software, also known as mobile application, or application, is application software designed to run on smartphones, tablets, and computers. In another study by Tutunea Mihaela Filofteia (2016), mobile applications are defined as "a set of instructions encoded and used by a mobile device to solve problems". A study by Moritz Christian (2015), mobile applications are software applications developed to run on a device such as a smartphone or tablet. Traditionally, mobile applications often mirror services similar to those offered on personal computers.

Mobile applications in tourism are understood as applications developed for mobile devices to guide and provide necessary information to a person or group of people during a tour or travel somewhere. (André Constantino da Silva et al., 2012). A recent tourism study suggests that smartphones play an important role in mediating travel experiences (Wang et al., 2012). Research by Tutunea Mihaela Filofteria (2016), mobile applications for tourism depend on the type of service provided.

2.3. Young people

There are many definitions of young people in today's society. Young people are typically between the ages of 18 and 25, active people who are eager to explore new things. In the era of Industry 4.0, it can be seen that technology has promoted and been a catalytic tool to make young people more proactive in exploring the world and asserting their individuality.

According to Valeska Henze (2015), young people are defined as those who are old enough to leave their parents, choose a career for themselves and contribute to the development of society. According to the United Nations Human Settlements Program (UN Habitat), individuals aged 15-32 are classified as 'youth'.

According to Article 1, Chapter 1: General regulations, Vietnam Youth Law (2020) Young people defined in this Law are Vietnamese citizens aged sixteen to thirty. In the author's research, 'youth' is defined as individuals aged 18-30, as adults in this age range have full legal capacity and are fully responsible for their actions.

2.4. Factors affecting young people's intention to use mobile applications in tourism

Based on the research on essential factors affecting the intention to use mobile learning applications by Almaiah and Mulhem (2018) and the Technology Acceptance Model - TAM (Davis 1989) is typical with all the issues presented coherently in accordance with the criteria mentioned by the author, with learning about young people in Hanoi City, the author has identified the following factors:

- Reliability: That is an essential element in communication and interaction between objects through application technology (APP) and is considered an important factor in the successful online transactions. According to Mayer et al (1995), reliability is defined as the willingness of one party to suffer losses from another party's actions based on the expectation that that party will perform the entrusted action, entrusted without the supervision or control of the other party. According to Gan and Balakrishnan (2014), the reliability factor is identified as the main driver for adopting any new technology.

- Ease of using and usefulness: Developed by Davis (1989), the technology acceptance model (TAM) - is used to explain behavioral intention in the field of information technology. TAM believes that two factors: perceived usefulness (P erceive Usefulness - PU) and perceived ease of use (Perceive Ease of Use - PEU) are closely related to consumer acceptance behavior. for an information technology product or service. Through research by Dai and Palvia (2009), it was found that perceived usefulness has a positive influence on the intention to use mobile technology applications in tourism.

- Security: According to Safa (2016), security and privacy are still considered problems and obstacles to the continued use of technology, such as mobile applications and other online systems. Therefore, travel companies, creators or app users need to ensure effective levels of privacy and data integrity, along with user authorization, to ensure the safety of all users, electronic transactions and online identity authentication.

- Compatibility: Young people are more likely to adopt and use new technologies and systems when they are compatible with their needs, tasks, and tourism activities (Park et al., 2017). Compatibility is one of the most important factors influencing mobile travel adoption and should be considered (Cheng, 2012).

- Social influencing factors: Customer reviews about products and services are numerous and they influence attitudes toward potential customers (Xinyuan Zhao & ctg, 2015). They can use information from online reviews as a reference tool to see what is popular among other consumers for their own preferences (Chong et al., 2018). Furthermore, users are highly influenced by people with a higher position in society, at work, or on par with them, or from family members and acquaintances in society. The influence of others in a person's social environment on one's behavioral intentions, beliefs, and the importance of each of their opinions will influence a person's behavioral intentions (Alsughayir and Albarq, 2013).

The several research hypotheses can be formulated:

Hypothesis 1: Reliability has a positive impact on young people's intention to use mobile applications in Hanoi City.

Hypothesis 2: Ease of using has a positive impact on young people's intention to use mobile applications in Hanoi City.

Hypothesis 3: Usefulness has a positive impact on the intention to use mobile applications of young people in Hanoi City.

Hypothesis 4: Security has a positive impact on the intention to use mobile applications of young people in city Hanoi City.

Hypothesis 5: Compatibility has a positive impact on young people's intention to use mobile applications in Hanoi City.

Hypothesis 6: Social influence has a positive impact on young people's intention to use mobile applications in Hanoi City.

The author has built a scale system to evaluate factors affecting young people's intention to use mobile applications in Hanoi City, specifically: The scales of *reliability* (5 items) were adapted from research by Almaiah and Mulhem (2018), Gao et al. (2010), Chen and Barnes (2007). The scales of *ease of using* (5 items) were adapted from Davis's research (1989). The scales of *usefulness* (6 items) were adapted from Davis's research (1989). The scales of *security* (5 items) adapted from the research of Chen and Barnes (2007); Almaiah and Mulhem (2018); Shin (2015). The scales of *compatibility* (5 items) were adapted from the research of Almaiah and Mulhem (2018); Hsu et al. (2007). The scales of *social influence* (6 items) were adapted from the research of Chong et al. (2018) ; Ka Eun Lee (2016). The scales of *intention to use mobile applications in tourism* (3 items) were adapted from the research of Lu et al. (2011) and Almaiah (2018). The questionnaire was designed in Vietnamese to conduct a survey on young people who have been or are currently using mobile applications in tourism in Hanoi City. All items were measured using a 5-point Likert scale, with respondents asked to indicate their level of agreement, ranging from 1 = strongly disagree to 5 = strongly agree. To ensure reliability and validity, all questions were tested. The data analysis for this study was conducted using SPSS version 26.

3. METHODOLOGY RESEARCH

3.1. Study area

Thoroughly grasp Resolution No. 15-NQ/TW, dated May 5, 2022, issued by the Politburo, titled "On the direction and tasks of developing Hanoi Capital to 2030, with a vision to 2045" which establishes the goal of developing Hanoi "Civilization - Civilization - Modernity", truly worthy of being the national political and administrative nerve center, the heart of the whole country, the tourism industry of Hanoi capital doesn't stop overcoming difficulties caused by the COVID-19 pandemic, actively contributing to affirming Vietnam's image by attracting the attention of domestic and international tourists.

The implementation of the aforementioned task requires the involvement of the entire political system, as well as the consensus of all agencies, organizations, groups, and individuals in Hanoi in particular, and the country in general. It involves a concerted

effort to make a distinct mark with successes in digital transformation activities, technology application in management, and the development of new products. For instance, Hanoi has deployed database software for the entire tourism industry (dulich.myhanoi.vn) and initiated its operation since the beginning of 2023; implemented an investigation and survey plan to assess the current state of agricultural and rural tourism, as well as agricultural and rural tourism database management software in Hanoi city; and established a digital tourism map (available in multiple languages) showcasing information to attract tourists to serve Hanoi's smart tourism development (piloted in Hoan Kiem, Hoang Mai, Nam Tu Liem, Dong Anh, Thach That)… Additionally, travel companies, hotels, and restaurants have developed apps to streamline the process of researching, purchasing, and using travel services.

In order to use applications in tourism activities, tourists, especially young people, will be influenced by many factors, of which the main factors include: reliability, ease of use, usability, usefulness, security, compatibility, and social impact. This study will evaluate the influence of the above factors, thereby assisting Hanoi in proposing policies, initiatives, and strategies to promote the use of mobile applications in tourism activities.

3.2. Methodology research

Regarding research sample size, to best conduct regression analysis, according to Tabachnick and Fidell (1991), the sample size must comply with the formula: n ≥ 8m + 50 (n is the sample size, m is number of independent variables in the model). Meanwhile, Harris RJ. Aprimer (1985): n ≥ 104 + m (where m is the number of independent and dependent variables), or n ≥ 50 + m (if m < 5).

In case of using factor analysis (EFA), Hair and colleagues (1998) suggest that the minimum sample size should be 50, preferably 100, and the ratio of observations/measured variables should be 5/1. , meaning that for each measured variable, there needs to be at least 5 observations. Meanwhile, according to Gorsuch (1983), in case of regression analysis, the sample size requires at least 200 observations. According to the rule of thumb, the larger the research sample, the better. In this study, the research model includes 6 independent variables, 1 dependent variable, and 35 observed variables. Therefore, the sample size calculated according to Tabachnick and Fidell (1991) is n ≥ 98, according to Harris RJ. Aprimer (1985) n ≥ 111 samples; according to Hair et al (1998) n ≥175. However, to increase the representativeness of the research sample after eliminating questionnaires that lack a lot of information or are of low quality, the author determined the sample size to be 300. Regarding the research sample selection method, the author used Using convenience sampling method from October 1, 2023 to December 30, 2023.

4. RESEARCH RESULTS AND DISCUSSION

The author randomly distributed 400 questionnaires to young people who have or are currently using mobile applications in tourism in Hanoi City. Then collect and eliminate

invalid answer sheets, leaving 347 valid answer sheets for data analysis. Research results show that most observed variables in the scale have alpha coefficients greater than 0.8 and total correlation coefficients greater than 0.3. These variables will be retained for further research (Nguyen Dinh Tho & Nguyen Thi Mai Trang, 2007).

Table 1. Summary of Results

	Component				
	X1	**X2**	**X3**	**X4**	**KMO**
THI3	0.705				
THI6	0.700				
THI5	0.688				
THI1	0.683				
THI4	0.658				
TTT2	0.646				
THI2	0.629				
TTT4	0.589				
TTT5	0.587				
TTT3	0.542				
TTC3		0.797			
TTC5		0.753			
TTC2		0.751			
TTC4		0.715			0.948
TTC1		0.709			
DSD5		0.566			
DSD3		0.507			
AHXH4			0.845		
AHXH6			0.799		
AHXH5			0.765		
AHXH3			0.592		
AHXH1			0.506		
TBM5				0.789	
TBM4				0.770	
TBM2				0.697	
TBM1				0.673	
TBM3				0.568	
YDSD1	0.911				
YDSD2	0.900				0.747
YDSD3	0.900				
	X1	X2	X3	X4	YDSD	Sig
Initial Eigenvalues	1,241				2,451	0.000
Cumulative %	63,793				81,687	

Source: Author, 2024

After conducting the 4th EFA exploratory factor analysis for the independent variables, the variable groups meet the condition of 0.5 < KMO = 0,948 < 1, with a significance level of Sig. = 0.000 in the Bartlett's test (Sig < 0.05) and the extraction of factors stops at eigenvalues= 1,241 >1. These indicators all meet the requirements and the factor loading coefficients of the observed variables are greater than 0.5, so all observed variables are retained. With the dependent variable YDSD having met the requirements in Cronbach's Alpha, it should be included in the EFA analysis. The KMO index is 0.747 (0.5≤ KMO ≤1) and Sig. in the Bartlett test is 0.000 (< 0.05) so it is accepted.

The analysis results have 2 extracted factors that are consistent with the initial hypothesis, all variables have factor loading coefficients greater than 0.5. Eigenvalue reached 2.451 (greater than 1), extracted variance was 81.687 (greater than 50%), so all of these variables were retained. Specific results of the variables are shown in the table:

Table 2: Composition of factors and measurement variables after the 4th EFA analysis

Factor	New element	Measurement variable
Independent variables		
X1	Usefulness and compatibility	THI1, THI2, THI3, THI4, THI5, THI6, TTT2, TTT3, TTT4, TTT5
X2	Reliability and ease of using	DSD3, DSD5, TTC1, TTC2, TTC3, TTC4, TTC5
X3	Social influence	AHXH1, AHXH3, AHXH4, AHXH5, AHXH6
X4	Security	TBM1, TBM2, TBM3, TBM4, TBM5
Dependent variable		
Y	Intent to use	YDSD1, YDSD2, YDSD3

Source: Author, 2024

The study performed multiple regression analysis for each research model. The study used the enter method for multiple regression analysis, which means all predictor variables were entered simultaneously. The results indicate that the significance level of all variables is significantly significant, as they have significance levels smaller than 0.05. This means that all these variables have an impact on youth's intention to use mobile applications in tourism in Ha Noi city. Furthermore, it is observed that the variance inflation factor (VIF) values are all less than 2, indicating that there is no issue of multicollinearity (Hoang Trong & Chu Nguyen Mong Ngoc, 2008).

Table 3. Model results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta		Tolerance	VIF	
1	(Constant)	0.408	0.167		2,439	0.015		
	X1	0.450	0.069	0.400	6,515	0.000	0.328	3,050
	X2	0.177	0.056	0.172	3,174	0.002	0.422	2,369

	X3	0.240	0.049	0.237	4,866	0.000	0.523	1,913
	X4	0.056	0.048	0.056	1,164	0.245	0.534	1,874

a. Dependent Variable: Y= YDSD

Source: Authors, 2024

Hypotheses H1, H2, H3 all have Beta coefficients greater than 0 and significance level (sig.) less than 0.05, so these factors have the same impact on the intention to use mobile applications in tourism. Youth calendar in Hanoi City. Therefore, accept these hypotheses. As for hypothesis H4, the Beta coefficient is greater than 0 but the significance level is Sig. greater than 0.05, so this factor is removed from the regression equation.

Regression equation

The regression model representing the intention to use mobile applications in tourism of young people in Hanoi City is determined as follows:

$$Y = 0.408 + 0.4\ X1 + 0.172\ X2 + 0.237\ X3$$

Table 4. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of Estimate	Durbin-Watson	F	Sig .
first	0.759 [a]	0.577	0.572	0.47137	2,006	116,479	0.000
a. Predictors: (Constant), X1, X2, X3, X4; b. Dependent Variable: Y							

Source: Authors, 2024

The summary results of the regression model shown in table 4 show that $R^2 = 0.577$; Adjusted $R^2 = 0,572$. It proves that the regression model is built including the following independent variables X1: Usefulness and compatibility, X2: Reliability and ease of using, X3: Social influence, X4: Security, explained 57.2% of the variation in Y (intention to use mobile applications in tourism of young people in Hanoi City).

The analysis results show that F = 116.479 and the value sig. = 0.000 < 0.05 should reject the hypothesis H_0 that all regression coefficients are equal to 0, so the regression model is appropriate for the data set (Hoang Trong and Chu Nguyen Mong Ngoc, 2008, vol. 1).

5. CONCLUSION

Research to supplement theory on the model of factors affecting young people's intention to use mobile applications in tourism in particular, factors include: Usefulness and compatibility, Reliability and ease of using, social influence, security. On that basis this study aims to determine the factors of intention to use mobile applications in tourism and measure their influence (importance) and actual value on the intention to use mobile applications in tourism. Youth tourism in Hanoi City.

In addition to clarifying the influence of factors on young people's intention to use smart travel applications in Hanoi City. Accordingly, business units need to focus resources and take measures to influence factors that affect intention to use in order of priority*: Usefulness and compatibility factors*, second is *social influence factors,* and finally *Reliability and ease of using factors.*

The limitation of the study is that it focused on surveying young people, mainly students, so it is not representative and comprehensive. This is also a suggestive direction for further research.

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MEASURING THE EFFECT OF INFORMATION AND COMMUNICATION TECHNOLOGY ON SMART TOURISM EXPERIENCE IN VIETNAM

Trần Thị Huyền Trang[1]

Abtract: *The research focuses on the influence of five attributes of Information and Communication Technology (ICT) including Informativeness, Accessibility, Interactivity, Personalization, Security to the smart tourism experience of visitors through the three stages: before, during and after the trip to destinations in Vietnam. The main purpose of this study is to discover the effects of ICT properties on three stages of the trip, and the influences of the 3 stages: before, during, and after the trip to the smart tourism experience of travelers. Moreover, the research provides theoretical and practical significance for the development of smart tourism in Vietnam. The results of the study are also the basis for the State management agencies, and destination management agencies to have appropriate policies to develop ICT at the destinations to enhance the experience for tourists.*

Keywords: *Information and Communication Technology; Smart Tourism; Smart Tourism Experience.*

Tóm tắt: *Nghiên cứu tập trung vào phân tích ảnh hưởng của 5 thuộc tính của công nghệ thông tin và truyền thông (CNTT&TT) gồm có: tính thông tin, tính truy cập, tính tương tác, cá nhân hóa, độ bảo mật đến trải nghiệm du lịch thông minh của du khách thông qua ba giai đoạn trước, trong và sau chuyến đi tại điểm đến Việt Nam. Mục tiêu của nghiên cứu này nhằm khám phá ra mức độ tác động của các thuộc tính CNTT&TT đến ba giai đoạn của chuyến đi, và mức độ ảnh hưởng của 3 giai đoạn trước, trong, và sau chuyến đi đến trải nghiệm du lịch thông minh của du khách. Nghiên cứu đã có những đóng góp về lý thuyết và thực tiễn nhằm góp phần làm phong phú thêm nghiên cứu thuộc lĩnh vực này tại Việt Nam. Kết quả nghiên cứu cũng là cơ sở để các cơ quan quản lý nhà nước, và các ban quản lý điểm đến có những chính sách phù hợp để phát triển CNTT&TT tại điểm đến nhằm nâng cao trải nghiệm cho khách du lịch.*

Từ khóa: *Công nghệ thông tin và truyền thông; Du lịch thông minh; Trải nghiệm du lịch thông minh.*

1. INTRODUCTION

1.1 Theoretical aspect

Over the past decades, Information and Communication Technology (ICT) has been transforming the tourism industry worldwide (Buhalis and Law, 2008). On top of that, the progress in Information and Communication Technology has revolutionized the nature of tourism (Neuhofer, Buhalis and Ladkin, 2012) and thus changed the traditional way of forming the travel experience by changing the "traditional role, structure and process" of the travel experience (Neuhofer, 2014). In summary, ICT has really drastically changed the experience of tourists and enhanced the experience of visitors throughout the travel

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process or it can be said that the usual travel experience has been enhanced to a smart travel experience as a result of the application of ICT.

In addition to optimising the use of tourism resources, smart tourism also involves destination management, attraction preservation, and enhanced the interaction between visitor and the local (Gretzel *et al.*, 2015). Technology and tourism have made travel destinations more competitive, which has helped individuals who are involved in travel mobility. From before-trip to after-travel, smart gadgets, tourism-related platforms, and ICT can impact travellers' overall tourism experience (Buhalis *et al.*, 2015).

The effects of ICT on the tourist's travel process in three stages before, during and after the trip are shown in many different aspects such as informativeness, interactivity, personalization, etc. ICT assists tourists in identifying, customizing and purchasing tourism products (Buhalis and Law, 2008). For example, with the huge source of information from the Internet (websites and social networks), potential travelers can easily gather ideas, inspired by travelers who have had many previous travel experiences to plan their vacations and easily book services online. Travelers nowadays are provided with great information and are empowered to decide what they want in their vacation and how they will spend their vacation. During the creation of a smart experience, ICT acts as a mediator and supports tourists throughout their travel journey and enhances their overall travel experience. The impact of ICT on the smart experience that tourists receive through the three stages: before, during and after the trip is an issue that needs attention because the experience of tourists will directly affect the success or failure of a tourism program.

1.2 Practical aspect

Throughout the co-creation of the experience, ICT acts as an intermediary and supports travelers during their travel journey and enhances their overall tourism experience. The effect of ICT on the smart experience that visitors receive through the 3 stages before, during and after the trip is also a matter of concern because the experience of tourists will directly affect the success or failure of a tourism product. Therefore, it is also extremely necessary to analyze those influences, so that proposing effective strategies in further developing the smart tourism experience in Vietnam, ready to integrate with current tourism trends around the world.

However, Le Van Hoa (2019) reckons that the current studies on smart tourism destinations focuses only on researching the concepts and development of the tourism business, not evaluating and caring about the impact of ICT on the experience of visitors. This has led to managers having difficulty identifying the current situation of information technology infrastructure in their destinations as well as investing in which aspects of ICT to optimize the smart experience of visitors. Additionally, this study carefully explores generating an acceptable interpretation of the effect of smart tourism to tourism experiences in several travel stages (before-, during-, and after-), drawing on the research findings of

previous scholars. Therefore, it focuses on studying the impact of ICT on smart travel experiences in Vietnam through 3 phases before, during and after travelers' trips in the era of information technology and smart tourism. The research will help the management board of tourist destinations as well as state policy officials have more overviews to offer solutions and plans to improve ICT, improve the smart travel experience for tourists when experiencing tourism in Vietnamese destinations.

To achieve the purposes of the research, this study will focus on implementing the following tasks:

Firstly, analyze the influence of ICT attributes (Informativeness, Accessibility, Interactivity, Personalization, Security) experienced in the 3 stages before, during and after the trip in Vietnam.

Secondly, analyze the influence of 3 phases: before, during, after the trip to the smart tourism experience.

Thirdly, make proposals to the state management agencies in tourism and management at the destination to improve the ICT system in Vietnam toward improving the experience for visitors.

2. LITERATURE REVIEW

2.1. Literature review

2.1.1. Smart tourism

Smart tourism was defined as "clean, green, ethical and offering high quality services at all levels of the service chain" (UNWTO, 2009). On the other hand, the Organisation for Smart Tourism in the UK in 2011 claimed that the appliance and usage of technology in tourism field would be considered as digital or smart tourism. According to Gretzel *et al.* (2015), "smart tourism represents the integration of technology, tourism and performs the transformation of tourism through technology".

2.1.2. ICT – Information Communication Technology

In 2003, Tinio stated that ICT is the integration of various tools and technological resources used to communicate and to create, disseminate, store, and manage information. Dimitrios Buhalis (2003) claimed ICT is the complication of all electronic devices that beneficial for activities and strategy management of an organization by allowing managing information, functions and process, as well as communicating, interacting with stakeholders. According to the research of Buhalis and Amaranggana (2015), factors mentioned that measure smart experience including: (1) Personalization; (2) Context-awareness, (3) Real-time monitoring. Meanwhile Chen-Kuo Pai *et al* (2020) recommended other 5 components of smart experiences: (1) Informativeness; (2) Accessibility; (3) Interactivity; (4) Personalization; (5) Security.

- Informativeness: The informativeness represents the combination of information quality, reliability and accuracy of information received from smart technologies at tourist destinations (Huang, CD *et al*., 2017). Informativeness is an extremely important factor influencing smart technology at the destination and has the potential to directly affect tourists' attitudes towards destination's smart technology.

- Accessibility: Accessibility refers to the ease of access and use of smart technology systems at the destination. Individuals can discover more information about a destination when smart technology in that destination is highly accessible (Chen-Kuo Pai *et al*., 2020).

- Interactivity: Interactivity is identified as a support tool to promote real-time destination feedback and proactive communication using smart technology (Huang, CD *et al*., 2017). Interactivity influences visitor responses to smart technologies.

- Personalization: Personalization refers to the ability that a traveler can receive specific information to suit their individual trip planning needs by using various types of smart technologies at different destinations (Jeong, M.; Shin, HH, 2019 and No, E.; Kim, JK, 2015).

- Security: Security is understood as the security of users' personal information during access to smart technologies in different destinations (Huang, CD *et al.*, 2017). Travelers tend to use smart gadgets at the destination more when they feel that their personal information is kept safe and secure.

2.1.3. Smart Experience

Smart experience is a multi-layered experience, could be attained in the ecosystem by applying technology, together with the enthusiastic contribution between stakeholders, also an obvious creativeness spirit. That is defined as co-creation, data-driven is based on context awareness and built in real-time. Francisco Femenia-Serra and Barbara Neuhofer. S (2018) stated that in the current context, the infrastructure of almost destination is insufficient to bring smart experience to tourists. Smart tourism is evaluated based on 4 aspects: (1) Data driven; (2) Built in real-time; (3) Based on context-awareness; (4) Co-creation (Francisco *et al,* 2018).

- Data-driven: Big data is a vital component of smart tourism (Gretzel, Sigala *et al*., 2015) and it constitutes the foundation on which the value of smart experience is built. Therefore, data creation, storage, process, and usage are prime steps to construct smart experience.

- Built in real time: Beside data-driven, smart experience on smart destination is built on real-time events and the foundation of ICT allow the connection between stakeholders of tourism experience such as: providers, tourists, administration of destination,…, which helping related parties to aware the needs and wants of tourists immediately without wasting time on waiting (Wang *et al*., 2016). The interaction "on-the-go", marketing based on separate need of each customer depending on their timing, is an excellent opportunity

for smarter experience in some obvious fields such as hospitality, transport (Buhalis and Amaranggana, 2015).

- Context-awareness: Understanding tourist's context is crucial for delivering the correct service and information. However, each tourist is in each distinguished environment. According to Lamfus *et.al* (2015), tourism's context is determined by two main factors. The first factor is "personal and trip characteristics" bears individual's characters (e.g: personality, value, sociodemographic, etc.) The second factor is environment will relate to other aspects such as destination or weather, but it also comprises social factor and other cognition factors or feelings affected by external environment.

- Co-creation: Interaction among stakeholders is the basic in the smart destination system and articulated through a technological infrastructure that is supported by cutting-edge technologies and solutions. Despite that, the support from smart technologies is not enough to develop smart experience. These technologies are used to perform a dynamic co-creation for delivering actual value to all destination stakeholders (Neuhofer *et al*., 2012).

2.1.4. Relationship between ICT and Smart Experience

ICT is the key factor that helps bring smart experience for tourists. Smart technologies are not just simply electronic devices anymore, they are social platforms, cloud computing, big data, Internet of things (IoT), artificial intelligence (AI), virtual reality (VR), augmented reality (AR), mixed reality, near field communication (NFC), radio frequency identification (RFID), etc. which are related to smart tourism, especially when virtual reality (VR) and augmented reality (AR) are new smart technologies emerged lately. These technologies have becoming popular in recent years, in which the context of tourism is getting more beenintelligent (Chen-Kuo Pai *et al*., 2020). The researches about smart technologies can be divided into 2 main categories: traditional online communication channels and other new technologies. ICT is a key instrument to enhance tourists' experience in multiple spaces, multiple level of engagement and networks of interaction enabling richer, personalised experience and distinct value (Neuhofer and Buhalis, 2012). Tourists' Experience is enhanced by ICT is experienced together with co-creation under 3 stages of travelling (Neuhofer, 2014). According to Shiwei Shen *et al.* (2020), the influence of smart technologies is significant at all three phases, the stronger influence being at the first two phases (prospective and active phases).

2.2 Prosposed framework and hypothesis for the Influence of ICT on 3 Phases of Travelling

Building on the research findings of Chen-Kuo Pai *et al.*, (2020) and Shiwei Shen *et al.*, (2020), and considering the context of the tourism industry in Vietnam, the author has proposed a theoretical model. This model is based on identifying the influence of applying ICT on the smart tourism experience of travelers across three stages: before, during, and after the trip at various tourist destinations in Vietnam. The characteristics

of ICT are measured based on five factors: informativeness, accessibility, interactivity, personalization, and security (Huang *et al.*, 2017; Chen-Kuo Pai *et al.*, 2020). Particularly, informativeness is one of the most typical features because it involves tools that distribute information and data to users. Accessibility increases the popularity of ICT by applying IT platforms during travel, making it more widespread. Interactivity allows providing information to travelers and ensures they can share content about their trips with others on forums or social networking sites. Personalization ensures that the information received is suitable for the purpose and personal needs of the travelers. Security aims to prevent the disclosure of information and provides travelers with peace of mind when using ICT to support their journey. In summary, ICT has five important aspects including giving useful information, being easy to use, allowing interaction, tailoring information to personal needs, and keeping things secure for travelers.
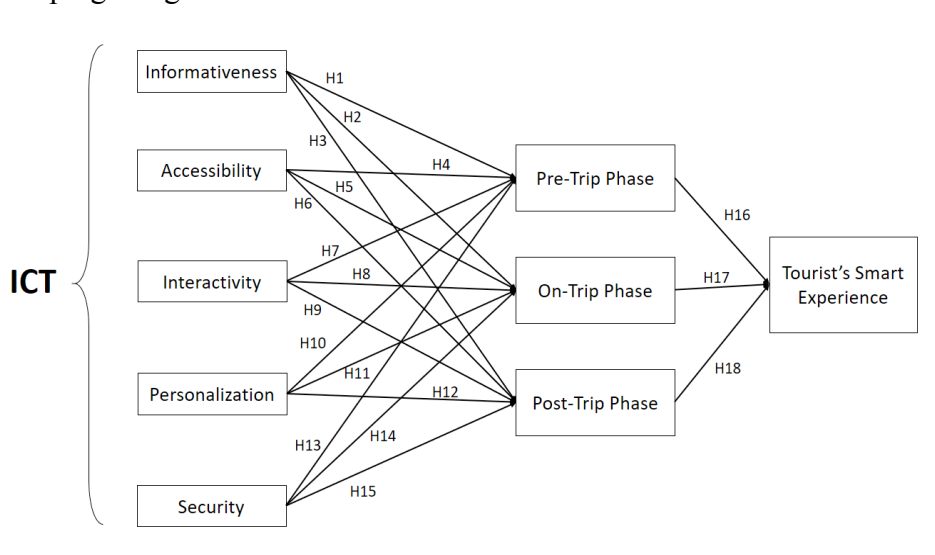
Figure 1. Research Proposed Model/Framework

(Source: Chen-Kuo Pai & et al., 2020; Shiwei Shen & et al., 2020)

Based on the theoretical background from the preceding researches, the following hypothesis are stated:

H1: Attribute "Informativeness" of ICT positively influences Pre-Trip phase.

H2: Attribute "Informativeness" of ICT positively influences On-Trip phases.

H3: Attribute "Informativeness" of ICT positively influences Post-Trip phase.

H4: Attribute "Accessibility" of ICT positively influences Pre-Trip phase.

H5: Attribute "Accessibility" of ICT positively influences On-Trip phase.

H6: Attribute "Accessibility" of ICT positively influences Post-Trip phase.

H7: Attribute "Interactivity" of ICT positively influences Pre-Trip phase.

H8: Attribute "Interactivity" of ICT positively influences On-Trip phase.

H9: Attribute "Interactivity" of ICT positively influences Post-Trip phase.

H10: Attribute "Personalization" of ICT positively influences Pre-Trip phase.

H11: Attribute "Personalization" of ICT positively influences On-Trip phase.

H12: Attribute "Personalization" of ICT positively influences Post-Trip phase.

H13: Attribute "Security" of ICT positively influences Pre-Trip phase.

H14: Attribute "Security" of ICT positively influences On-Trip phase.

H15: Attribute "Security" of ICT positively influences Post-Trip phase.

H16: "Pre-Trip phase" positively influences Tourist's Smart Experience.

H17: "On-Trip phase" positively influences Tourist's Smart Experience.

H18: "Post-Trip phase" positively influences Tourist's Smart Experience.

3. RESULTS AND DISCUSSION

3.1. Research methodology

3.1.1. Qualitative research

Qualitative research aimed at testing proposed research model, constructing survey structure and finding out in-depth notions of smart destination's managers about the development of ICT at Vietnam's smart destinations. Additionally, an in-depth interview will be conducted with a sample of four managers of Vietnamese tourist destinations that use ICT to improve visitors' smart tourism experiences serve as the interview subjects. The author's understanding of ICT attributes and how each attribute affects travelers' smart tourism experiences at the destination through three stages—before, during, and after the trip—is improved by the results of in-depth interviews. Suggestions and contributions from managers are also a great source of reference for the author in building survey questionnaires for quantitative research.

3.1.2. Quantitative research

There are two phases to the quantitative study. The preliminary questionnaire is used in the initial phase to gather information from a convenience sample. The aim of pilot data is to enhance the questionnaire's internal validity. The SPSS is used in the study to further determine the scales' dimensions.

A questionnaire was constructed after qualitative research to collect tourist's opinion, followed by selection of sampling method and implementation of both online and on-site surveys from January to March 2021. The quantitative tools used in this thesis include reliability analysis (Cronbach's Alpha), exploratory factor analysis (EFA), confirmatory

factor analysis (CFA) and structural equation modeling (SEM). Likert scale is used to assess all measurements (Vagias, 2006). As a requirement of research applying Structural Equation Modelling (SEM), five-point scales are employed to measure attitude of participants towards particular statements relevant to the influence of ICT.

The research data included 480 questionnaires filled by tourists in the age range of 16 - 50 who used ICT in their trips, for both packaged tours and backpacking tours.

3.2 Findings

3.2.1. Qualitative research's findings

Findings showed a relative unification in respondents of four interviewed managers. Specifically, four out of four managers concurred with the idea that five attributes: informativeness, accessibility, interactivity, personalization and security affect the smart experience of tourists. They believed that informativeness has the highest influence on pre-trip phase, accessibility has the greatest influence on on-trip phase, interactivity has the highest influence on on-trip phase, personalization affects post-trip phase the most and the influence of security on three phases, pre-trip phase, on-trip phase, post-trip phase, are roughly the same. Moreover, they claimed that the pre-trip phase will comprise the highest influence on tourist's smart experience because it is the fundament of smart tourism experience.

3.2.2. Descriptive Statistics

- Characteristics of Sample: The sample for this study included 480 usable questionnaires returned and that had completed data on all questions. Out of the 480 respondents included in sample, there were 55% male and 45% female. The age group of 16 - 25 comprised 67.3%, which was double the age group of 25 - 35 (30.2%), the remaining group of people aged 35 -50 paid least attention to technology in tourism. The percentage of respondents who are attending universities was dominant, 91.5%. The annual income level below 36 million VND (62.3%) and from 36 million to 60 million VND (31%) accounted for the majority of people who are interested in technology in smart tourism experiences. The number of people interested in technology in tourism mainly came from urban areas (88.5%), while rural areas accounted for only 11.5%. The rate of people traveling 1-2 times a year was 51.9%, from 3-4 times was 27.7%, and more than 4 times was 20.4%. Consumers using technology devices to buy tours accounted for 67.3% and to plan their own backpacking trips was 32.7%. Most people can use ICT at a relatively proficient level (42.9%) and very proficient (35%), while a few know how to use ICT in a rudimentary way (22.1%).

- Reliability analysis – Cronbach's Alpha: Through the measurement results of scales reliability in this model, there are nine factors that influence the smart experience of tourists, with Cronbach's Alpha > 0.6. Thus, the items designed in this study were satisfied, and reach the required coefficient reliability. The Cronbach's Alpha was reasonable at ranging from 0.756 to 0.901 (compared with acceptable Cronbach's Alpha is more than 0.7 (Hair et al, 1995).

(1)Informativeness components (INF) have a Cronbach's Alpha coefficient of 0.756;

(2)Accessibility components (AC) have a Cronbach's Alpha coefficient of 0.831;

(3)Interactivity components (INT) have a Cronbach's Alpha coefficient of 0.830;

(4)Personalization components (PER) have a Cronbach's Alpha coefficient of 0.864;

(5)Security components (SC) have a Cronbach's Alpha coefficient of 0.861;

(6)Pre-Trip phase (PRT) have a Cronbach's Alpha coefficient of 0.889;

(7)On-Trip phase (OT) have a Cronbach's Alpha coefficient of 0.901;

(8)Post-Trip phase (POT) have a Cronbach's Alpha coefficient of 0.889;

(9)Tourist's Smart Experience (SE) have a Cronbach's Alpha coefficient of 0.838.

Table 1. Results of Cronbach's Alpha analysis

Observed variable symbol	Number of observed variables	Number of eliminated observed variables	Number of remained observed variables	Cronbach's Alpha
THT	5	1 (THT3)	4	0.756
TC	5	0	5	0.831
TUT	4	0	4	0.830
CNH	4	0	4	0.864
BM	5	2 (BM4, BM5)	3	0.861
TRUOC	4	0	4	0.889
TRONG	6	0	6	0.901
SAU	3	0	3	0.889
SE	5	0	5	0.838

3.2.3 Exploratory Factor Analysis Results

Table 2. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.922
Bartlett's Test of Sphericity	Approx, Chi-Square	11148,910
	df	703
	Sig,	0,000

Following the Cronbach's Alpha analysis, the study takes all the accepted observant variables into analysis via the Principal Axis Factoring, Promax, the Kaiser-Meyer-Olkin (KMO) and Barlett to measure the compability of the survey samples.

KMO coefficient calculated from the survey sample is 0.922 greater than 0.5. The value of P-value (Sig.) is smaller than the significance level (< 0.05). It can be concluded that observed variables are correlated in the overall.

After running exploratory factor analysis twice with independent variables and excluding inappropriate scales, as well as those not converging (factor loading >= 0.5)

with the factor group, the results indicate the presence of 9 factors. These factors account for 61.15% of the total extracted variance, surpassing the criterion of >50%, ensuring reliability and practical significance. The factors are named based on the meaning of the scales and were further validated through Cronbach's Alpha coefficient, all meeting the requirement ranging from 0.756 to 0.901 (>0.7).

3.2.4 Confirmatory Factor Analysis Results

Table 3. CFA results

Factors	Cronbach's Alpha	CR	AVE
Informativeness (INF)	0.756	0.751	0.503
Accessibility (AC)	0.831	0.801	0.502
Interactivity (INT)	0.830	0.832	0.557
Personalization (PER)	0.864	0.866	0.619
Security (SC)	0.861	0.863	0.678
Pre-Trip Phase (PRT)	0.889	0.889	0.667
On-Trip Phase (OT)	0.901	0.882	0.600
Post-Trip Phase (POT)	0.889	0.889	0.728
Tourist's Smart Experience (SE)	0.838	0.840	0.573

After running Confirmatory Factor Analysis (CFA) and refining the model twice, the author excluded two variables, TC4 and THT5. The CFA results are indicated by the Chi-square/DF value of 2.403 (less than 3), CFI (Comparative Fit Index) of 0.929 (greater than 0.9), GFI (Goodness of Fit Index) of 0.871 (greater than 0.8), RMSEA (Root Mean Square Error of Approximation) of 0.054 (less than 0.06), and TLI (Tucker-Lewis Index) of 0.918 (greater than 0.9). These indices demonstrate that the research model on the impact of Information Technology & Telecommunications (ICT) on tourists' smart travel experiences is appropriate and acceptable throughout the three stages: pre-, during, and post-trip, along with the explanatory components (Hair *et al.*, 2010).

The results from Table 3 indicate that the Composite Reliability (CR) values of all variables in the model are greater than 0.7, ensuring the reliability of the proposed measurement scale. The Average Variance Extracted (AVE) values are all higher than 0.5, ensuring convergence for the model (Hair *et al.*, 2010). The Confirmatory Factor Analysis (CFA) has affirmed the robustness of the model, and both reliability and convergence have been confirmed to proceed with further analysis using Structural Equation Modeling (SEM).

3.2.5. Results of Hypothesis Testing
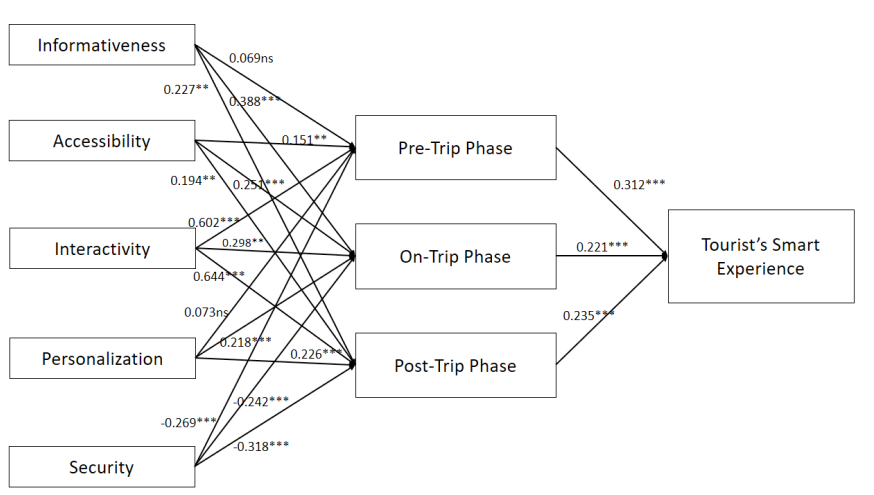
Figure 2. Results of Hypothesis Testing

The results suggested that there are two rejected hypothesises out of 18 proposed hypothesises: H1 (P=0.338 > 0.05) and H10 (P=0.209 > 0.05). The 16 remaining hypothesises are accepted in this research.

To be specific, three attributes of ICT affect the pre-trip phase in the context of Vietnam tourism are accessibility, interactivity and security. This can be explained by the lack of tourism information, especially the real-time updated information of travel destinations in Vietnam. Therefore, personalization is also difficult to promote in this period when the information source is not large enough for personalization of information. The on-trip phase and post-trip phase are affected by all 5 of the proposed attributes (informativeness, accessibility, interactivity, personalization, security), in which, only the "security" attribute of ICT has a reverse impact on all 3 phases, while the remaining attributes have a positive effect. This results showed that building security for ICT is extremely necessary, however, if security increases, it makes the user's accessibility more difficult and takes more time to access, thereby leading to a reduced travel experience. Finally, the experience in all 3 phases: before, during and after the trip has a positive influence on the smart tourism experience at tourist destinations in Vietnam. The pre-trip phase has the biggest impact, which is an important foundation to ensure the trip goes smoothly.

4. CONCLUSION

4.1 Contributions of research

The results that research achieved are:

Firstly, the study examined the ICT impact model on smart travel experiences through 3 stages before, during and after the trip is reasonable and can be applied to research. It also shows the impacts of 5 attributes on the pre-trip period. In particular, the Information

and Personalization of ICT at the destination of Vietnam has no impact on the pre-trip period. Interaction has the greatest impact on this stage, followed by the inverse effect of Security on the pre-trip period, ultimately the positive impact of Accessibility.

Secondly, the study found that all five ICT attributes have impacts on the stage during the trip. In particular, Information has the greatest impact on this stage, followed by Interaction. These two attributes make the during trip stage easier and faster. The 3rd attribute that has an impact on this stage is Accessibility. The opposite effect of Security on this stage of the trip ranked 4th and finally Personalization. Additionally, the results of the study indicated all 5 attributes of ICT to have impacts on the post-trip period. In particular, Interaction has the greatest impact on this stage, followed by the opposite effect of Security on the post-trip stage. The 3rd place is Information, followed by Personalization and the last is Accessibility.

Lastly, the experience in the 3 stages of the trip was also analyzed by evaluating their impact on the smart travel experience. In 3 stages, the pre-trip period is the one that most affects the smart tourism experience, followed by the post-trip stage, and finally the during - trip stage.

In addition to theoretical contributions, this research also proposes several managerial implications:

The development and enhancement of the Information Technology and Telecommunications (CNTT&TT) system in general, and in the tourism sector specifically, are the responsibilities of government tourism management agencies such as the Ministry of Culture, Sports and Tourism, the Vietnam National Administration of Tourism, Provincial Departments of Tourism, City Departments of Tourism, and destination management boards. To improve the smart tourism experience for travelers, collaboration among relevant parties is essential to establish standardized ICT systems, including upgrading websites, enhancing promotional activities, and tourism promotion. This collaboration aims to create synchronization in the data systems of tourist destinations in Vietnam. Active participation from local authorities, businesses, and related industries, along with proactive coordination by the Vietnam National Administration of Tourism, is crucial to achieving initial significant results, laying the foundation for improved management efficiency, promotional efforts, and tourist support.

In addition, promote the application of technology to enhance tourists' smart travel experience before and after their trips. Tourism is increasingly impacted by digital technology, particularly in the current context of the COVID-19 pandemic. Applying technology is crucial to ensuring safety and increasing convenience and experiences for tourists. Building a digital database platform for the tourism industry, including data on tour guides, travel businesses, accommodation facilities, and tourist destinations, is essential. This platform not only connects data from businesses and localities to central management authorities but also establishes a unified database for the tourism industry, serving efficient management, promotional activities, and tourism business operations.

Last but not least, enhance the management efficiency of tourist destinations and develop smart tourist destinations through standardized systems. This involves introducing and updating information about destinations, products, and tourism services at localities. Digitizing information in the tourism industry ensures the reliability, accuracy, and suitability of travel information at tourist destinations. Localities need to develop and implement plans to apply information technology in tourism, enabling connectivity and interaction among tour guides, tourists, and tourism businesses throughout the journey. Additionally, deploying software applications allows for the evaluation and ranking of tour guides and tourism businesses, as well as providing information on tourism products, services, and electronic payment options for tourists.

4.2. Limitations of research and suggesting the next direction of research

The first limitation of the study is on the research space. Most of the destinations to be reached are destinations in Northern Vietnam. The managers interviewed were also just the destination management board in the North of Vietnam like Hanoi and Ninh Binh. Therefore, the team proposes to carry out this research in both the Central and Southern destinations of the country to achieve the most general and objective for all destinations in Vietnam.

Secondly, the study has not yet discovered the new attributes of ICT that can impact the smart travel experience, but only builds on the 5 attributes of the previous study. Therefore, further studies can discover other attributes of ICT that have been proven to integrate into the research model, enhance and complete the topic.

Thirdly, the study does not really have specific explanations as to why there is a disparity in the impact between attributes on the stages of the trip, but only indicated impacts of each attribute. Later studies can do more researches about the reasons for this disparity, thereby having better solutions to improve ICT to contribute to enhancing the tourist smart experience.

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THE IMPACT OF IMPLEMENTING SOCIAL RESPONSIBILITY ON ORGANIZATIONAL TRUST OF EMPLOYEES IN VIETNAMESE TOURISM ENTERPRISES

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Abstract: *The study aimed to identify the factors of social responsibility that impact the trust in the organization among employees in Vietnamese tourism business. The sample consisted of 526 responses from 62 Vietnamese tourism business. Descriptive statistics, Confirmatory Factor Analysis (CFA), Structural Equation Modeling (SEM), and multi-group analysis were employed to analyze the collected data. The results indicated that all four factors: economic responsibility, legal responsibility, ethical responsibility, and charitable responsibility had positive effects on the trust in the organization among employees in Vietnamese tourism business, with legal responsibility having the strongest impact. The study also provided some recommendations for managers in Vietnamese tourism business to enhance their corporate social responsibility practices.*

Keywords: *Corporate social responsibility, Vietnamese tourism business.*

Tóm tắt: *Nghiên cứu xác định các thành tố của thực hiện trách nhiệm xã hội tác động đến niềm tin vào tổ chức của người lao động (NLĐ) tại các doanh nghiệp (DN) du lịch Việt Nam. Mẫu được sử dụng bao gồm 526 phiếu từ 62 DN du lịch Việt Nam. Các phương pháp sử dụng như thống kê mô tả, phân tích CFA, phân tích SEM và phân tích cấu trúc đa nhóm được sử dụng để phân tích dữ liệu thu thập được. Kết quả chỉ ra rằng cả 4 thành tố: trách nhiệm kinh tế, trách nhiệm pháp lý, trách nhiệm đạo đức và trách nhiệm từ thiện đều có tác động tích cực đến niềm tin vào tổ chức của NLĐ tại các DN du lịch Việt Nam trong đó nhân tố trách nhiệm pháp lý có tác động mạnh nhất. Đồng thời nghiên cứu cũng gợi ý một số giải pháp cho các nhà quản lý tại các doanh nghiệp du lịch Việt Nam trong việc tăng cường thực hiện trách nhiệm xã hội của doanh nghiệp.*

Từ khóa: *Thực hiện, trách nhiệm xã hội, doanh nghiệp du lịch Việt Nam.*

1. INTRODUCTION

The term Corporate Social Responsibility (CSR) was officially coined in 1953 when H.R. Bowen published his book titled "The Responsibilities of the Businessman" with the aim of promoting and urging businessmen not to harm the rights and interests of others. It called for philanthropy to compensate for the damages caused by businesses to society. Research conducted by various authors has shown that CSR has a positive impact on the business performance of companies. CSR is regarded as an important strategy for companies to gain a competitive advantage in developed countries (Matten & Moon,

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2008). An increasing number of companies have realized that their objectives should not only focus on maximizing profits but also on fulfilling economic responsibilities, legal obligations, ethical responsibilities, charitable actions towards the environment, workers' well-being, transparent corporate governance, and sustainable production practices (Yperen, 2006).

According to statistics from the Ministry of Culture, Sports and Tourism (2022), in 2019, Vietnam had 4.9 million workers working in the tourism sector; In 2020, nearly 80% of personnel in this field were cut; In 2021, only 25% of the remaining people work full time... Vietnam's tourism was completely "frozen" to prevent the epidemic, "suspending" job opportunities and "stealing" income from almost everyone. As a result, in order to make a living, some people have changed jobs and completely stopped working; temporary job seekers waiting for the industry to "live" again to return... Not to mention, when the industry reopens, many customer needs and tastes have changed, the way of thinking about the profession and serving customers has also more or less changed. Skills and acumen may sometimes be a bit eroded... Just like that, when the tourism industry in general officially opened, many challenges were posed, putting pressure on creating trust in the organization. In addition, the whole country is trying to implement many solutions to open tourism, which is a spearhead that has been identified by the Government as a key focus in economic recovery. On the other hand, in the period of competition and economic development, workers always have the right to choose and have many choices about which businesses have a good working environment for them. Implementing CSR will create job satisfaction (Parvin & Kabir, 2011; Alafi et al, 2014) and intangible values that help bind employees together, making employees proud and more aware of the business. career as well as tightening the relationships between employees and businesses (Thao & Ho, 2015). It is job satisfaction and employee engagement that will create trust in the organization among employees and businesses (Yilmaz, 2008), improving work quality and long-term commitment to the business, making an important contribution to solid success as well as helping Vietnamese tourism businesses implement their sustainable development strategies during the integration process.

Although awareness of social responsibility and trust in organizations in Vietnam have recently received relatively much attention from businesses, a number of in-depth studies on the impact of social responsibility on trust organizations, especially in Vietnamese tourism businesses in the context of sustainable development, are still unproven. Based on the aforementioned reality, this article aims to examine the impact of CSR implementation on employees' trust in Vietnamese tourism companies. Based on the research findings, the article will discuss useful solutions for companies to enhance CSR implementation and increase employees' trust in the organization within the context of Vietnamese tourism companies.

Research proposes a model of the impact of social responsibility on trust in the organization of employees in enterprises. Testing the impact of economic responsibility, legal responsibility, ethical responsibility and charitable responsibility on trust in the organization of employees at Vietnamese tourism enterprises.

2. THEORETICAL FRAMEWORK AND RESEARCH HYPOTHESES

2.1. Corporate social responsibility implementation and organizational trust

2.1.1. Concept and measurement of corporate social responsibility

- Concept of corporate social responsibility

Bowen (1953) defined CSR as the "obligation of businessmen to pursue policies, make decisions, or take actions that are desirable in terms of the objectives and values of society." In line with Bowen's philosophy, Carroll (1999) further developed the concept of CSR and clarified its components, including economic responsibility, legal responsibility, ethical responsibility, and philanthropic responsibility. Carroll's perspective on CSR is explicitly depicted in Figure1.
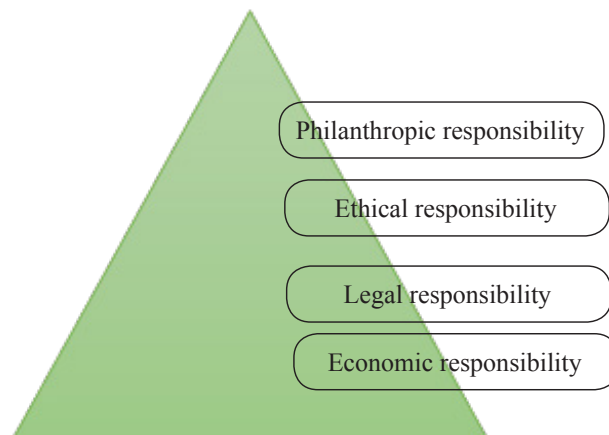
Figure 1. Carroll's CSR pyramid model (1991, 1999)

Economic responsibility: It is manifested through efficiency and growth, which are prerequisites driven by the profit-seeking motive of business entrepreneurs. On the other hand, businesses are the fundamental economic cells of society; therefore, economic function must always be prioritized (Carroll, 1999).

Legal responsibility: It is part of the "social contract" between businesses and society. The government is responsible for enacting social regulations into legal texts, so that businesses can pursue their economic goals within a fair framework and meet the standards expected by society (Carroll, 1999). Businesses must comply with local, national, and international laws and regulations.

Ethical responsibility: It refers to ethical rules and values that are socially accepted but have not been incorporated into legal texts (Carroll, 1999). Businesses fulfill ethical responsibility by avoiding harm and damage to society, respecting human rights, and doing what is right.

Philanthropic responsibility: It includes actions by businesses that go beyond societal expectations, such as donations, support, scholarship funding, financial contributions, and efforts for community projects. The difference between philanthropic responsibility and ethical responsibility is that philanthropic actions are entirely voluntary (Carroll, 1999; Thang, 2015).

Carroll's pyramid model of responsibilities (1991, 1999) is comprehensive and widely applied by researchers and scholars. In Vietnam's tourism industry, companies commit to implementing CSR through codes of conduct such as SA8000, WRAP, and international standards established by the Vietnam Global Compact Network and the International Finance Corporation (IFC). These standards encompass economic responsibility, legal compliance responsibility, ethical responsibility, and philanthropic responsibility. Therefore, this study is based on the theoretical framework of Carroll's pyramid model (1991, 1999) and is situated in the context of tourism companies in Vietnam.

- *Measurement of Corporate Social Responsibility*

The measurement of corporate social responsibility includes economic responsibility, legal responsibility, ethical responsibility, and philanthropic responsibility. These measurement dimensions are inherited from A. Carroll (1991, 1999), Thao & Ho (2015), Khanh (2018). The measurements are assessed on a Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree).

Economic responsibility measurement consists of 5 observed variables, encoded as follows: EcR-Striving for optimal profitability; EcR2-Seeking to enhance workforce productivity; EcR3-Efforts to reduce operational costs; EcR4-Continuous improvement of product quality; EcR5-Establishing a long-term growth strategy.

Legal responsibility measurement consists of 4 observed variables, encoded as follows: LR1-Compliance with business-related legal regulations; LR2-Adherence to principles of transparency and fairness in recruitment and employee welfare; LR3-Product compliance with legal requirements; LR4-Staying informed of relevant laws and regularly updating employees.

Ethical responsibility measurement consists of 5 observed variables, encoded as follows: EtR1-Adherence to ethical principles in business practices; EtR2-Providing protection for employees reporting unethical behavior in the workplace; EtR3-Being recognized by the community as a trustworthy enterprise; EtR4-Providing accurate information to partners and customers; EtR5-Training employees to adhere to professional standards.

Philanthropic responsibility measurement consists of 6 observed variables, encoded as follows: PR1-Encouraging employee participation in community activities; PR2-Allocating company resources to philanthropic activities; PR3-Concern for addressing social issues; PR4-Efforts to contribute to society beyond profit-driven objectives; PR5-Supporting the development of the local community; PR6-Strong awareness of fulfilling corporate social responsibility beyond mere profit-making.

2.1.2. The concept and measurement of organizational trust

• *The concept of organizational trust*

Belief in an organization is a concept that has attracted the attention of many researchers. According to Kramer & Tyler (1996), for present-day organizations, trust is crucial for long-term survival and success. Trust is one of the most important social perspectives that enables individuals to proactively engage with the social environment, and it is present in all human relationships. In fact, without trust (in others, in organizations, etc.), there can be no collaboration, and ultimately, no society (Falcone & Castelfranchi, 1998). In other words, humans need a certain level of trust to interact with the external world because the world we live in is characterized by uncertainty. The function of trust is to persuade us that uncertainties will not harm or deceive us. When we are certain that those uncertainties do not threaten us or our desired goals, we can interact with the outside world.

Trust in an organization is formed based on the values of organizational culture, characterized by behavioral standards, core values, and trust. Trust in an organization plays an important role in improving its operational performance (Bateman & Strasser, 1984; Laka-Mathebula, 2004). Whether large or small, organizations operating in domestic or international markets are highly aware of building and strengthening the trust of employees within the organization. An organization that earns the trust of its employees will have more energy and resources released, resulting in a flexible organizational structure that can effectively respond to market challenges and pressures. Consequently, its operational efficiency will be higher. Therefore, trust in an organization is a concept that encompasses various aspects. Typically, trust is associated with human relationships and carries a unidirectional meaning. However, when considering the scope of an organization, trust is perceived in a broader sense: (i) Trust in an organization is the result of human relationships within the organization at the same level (colleagues) and between different levels (groups, superiors-subordinates, units, organization, external stakeholders); (ii) Trust in an organization is formed based on the values of organizational culture (corporate culture) characterized by behavioral standards, core values, and trust; and (iii) Trust is the result of communication between individuals, such as providing accurate information and demonstrating appropriate sincerity and openness (Quan, 2013).

Trust in an organization plays a crucial role in enhancing the performance of its activities/operations (Laka-Mathebula, 2004). Regardless of their size or whether they operate in international or domestic markets, organizations are highly conscious of building and reinforcing trust within the organization. An organization with high levels of trust, energy, and released resources will have a flexible organizational structure and a better ability to adapt to market challenges and pressures, leading to higher operational efficiency.

- *Organizational trust scale*

The measurement of trust in an organization is based on the research of Kramer and colleagues (1996), Thao & Ho (2015), Prutina (2016), Thang (2018). The measurement is conducted using a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement of trust in an organization consists of 5 observed variables encoded as follows: OTr1-Trust that one can leverage their abilities and personal development within the organization; OTr2-Trust that one's rights and benefits are fully guaranteed within the organization; OTr3-Trust that one is respected and recognized within the organization; OTr4-Trust that organizational leadership always cares about individual opinions; OTr5-Trust that one can leverage their abilities and personal development within the organization.

2.2. Hypotheses and research model

Organizations that effectively implement CSR will have an organizational culture and work attitude that aligns with CSR activities, and CSR regulations will be harmonized with the business processes (Collier & Esteban, 2007). Therefore, when a business implements CSR, it creates a positive context that both current and future employees will evaluate positively (Williams & Bauer, 1994). Furthermore, CSR regulations and implementation help employees feel comfortable because they contribute to their personal branding within the company, enhancing their image (Lee & colleagues, 2012, 2013). Regardless of the factors, CSR has a positive impact on employees' perception of the company. Evidence shows that the contextual factor is crucial, as employees trust the organization because they understand that it fosters their commitment, rights, and welfare. Employees also trust the organization when they feel comfortable and have good collaboration with the company, which is another decisive factor. When employees understand that their organization is engaging in CSR activities, it makes them proud to be members of that organization (You & colleagues, 2013). In other words, these employees support the CSR activities of their organization and create benefits that help them trust the organization.

When studying the relationship between economic responsibility, legal responsibility, ethical responsibility, philanthropic responsibility, and trust in the organization, Lee and colleagues (2012) found that only economic responsibility and philanthropic responsibility have a positive impact on trust in the organization. In another study by Lee and colleagues (2013), it was explained that only legal responsibility has a positive impact on trust in the

organization. Similarly, in the study by Thao & Ho (2015), a positive relationship was found among the following factors: economic responsibility, legal responsibility, ethical responsibility, and philanthropic responsibility. Therefore, implementing CSR (economic, legal, ethical, and philanthropic responsibilities) will have positive effects on employees' trust in the organization. Based on that, the hypotheses H1, H2, H3, H4 are proposed as follows:

H1: The implementation of the organization's economic responsibility has a positive effect on employees' trust in the organization.

H2: The implementation of the organization's legal responsibility has a positive effect on employees' trust in the organization.

H3: The implementation of the organization's ethical responsibility has a positive effect on employees' trust in the organization.

H4: The implementation of the organization's philanthropic responsibility has a positive effect on employees' trust in the organization.

These hypotheses will be represented in the research model, where employees' trust in the organization is the dependent variable, the remaining variables are independent variables (Figure. 2).
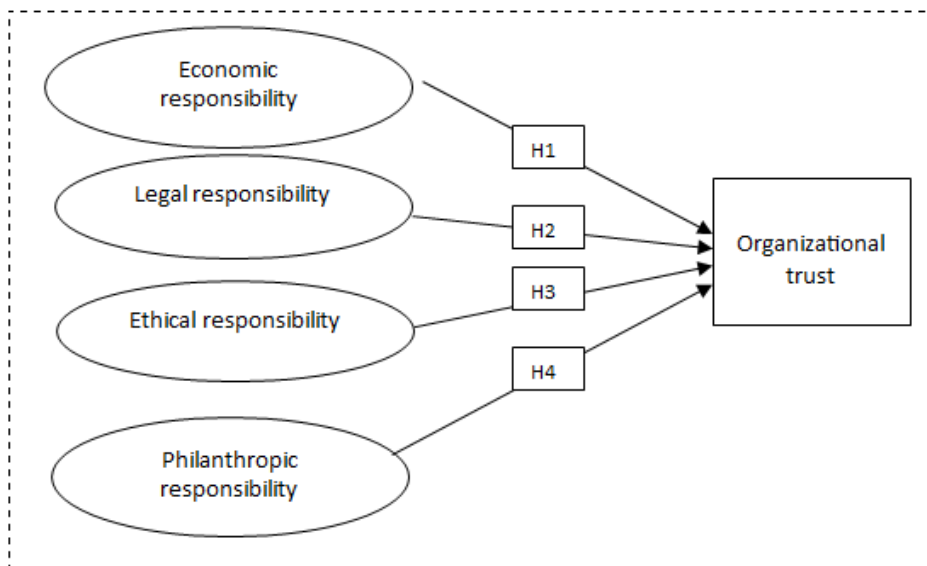
Figure 2. Proposed research model

Source: Compiled by the authors

3. RESEARCH METHOD

The study was conducted using a mixed-methods approach to investigate and evaluate the current status of CSR implementation for employees in the textile and tourism industry in Vietnam, including:

3.1. Design a survey questionnaire

From the synthesized theoretical foundation, the observed variables were constructed on a 5-point Likert scale (ranging from 1 = strongly disagree to 5 = strongly agree) reflecting the five comprehensive research concepts. The qualitative study was conducted through in-depth interviews with 10 experts knowledgeable about CSR to supplement and adjust the observed variables for better understanding and relevance in the context of tourism companies in Vietnam. The results of the qualitative study helped form a quantitative questionnaire consisting of 25 observed variables, reflecting four independent variables related to CSR implementation by companies and one dependent variable, which is employees' trust in the organization at tourism companies in Vietnam.

- *Survey participants:* The survey was conducted among managers and employees at tourism companies who are involved in CSR implementation. Therefore, the two survey participants in this study are managers and employees at tourism companies in Vietnam.

- *Survey content:* The survey content was tailored to each participant group with the aim of providing information at tourism companies in Vietnam, including economic responsibility, legal responsibility, ethical responsibility, philanthropic responsibility, and trust in the organization.

3.2. Survey conduct

- *Survey period:* The survey was conducted at tourism companies in Vietnam from November 2023 to December 2023.

- *Survey sample size:* Based on the capital scale and number of employees, tourism businesses are divided into two groups: Group 1 - Large-scale companies and Group 2 - Medium and small-scale companies. The research team used a stratified sampling method to select survey participants, which means the survey sample included tourism companies from both Group 1 and Group 2. Due to the high concentration and relatively uniform characteristics of tourism companies, within each group, the research team randomly selected companies using a simple random sampling method. They contacted companies directly, via email, and received responses from 62 tourism companies operating in various provinces and cities in Vietnam.

According to Hair et al. (1998), the general rule is that the sample size should be equal to or greater than 100, and the smallest sample size should have the desired ratio of n = 5 * k, where k is the number of observed variables equivalent to the number of research questions. On the other hand, according to Roger (2006), the minimum sample size for practical research is 150-200 observations. Therefore, for this study, which has 25 observations related to the impact of CSR implementation on employees' trust in the organization at tourism companies in Vietnam, the minimum sample size is 25 * 5 = 75.

To ensure representativeness, the research team attempted to collect as many survey responses as possible. However, due to limitations in accessibility, they were only able to distribute 590 survey questionnaires and received 526 valid responses, achieving the response rate. For each tourism company in Vietnam, survey participants were randomly selected as follows:

For managers: The number of questionnaires distributed was 135 (each company sent 3-5 surveys to managers, including the Chairman of the Board of Directors, CEO, Deputy CEOs, HR Managers, Improvement Department Managers, Life Department Managers, etc.). The number of returned questionnaires was 113, with 22 invalid questionnaires due to incomplete information.

For employees: The number of questionnaires distributed was 455 (each company randomly selected 12-16 employees, including direct production workers in workshops and factories). The number of returned questionnaires was 413, with 42 invalid questionnaires due to incomplete information.

The survey data was then entered into an Excel file, and data analysis was performed using SPSS 26 and AMOS version 24 software. Specifically, the SPSS software was used for descriptive statistical analysis, reliability analysis using Crobanch's Alpha, while the AMOS software was used for exploratory factor analysis (EFA), confirmatory factor analysis (CFA), structural equation modeling (SEM), and bootstrap testing.

4. RESULTS

4.1. Sample characteristics

Regarding gender: Based on the survey of 62 tourism companies, a total of 590 questionnaires were distributed, and 526 questionnaires were returned, resulting in a response rate of 89.15%. Female workers accounted for 77.2%, while male workers accounted for 22.8%. This is because of the nature of the tourism industry, which requires attention to detail and dexterity, making it suitable for female workers.

Regarding educational level: It can be seen that the number of workers with a college degree accounts for a high proportion of 49.0%, followed by a university degree of 32.3% while the proportion of vocational training qualifications is 10.8%, high school level is 6.3%, university and postgraduate level is 1.5%. This reflects the characteristics of tourism businesses, which mainly have college degrees or higher.

Regarding job positions: Out of the 526 survey respondents, 113 were managers and 413 were employees. This result partly reflects the fact that managers and employees are the main target groups in tourism companies in Vietnam.

Regarding business scale: Among the surveyed tourism companies, 75.1% were small and medium-sized enterprises, while 24.9% were large-scale enterprises. This is

in line with the reality of tourism companies in Vietnam, which are predominantly small and medium-sized.

Regarding years of establishment: The survey data shows that 73.6% of the surveyed companies have been established for more than 10 years, followed by 21.9% of companies that are between 5 and 10 years old, and 4.6% of companies established within the last 5 years.

4.2. Factor analysis

4.2.1. Confirmatory factor analysis (CFA)

In scale validation, the Confirmatory Factor Analysis (CFA) method has several advantages over traditional methods such as correlation coefficient and exploratory factor analysis (EFA) (Bagozzi & Foxall, 1996). The reason is that CFA allows us to test the theoretical structure of measurement scales, such as the relationship between a research concept and other concepts, without being biased by measurement errors. Moreover, we can test the convergent validity and discriminant validity of the scale without requiring multiple studies, as in the traditional MTMM method (Steenkamp & Van Trijp, 1991).

Table 1: Pattern Matrix[a]

	Factor				
	1	2	3	4	5
EcR1	0.765				
EcR4	0.716				
EcR5	0.713				
EcR3	0.602				
EcR2	0.601				
LR3		0.763			
LR2		0.682			
LR1		0.631			
LR4		0.560			
OTr3			0.743		
OTr1			0.641		
OTr4			0.632		
OTr2			0.605		
EtR4				0.897	
EtR5				0.708	
PR5					0.686
PR6					0.571
PR4					0.528

Source: Synthesized results from SPSS 26

The results of exploratory factor analysis (after 3 iterations) indicate that the observed variables can be grouped into 5 factors as shown in the table: Economic Responsibility factor (including observed variables EcR1, EcR4, EcR5, EcR3, EcR2); Legal Responsibility factor (including observed variables LR3, LR2, LR1, LR4); Organizational Trust factor (including observed variables OTr3, OTr1, OTr4, OTr2); Ethical Responsibility factor (including observed variables EtR4, EtR5); and Philanthropic Responsibility factor (including observed variables PR5, PR6, PR4). The observed variables OTr5, EtR1, EtR2, EtR3, PR1, PR2, PR3 were excluded from the model because their regression weights were < 0.5 and did not meet the requirements.

4.2.2. Confirmatory factor analysis (CFA) result
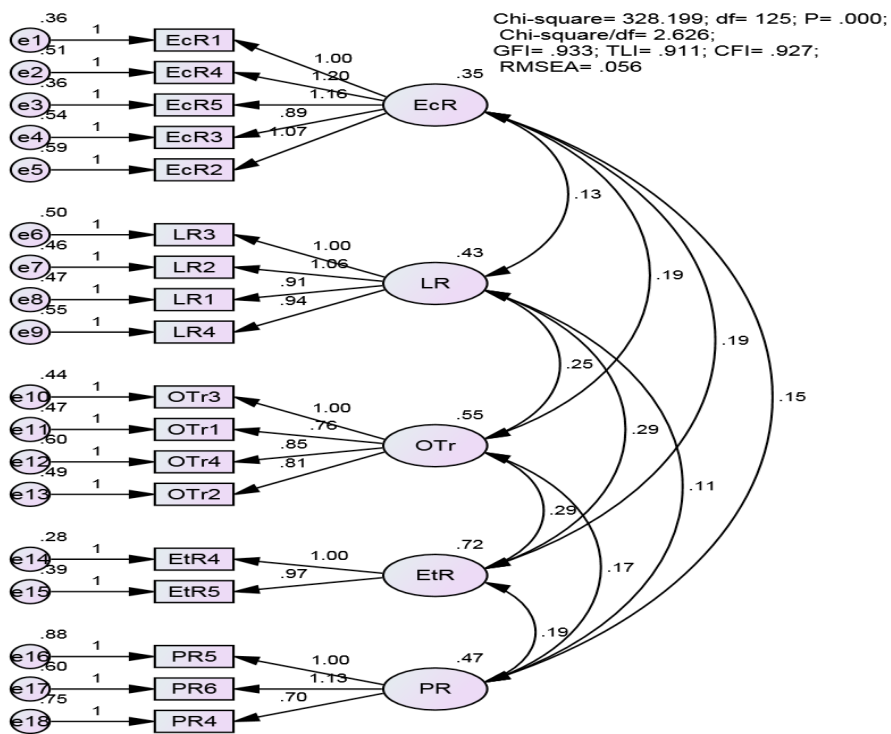
Figure 3. Confirmatory Factor Analysis (CFA) Results (standardized)

Source: Synthesized results from SPSS 26 and Amos 24

The results of the confirmatory factor analysis (CFA) model are presented in Figure 3. This model has 125 degrees of freedom. Figure 3 shows the values of the chi-square indices = 328.199 with a p-value of .000. Other fit indices include chi-square/df = 2.626, GFI, TLI, CFI all greater than 0.9 (Bentler & Bonett, 1980), and RMSEA = 0.056. These results suggest that the model is considered to be a good fit for the market data.

(i) Reliability of the scale

The evaluation of the reliability of a scale through: Cronbach's alpha coefficient, item-total correlations, and composite reliability.

Table 2. Summary of the Reliability Assessment Results of the Scale

Scales	Number of obvered variables	Reliability		Result
		Cronbach alpha	The lowest variable-total correlation	
Economic responsibility	5	0.808	0.525	Meet the requirement
Legal responsibility	4	0.765	0.528	
Ethical responsibility	5	0.768	0.419	
Philanthropic responsibility	6	0.714	0.395	
Organizational trust	5	0.759	0.525	

Source: Synthesized results from SPSS and Amos 21

The Cronbach's alpha coefficients for all the constructs are higher than 0.7 (Nunnally & Bernstein, 1994), and the item-total correlations are all above 0.3, indicating that all the component scales in the model achieve satisfactory reliability. Therefore, the research constructs meet the requirements for validity and reliability.

(ii) Unidimensionality/Singularity

The CFA analysis yielded a chi-square value of 328.199 with a p-value of 0.000. Other fit indices include chi-square/df = 2.626, GFI, TLI, and CFI all higher than 0.9 (Bentler & Bonett, 1980), and RMSEA = 0.056 < 0.08, indicating that the model is a good fit to the market data. This provides the necessary condition for the observed variables to achieve unidimensionality (Steenkamp & Van Trijp, 1991).

(iii) Convergence

All standardized factor loadings are > 0.5, indicating that the measurement scales of the constructs achieve convergence. If any observed variable had a loading < 0.5, it would need to be removed, but there are no such cases in this model.

(iv) Discrimination

The correlation coefficients between the research constructs in the model are positive, < 1, and significantly different from 1 (p-values < 0.05). Therefore, the correlation coefficients of each pair of constructs differ significantly from 1 at a 95% confidence level. Hence, the research constructs in this model have achieved discrimination.

4.2.3. Results of hypothesis testing in the research

Table 3. Regression Weights (Default model)

Parameter	Estimate	S.E.	C.R.	P	Label
OTr ←EcR	0.253	0.073	3.462	***	
OTr←LR	0.373	0.076	4.892	***	
OTr←EtR	0.148	0.057	2.593	***	
OTr←PR	0.125	0.069	1.818	0.008	

Source: Synthesized results from SPSS and Amos 21

The results of the SEM analysis on the regression weights indicate that all four factors in the model have an impact on employees' trust in organizations in Vietnamese tourism companies. These factors include ethical responsibility, philanthropic responsibility, legal responsibility, and economic responsibility, and all of them are statistically significant at a 95% confidence level. The regression weights in the table are all positive, indicating that the concepts of ethical responsibility, philanthropic responsibility, legal responsibility, and economic responsibility have a positive influence on employees' trust in organizations in Vietnamese tourism companies. The standardized regression weights are also positive, indicating that the concepts of ethical responsibility, philanthropic responsibility, legal responsibility, and economic responsibility have a positive impact on employees' trust in organizations in Vietnamese tourism companies. Among the four factors, legal responsibility has the strongest influence with a standardized regression weight of 0.373, followed by economic responsibility with a weight of 0.253. Ethical responsibility has a weight of 0.148, and community responsibility has the weakest influence with a standardized regression weight of only 0.125 (see Figure 4 below).
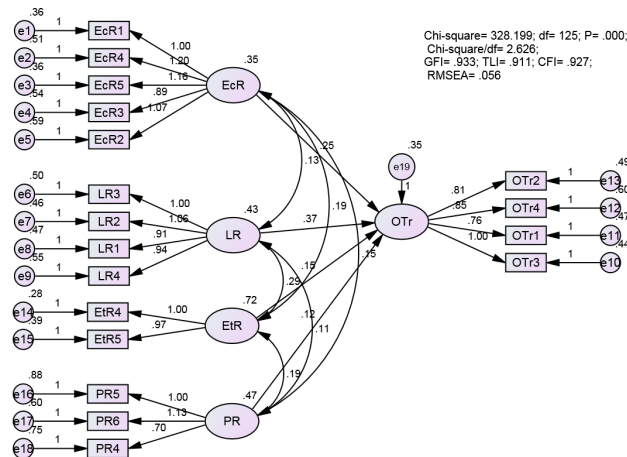
Figure 4. Results of the analysis of the standardized linear SEM model

Source: Synthesized results from SPSS 26 and Amos 24

In addition, these four factors have accounted for 61% of the variation in the dependent variable, which is the trust in the organization among employees in Vietnamese tourism companies.

Table 4. Result of Hypotheses testing

Hypothesis	Result
H1: The implementation of the organization's economic responsibility has a positive effect on employees' trust in the organization.	Accepted
H2: The implementation of the organization's legal responsibility has a positive effect on employees' trust in the organization.	Accepted
H3: The implementation of the organization's ethical responsibility has a positive effect on employees' trust in the organization.	Accepted
H4: The implementation of the organization's philanthropic responsibility has a positive effect on employees' trust in the organization.	Accepted

Therefore, all four initial hypotheses are accepted, and all factors have a positive impact on employees' trust in the organization in Vietnamese tourism tourism businesses. The linear regression equation represents the relationship between variables in the model, depicting the influence of CSR implementation on employees' trust in the organization in Vietnamese tourism businesses as follows:

$$OTr = 0,253.EcR + 0,373.LR + 0,148.EtR + 0,125.PR$$

4.2.4. Bootstrap test and Multigroup structural analysis

- ***Bootstrap test***: To assess the robustness of the research model, the Bootstrap method was used. This method involves repeatedly sampling from the original sample (n = 526) in which the original sample plays the role of the population (Schumacker & Lomax, 1996). The number of bootstrap replications in the study was set to B = 1000, and the results showed that the sample was well approximated, and the values tended to be close to the population estimates. In the table, the "Estimate" column represents the estimates obtained using the Maximum Likelihood (ML) method, while the remaining columns are calculated using the Bootstrap method. The "Mean" column provides the average of the Bootstrap estimates. The "Bias" column indicates the difference between the Mean and Estimate columns. The "CR" (Composite Reliability) column is calculated in Excel by dividing the Bias column by the SE (Bias) column. Looking at the table, we can observe that the absolute value of CR is very small compared to 2, indicating that the bias is minimal and not statistically significant at a 95% confidence level. Therefore, the estimates in the SEM model can be considered reliable.

Table 5. Boostrap test

Parameter	Estimate	SE	SE-SE	Mean	Bias	SE-Bias	CR
OTr←EcR	0.204	0.085	0.004	0.250	-0.003	0.006	-0.500
OTr←LR	0.339	0.094	0.005	0.380	0.007	0.007	1.000
OTr←EtR	0.169	0.069	0.003	0.146	-0.002	0.005	-0.400
OTr←PR	0.115	0.085	0.004	0.129	0.005	0.006	0.833

Source: Synthesized results from Amos 21

- *Multigroup Structural Analysis:* Using two models, the configural model and the invariant model, we test the following hypotheses:

H0: The chi-square value of the configural model is equal to the chi-square value of the invariant model.

H1: There is a difference in chi-square values between the configural model and the invariant model.

To compare the differences between the configural and invariant models for the manager and worker groups, we have the following table:

Table 6. Comparison between the variable model and the invariant model

	Chi-square	Df
Variable Model	544.129	250
Invariant Model	547.281	254
Discrepancy	3.152	4
Chidist (3.152,4) =	0.533	

Source: Synthesized results from SPSS and Amos 21

Based on the table, we can see that Chidist = 0.533 > 0.05. Therefore, we accept H0, indicating that we will choose the invariant model. This means that there is no significant difference in the effects of economic responsibility, legal responsibility, ethical responsibility, and charitable responsibility on the trust in the organization among managers and workers in the Vietnamese textile and tourism companies.

5. IMPLEMENT THE LEGAL RESPONSIBILITY OF VIETNAMESE TOURISM COMPANIES

Research proposes a model of the impact of social responsibility on trust in the organization of employees in enterprises. Testing the impact of economic responsibility, legal responsibility, ethical responsibility and charitable responsibility on trust in the organization of employees at Vietnamese tourism enterprises. The results of the SEM model analysis on the regression weights indicate that all four factors in the model have an impact on employees' trust in organizations in Vietnamese tourism companies, including ethical responsibility,

charitable responsibility, legal responsibility, and economic responsibility. Among them, legal responsibility has the strongest impact, followed by economic responsibility, ethical responsibility, and charitable responsibility, which has the lowest impact on employees' trust in organizations in Vietnamese tourism companies. The research findings show a difference compared to previous studies, as all four components of CSR have a positive impact on organizational trust, whereas Lee et al. (2012) found that only economic responsibility and philanthropic responsibility have a positive impact on organizational trust. In another study by Lee et al. (2013), they explained that only legal responsibility positively influences organizational trust, while Thao & Ho (2015) found a positive relationship between the four factors: economic responsibility, legal responsibility, ethical responsibility, and charitable responsibility, and organizational trust, with legal responsibility having the strongest impact and economic responsibility having the weakest impact. Therefore, the impact of CSR implementation factors on organizational trust varies depending on the characteristics of each country and business sector. Vietnamese tourism companies need to consider CSR implementation as a long-term strategy to create business value, gain employees' trust, and build their loyalty. Hence, some solutions to increase employees' trust in organizations in Vietnamese tourism companies include:

- Implement the legal responsibility of Vietnamese tourism companies: In the hierarchy of CSR, if economic responsibility is considered the inherent instinct of any business organization, legal responsibility is seen as the starting point of CSR. The legal framework in our country currently provides comprehensive ethical standards for social entities, including tourism companies. According to the report of the tourism industry inspection in 2022, it was pointed out that many tourism companies have not fully and seriously complied with legal regulations. Widespread phenomena such as evading contributions and accumulating social insurance debts, exceeding the prescribed overtime working hours, etc., still exist. Therefore, Vietnamese tourism companies need to enhance the proper implementation of their legal responsibilities in their business operations.

To effectively fulfill legal responsibilities, Vietnamese tourism companies need to enhance legal knowledge training for their management leaders to create favorable conditions for business activities. Furthermore, through legal knowledge training, the spirit of CSR can be promoted among the entrepreneurial team. In addition, the legal document system is diverse, issued by various authorities, and frequently supplemented and adjusted. Therefore, updating policies and new legal documents related to tourism companies often encounter difficulties. Therefore, there needs to be a filtering and concentration process to help tourism companies quickly and conveniently access relevant legal regulations. After updating the regulations related to the textile industry, tourism companies should provide legal knowledge training for employees through regular or ad-hoc training sessions and continuously update new legal provisions on the company's internal website and bulletin board.

- Implement the economic responsibility of Vietnamese tourism companies: Toursim companies ensure the effective implementation of economic responsibility, which includes requirements such as economic development, productivity levels, the desire to achieve and maintain a high employment rate. Based on these requirements, they establish a comfortable, friendly, and open working environment for employees to consider the company as their second home, fostering retention and development.

The leadership of tourism companies and the human resources department should provide guidance and support to departments in setting specific CSR implementation goals. Salary and incentive schemes, as well as non-financial policies, should be aligned with CSR implementation. For example, when employees come up with innovative ideas to improve CSR, such as energy-saving initiatives or reducing pollution emissions, the company should recognize and reward them, either through recognition or monetary incentives. These activities will build trust and support from employees in Vietnamese tourism companies.

- Implement the ethical responsibility of Vietnamese tourism companies: Enhancing awareness and implementing ethical standards in the business operations of tourism companies during economic development and integration. Besides complying with legal regulations, it is necessary to maintain integrity in ensuring the interests of stakeholders of tourism companies. In particular, it is essential to establish, maintain, and develop trustworthy partnerships both domestically and internationally with customers, suppliers, and employees of tourism companies.

Tourism companies should detail ethical responsibility programs and disseminate them to all employees. Regardless of the program, there should be improvements in CSR implementation and increased participation of employees in CSR activities. Additionally, the leadership in tourism companies can explore the desires and thoughts of employees regarding CSR implementation and proactively solicit employee initiatives regarding CSR activities that the company should undertake. In this way, CSR programs and ethical responsibilities can be adjusted according to employees' desires, tightly linked to their obligations and rights. This approach increases the sustainability of CSR implementation in tourism companies and enhances employees' trust in the organization.

- Implement philanthropic responsibility of Vietnamese tourism companies: Philanthropic activities should be implemented internally within the tourism companies themselves. For employees facing difficult circumstances, single-parent households, or adversity, companies should regularly organize philanthropic activities to support these employees, allowing all employees in the company to participate and foster a sense of solidarity and trust among employees within the same tourism company.

External philanthropic activities demonstrate the compassionate heart towards the community of each tourism company. Therefore, tourism companies can incorporate

philanthropic activities as an essential part of their business operations in local areas. Tourism companies should coordinate with local authorities and relevant agencies to organize philanthropic activities, ensuring that the right beneficiaries are targeted, and the activities are timely in the implementation of the company's philanthropic responsibilities.

Limitations: Although a sample survey of 526 questionnaires was conducted in 62 tourism businesses nationwide, the focus was primarily on Hanoi and Ho Chi Minh City. Therefore, the research sample did not cover all tourism businesses in Vietnam, leading to less comprehensive and objective data. Additionally, the research did not include control variables such as business scale, business type, and age of the enterprise in the model to examine the impact of CSR implementation on employees' trust in the organization in Vietnamese tourism businesses.

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FACTORS IMPACTING SMART TOURISM DEVELOPMENT IN HO CHI MINH CITY

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Abtract: The purpose of this study is to investigate and analyze the key factors that impact the development of smart tourism in Ho Chi Minh City. The study utilizes SPSS version 20 to analyze the proposed hypotheses and the structural model. Primary data is collected through a questionnaire survey conducted from November 2023 to January 2024, involving 416 domestic tourists who visited Ho Chi Minh City. The research findings highlight several significant factors that influence the development of smart tourism in Ho Chi Minh City. These factors may include technology, human capital, innovation, social capital, leadership, infrastructure, collaboration and partnerships. The study provides an in-depth analysis of the relationships between these factors and their impact on the development of smart tourism in the city. This research contributes to the field by providing empirical evidence and valuable insights into the factors that shape smart tourism development in Ho Chi Minh City. It addresses a gap in the existing literature by specifically focusing on the context of Ho Chi Minh City and examining the key factors that affect smart tourism in the city. The findings of this study are expected to enhance the understanding and knowledge of smart tourism development, not only in Ho Chi Minh City but also in similar city tourism destinations.

Keywords: Tourism development; Smart tourism; Ho Chi Minh city.

Tóm tắt: Mục đích của nghiên cứu là điều tra và phân tích các yếu tố ảnh hưởng đến phát triển du lịch thông minh tại Thành phố Hồ Chí Minh. Nghiên cứu sử dụng phần mềm SPSS phiên bản 20 để phân tích các giả thuyết được đề xuất và mô hình cấu trúc. Dữ liệu chính được thu thập thông qua bảng hỏi khảo sát được thực hiện từ tháng 11 năm 2023 đến tháng 01 năm 2024, với sự tham gia của 416 khách du lịch nội địa đến Thành phố Hồ Chí Minh. Kết quả nghiên cứu nêu bật một số yếu tố quan trọng ảnh hưởng đến phát triển du lịch thông minh tại Thành phố Hồ Chí Minh. Các yếu tố này bao gồm: công nghệ, nguồn nhân lực, đổi mới, vốn xã hội, lãnh đạo, cơ sở hạ tầng, hợp tác và quan hệ đối tác. Nghiên cứu phân tích mối quan hệ giữa các yếu tố này và tác động của chúng đến phát triển du lịch thông minh tại thành phố. Nghiên cứu này góp phần vào lĩnh vực này bằng cách cung cấp bằng chứng thực nghiệm và thông tin chi tiết có giá trị về các yếu tố ảnh hưởng đến phát triển du lịch thông minh tại Thành phố Hồ Chí Minh. Nghiên cứu giải quyết lỗ hổng hiện có bằng cách tập trung cụ thể vào bối cảnh của Thành phố Hồ Chí Minh và kiểm tra các yếu tố chính ảnh hưởng đến du lịch thông minh tại thành phố. Kết quả của nghiên cứu sẽ nâng cao hiểu biết và kiến thức về phát triển du lịch thông minh, không chỉ ở Thành phố Hồ Chí Minh mà còn ở các điểm đến du lịch tại các thành phố tương tự.

Từ khóa: Phát triển du lịch; Du lịch thông minh; Thành phố Hồ Chí Minh.

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1. INTRODUCTION

Innovation in the tourism sector is closely related to the use of information and communication technologies (ICT), which have revolutionized the operation of the sector through changes in processes, products, and organization of companies dedicated to the provision of services, as well as in the new demands of visitors (Santos Júnior *et al*., 2017). The era of Information and Communications Technology has also opened a wealth of new tools for the tourism industry (Buhalis & Amaranggana, 2013). Information technologies (ITs) enable travellers to access reliable and accurate information as well as to undertake reservations in a fraction of time, cost and inconvenience required by conventional method (Buhalis, 1998). Many studies emphasize the importance of ICT usage in tourism and technological innovation in tourism companies (Gretzel *et al*., 2015; Santos Júnior *et al*., 2017). From a technological perspective, it is understood that tourism destinations, through both public and private sectors, should invest in ICTs to facilitate management and improve competitiveness (Santos Júnior *et al*., 2017). Both tourism destinations and enterprises need to adopt innovative methods and enhance their competitiveness (Buhalis, 1998). Consequently, the concept of smart tourism destinations has gained significant interest in tourism research (Gelter *et al*., 2020). Smart Tourism Destinations can gain insights into customers' actual needs and preferences (Buhalis & Amaranggana, 2015). Specifically, the increased use of technology in tourism destinations necessitates structural and organizational changes as destinations become more integrated with the global digital ecosystem (Gelter *et al*., 2020). In conclusion, the adoption of new ideas and models for tourism development is crucial for tourism destinations to become smart spaces (Santos Júnior *et al*., 2017).

The Vietnam Tourism Marketing Strategy for 2030, issued by the Ministry of Culture, Sports and Tourism, highlights the importance of innovation and diversification in tourism marketing. It emphasizes the use of digital technology and the application of digital marketing strategies to promote tourism. Consequently, various localities in Vietnam, including Hanoi, Hue, Da Nang, Quang Nam, Khanh Hoa, and Ho Chi Minh City are actively participating in the development of digital and smart tourism. They are investing in digital technologies, implementing digital marketing strategies, and utilizing data analysis and evaluation to enhance their tourism promotion efforts. These initiatives aim to attract more tourists, provide innovative experiences, and strengthen the competitiveness of Vietnamese tourism in the global market. This paper aims to analyze the key factors influencing the development of smart tourism in Ho Chi Minh City and propose a framework for the strategic utilization of technology in tourism. This framework will provide valuable insights and recommendations for policymakers, tourism stakeholders, and other destinations aiming to leverage technology to enhance their tourism offerings and attract visitors in the competitive global market.

2. LITERATURE REVIEW

2.1. Smart Tourism

Smart tourism aims to enhance infrastructure and information and communication capabilities in the tourism industry, with the primary objectives of improving management and governance, providing better services, and offering a wider range of experiences to tourists (Widodo & Rahman, 2021). This approach acknowledges that smart tourism is characterized as a type of tourism that necessitates the integration of multiple factors and components includes the physical infrastructure, social connections, resources provided by the State or organizations, the human mind, and environmental awareness (Ödemiş, 2022). Smart tourism is a novel concept that refers to the reliance of tourism destinations, businesses, and tourists on big data and information and communication technology (ICT)-based tools (Li *et al*., 2017). Topsakal *et al.,* (2020) claimed that the concept of smart tourism has emerged with the application of new generation technologies to the tourism industry. Smart Tourism Destinations are a component of Smart Tourism related to Tourism Destinations that have utilized Information and Communication Technology (ICT) in tourism services (Sucipta *et al.*, 2019). Smart tourism describes the current stage of tourism development influenced by the evolution of information technologies (Gajdošík, 2018). The concept of smart tourism was launched, which was considered a continuation of the smart city model in order to include some issues that are directly related to it, such as the elements of quality of life and sustainability at all levels of the tourism process, starting from the application of the elements of intelligence on the consumer / tourist to the introduction of these elements into the economic structures supporting the sector tourist, and to the tourist destination in the spatial field (Allawi, 2022). Based on these considerations, smart tourism is defined as tourism supported by integrated efforts at a destination to collect and aggregate/harness data derived from physical infrastructure, social connections, government/organizational sources, and human bodies/minds. This data is combined with the use of advanced technologies to transform it into on-site experiences and business value-propositions with a clear focus on efficiency, sustainability, and experience enrichment (Gretzel *et al.*, 2015). Smart tourism provides facilities and services that make it easier for tourists to access information, conduct transactions, and maximize their experiences while visiting tourist attractions (Novianti *et al.*, 2022). The application of the smart tourism concept in a destination can strengthen its competitive position and lead to better satisfaction of tourists' needs (Gajdošík, 2018).

2.2. Smart Tourism Destination

According to the European Capital of Smart tourism Initiative in 2019, a smart tourism destination is a destination facilitating access to tourism and hospitality products, services, spaces, and experiences through ICT-based tools. It emphasizes the importance of a healthy social and cultural environment, which can be achieved by focusing on the

city's social and human capital. It also implements innovative, intelligent solutions and fosters the development of entrepreneurial businesses and their interconnectedness. A smart tourism destination is defined as an innovative tourist destination that relies on an infrastructure of state-of-the-art technology, which guarantees the sustainable development of universally accessible tourist areas, enabling visitors to integrate and interact with their surroundings, raising the quality of their experience at the destination, and improving residents' quality of life (SEGITTUR, 2022). However, scholars such as Baggio *et al*., (2020), Liberato *et al.*, (2018), Matyusupov *et al.*, (2024), Ndou *et al*., (2023), and Savić & Pavlović, (2018) have come up with other definitions.

The concept of smart destinations is derived from the smart city concept and is still in development (Savić & Pavlović, 2018). The development of smart cities has also been considered a foundation for the formation of smart tourism destinations (Gelter *et al.*, 2020). Smart tourism phenomena is a new approach utilizing an innovation with the advance of Information and Communication Technology (ICTs) over the tourism destination, travelers, and tourism business (Suanpang *et al.*, 2021; Tyan *et al.*, 2020). Smart tourism destinations (STDs) are the result of adopting advanced technologies in the tourism industry (Ndou *et al*., 2023). A smart tourism destination should encompass technological development and innovation activities, incorporating digital spaces, information processing, and tools that facilitate the transfer of technology and sharing of knowledge (Liberato *et al*., 2018). The integration of information and communication technologies (ICT) into the physical tourism infrastructure is considered a key aspect of smart tourism destinations (STDs) (Cornejo Ortega *et al.*, 2020). Smart tourism destinations are specific destinations that have adopted smart tourism technologies to enhance their sustainability and competitiveness (Matyusupov *et al.*, 2024). However, the concept of 'smart,' particularly regarding tourism destinations, still lacks conceptual clarity, and there is a need to define and understand the elements that comprise smart tourism destinations (Gelter *et al.*, 2020). Smart tourism destinations can be viewed as a specific type of smart cities (Buhalis & Amaranggana, 2015) that utilize smart city components to meet the needs of both residents and tourists (Shafiee *et al.*, 2021). Zhu *et al.* (2014) argued that the development of smart tourism destinations offers significant benefits to the tourism industry by providing convenient access to information for both tourism organizations and tourists through integrated and centralised data platform. By utilizing such a platform, tourism organizations and tourists can easily access relevant information, which can enhance decision-making processes and improve the overall tourism experience. The concept of a Smart Tourism Destination is the result of the convergence of two trends: the widespread adoption of e-Tourism and the opportunities presented by the smart city paradigm (Baggio *et al.*, 2020). Each city is subdivided into the six fundamental components identified by Boes *et al.* (2016), Bottero *et al.* (2014), Giffinger *et al*. (2007), and Shum & Watanabe (2017), which include Smart

Economy, Smart Governance, Smart People, Smart Mobility, Smart Living, and Smart Environment. According to Sucipta et al., (2019), Smart Tourism Destinations are Tourism Destinations that have 6 digital components (digital attractions, digital accessibility, digital facilities, digital tour packages, digital tourism activities and digital support services). Moreover, cities should base their Smart City models on three main pillars: infrastructure, human capital, and information (Bottero et al., 2014). Therefore, the development of a smart tourism destination takes advantage of innovations established in the context of the Smart City (Boes et al., 2016). Smart tourism is an important mode for promoting the high-quality development of tourism cities, which consider not only residents but also tourists in their efforts to support sustainability and quality of life/visits (Ji & Yin, 2022).

In summary, the term smart tourism destination implies an innovative tourism destination built on advanced technology and committed to ensuring sustainable development of tourist areas accessible to everyone can facilitate visitor engagement and integration with the environment, enhance the quality of tourists' experiences at the destination, and improve the quality of life for inhabitants (Savić & Pavlović, 2018; Shafiee et al., 2022). Smart tourism destinations leverage available technological tools and techniques to enable the co-creation of value, pleasure, and experiences for tourists, as well as generating wealth, profit, and benefits for organizations and the destination as a whole (Boes et al., 2015). These destinations are built upon advanced technology and sustainable principles, providing transparent partnership opportunities to the tourism industry. Through these partnerships, innovation, creativity, and learning are promoted, ensuring efficient utilization of tourism resources for the benefit of tourists and residents (Gelter et al., 2020). In other words, smart tourism destinations are cities or places that use available technology, innovations, and techniques to create enjoyable experiences for tourists and generate profits for organizations and the destination (Jasrotia & Gangotia, 2018).

2.3. Factors impacting the development of smart tourism destinations

According to Savić & Pavlović (2018), smart tourism destinations are considered a special form of smart cities as they adhere to the same principles and infrastructure. Consequently, the foundational components that contribute to the development of smart cities are also applicable to the development of smart tourism destinations within the context of smart tourism. The objective of smart tourism is to provide tourists with convenient services and engaging experiences throughout their visit (Novianti et al., 2022). Additionally, it aims to enhance the competitiveness of tourism firms and destinations (Aktaş & Kurgun, 2019). Savić & Pavlović (2018) explore technology, human capital, and innovation as fundamental constructs in the development of smart tourism. Similarly, Boes et al. (2016) highlight innovation, social capital, human capital, and leadership as crucial components of smart tourism destinations, as their

combination can enhance the competitiveness of these destinations. Matyusupov *et al.* (2024) recognize smart tourism technologies as key factors for the development and growth of the tourism industry, and they identify collaboration and partnerships, vision and leadership as key success factors. Trần *et al.* (2017) examine the main components of smart tourism destinations, including investments in human and social capital, traditional transport, and modern ICT communication infrastructure. These components aim to meet the diverse needs of visitors in areas such as social, cultural, economic, leisure, and personal aspects. Therefore, it is important to discuss the role of this information and infrastructure in connection with innovation, social and human capital, and leadership, rather than considering them separately (Boes *et al.*, 2016). In conclusion, the development of smart tourism destinations is influenced by multiple factors, including technology, human capital, innovation, social capital, leadership, infrastructure, collaboration and partnerships. These factors interact and contribute to the overall "smartness" of a destination. The following sections will provide a detailed exploration of these identified components based on a case study of Ho Chi Minh City. The several research hypotheses can be formulated:

H_1: Human capital has a positive effect on smart tourism destination development.

H_2: Social capital has a positive effect on smart tourism destination development.

H_3: Innovation has a positive effect on smart tourism destination development.

H_4: Technology has a positive effect on smart tourism destination development.

H_5: Infrastructure has a positive effect on smart tourism destination development.

H_6: Leadership has a positive effect on smart tourism destination development.

H_7: Collaboration and partnerships have a positive effect on smart tourism destination development

3. RESEARCH METHODOLOGY

3.1. Study area

According to World Bank in 2021, Ho Chi Minh City has been a pioneer in digital transformation in Vietnam. The city issued Decision 6179 in 2017, adopting a Smart City Initiative. The objective of this initiative is to leverage digital technologies for improved information sharing, evidence-based policy making, data-driven urban management, and enhanced e-services for businesses and citizens. The implementation roadmap is divided into three phases. The first phase, from 2017 to 2018, aims to establish shared data and technology platforms as the foundation for a smart city. The second phase, from 2019 to 2020, focuses on implementing smart city solutions that address the pressing needs of the city, using the common technology platform. The third phase, from 2020 to 2025, aims to further expand the application of ICT solutions and invest in data infrastructure

across various areas of the city's urban development. The Department of Information and Communication, as a standing agency, will be responsible for implementing the Smart City Initiative. According to the Tourism Development Strategy of Ho Chi Minh City for the period until 2030, as outlined by the People's Committee of Ho Chi Minh City in 2018, the city placed a significant emphasis on the application of information technology in destination management, tourism promotion, and state management. The overarching objective was to enhance the city's tourism brand recognition, improve destination quality, increase visitor satisfaction, generate positive economic and social impacts, and mitigate negative environmental impacts.

The General Statistics Office of Vietnam (GSO) released its fourth-quarter and 2023 socioeconomic report, revealing a remarkable 6.82% increase in the value added by the service sector. This impressive growth translated to a significant contribution of 42.54% to the country's gross domestic product (GDP). The report highlights the pivotal role of trade and tourism within the service sector, suggesting they were major drivers of Vietnam's robust economic performance in 2023. Recognizing this potential, the Ho Chi Minh City Department of Tourism has proactively innovated and utilized social media platforms (such as Facebook, TikTok, Instagram, and YouTube) to promote tourism activities. The Ho Chi Minh City tourism sector sets the target of welcoming six million international travelers, generating a total revenue of VND190 trillion (nearly US$8 billion) from tourists in 2024. Understanding the factors that impact smart tourism development will enable the city to effectively leverage technology and innovation to enhance the tourism experience, attract more visitors, and increase revenue. This research will help identify strategies and initiatives to promote smart tourism, optimize the use of digital platforms, and improve destination management. By focusing on factors such as technology, human capital, innovation, social capital, leadership, infrastructure, collaboration and partnerships, Ho Chi Minh City can work towards achieving its tourism targets and sustaining its economic growth in the future.

3.2. Variable measurement

This study has developed measurement scales for assessing the smart tourism development in Ho Chi Minh City. The scales for Human Capital (3 items) were adapted from Santos-Júnior *et al.* (2020), Savić & Pavlović (2018), and Sucipta *et al.* (2019). The scales for Social Capital (3 items) were adapted from Santos-Júnior *et al.* (2020). The scales for Innovation (4 items) were adapted from Allawi (2022), Savić & Pavlović (2018), Sucipta *et al.* (2019), and Wang *et al.* (2020). The scales for Technology (3 items) were adapted from Allawi (2022) and Savić & Pavlović (2018). The scales for Infrastructure (3 items) were adapted from Lasisi *et al.* (2023) and Ndou *et al.* (2023). The scales for Leadership (3 items) were adapted from Allawi (2022), Cornejo Ortega *et al.* (2020), and Du (2019). The scales for Collaboration and Partnerships (3 items) were

adapted from Gomis-López & González-Reverté (2020) and Mandić & Kennell (2021). The scales for Smart Tourism Destination Development (3 items) were adapted from Allawi (2022) and Hateftabar (2020). The questionnaire was designed in Vietnamese language to accommodate the Vietnamese tourists who visited Ho Chi Minh City. All items were measured using a 5-point Likert scale, with respondents asked to indicate their level of agreement, ranging from 1 = strongly disagree to 5 = strongly agree. To ensure reliability and validity, all questions were tested. The data analysis for this study was conducted using SPSS version 20.

Currently, according to many researchers, a larger sample size is considered better (Hair *et al.*, 1995; Nguyen Dinh Tho, 2012). To achieve optimal results in regression analysis, it is recommended that the sample size satisfies the sample calculation formula: $n \geq 50 + 8p$. Where n is the minimum sample size and p is the number of independent variables in the model. In the proposed model by the author, there are $p = 7$ independent variables equivalent to 22 observed variables. According to the formula $n \geq 50 + 8p$, we can calculate that $n \geq 50 + 8 \times 7 = 106$. This is the minimum sample size. Since EFA (Exploratory Factor Analysis) always requires a much larger sample size compared to regression analysis, we choose a sample size larger than the minimum, $n = 106$. A larger sample size reduces statistical errors and accounts for excluding invalid responses. Therefore, the authors decide to select an initial sample size of 450 survey subjects. Thus, the collected data ensures the successful implementation of the research model. A 5-point Likert scale is used to measure the research concepts in the factor analysis model, ranging from 1 to 5 (with 1: Completely disagree to 5: Completely agree)

4. RESEARCH RESULTS AND DISCUSSION

The authors randomly distributed 450 questionnaires to travelers visiting Ho Chi Minh City. They then collected responses directly through questionnaires from 430 subjects (with the number of questions distributed according to Table 2). After conducting interviews, only 416 valid answer sheets remained, resulting in an actual sample size of $n = 416$ for this study. The results of the study indicate that most of the observed variables in the scale have an alpha coefficient greater than 0.8 and a total variable correlation coefficient greater than 0.3. These variables will be retained for further research (Nguyen Dinh Tho & Nguyen Thi Mai Trang, 2007) (see Table 1)

Table 1. Summary of Results

	Component							Cronbach Alpha	KMO
	INN	**TEC**	**SOC**	**LEA**	**HUC**	**INF**	**COP**		
INN3	.887								
INN2	.882							.897	
INN1	.872								
INN4	.792								
TEC1		.859							
TEC3		.855						.899	
TEC2		.815							
SOC3			.880						
SOC2			.867					.896	
SOC1			.859						
LEA3				.867					.859
LEA1				.852				.895	
LEA2				.838					
HUC1					.849				
HUC3					.822			.863	
HUC2					.816				
INF1						.828			
INF2						.827		.871	
INF3						.785			
COP2							.818		
COP3							.818	.836	
COP1							.780		
STD3	.899								
STD2	.895							.853	.716
STD1	.841								
	INN	TEC	SOC	LEA	HUC	INF	COP	STD	Sig
Initial Eigenvalues	80.404							77.238	.000
Cumulative %	1.107							2.317	

Source: *authors, 2023*

The Cronbach's Alpha coefficients for all independent and dependent variables are greater than 0.8. This indicates that the scale is reliable and can be used to measure the variables in the research model. The results of the exploratory factor analysis (EFA) show that the Kaiser-Meyer-Olkin (KMO) coefficients for both independent and dependent variable groups meet the condition of $0.5 < KMO < 1$, with a significance level of Sig. = 0.000 in the Bartlett's test (Sig < 0.05). The extraction of factors stops at Eigenvalues > 1, and the total variance extracted for both independent and dependent variables is greater than 50%. All observed variables have factor loadings > 0.5, indicating that the factor analysis results are appropriate, and the variables are correlated with each other in the

overall dataset. The number of extracted factors is completely suitable. The theoretical model comprises seven independent variables that influence the development of smart tourism destinations in Ho Chi Minh City. Subsequently, the study conducted correlation analysis and multiple regression analysis. The study performed multiple regression analysis for each research model. The study used the enter method for multiple regression analysis, which means all predictor variables were entered simultaneously. The results indicate that the significance level of all variables is statistically significant, as they have significance levels smaller than 0.05. This means that all these variables have an impact on the development of smart tourism destinations in Ho Chi Minh City. Furthermore, it is observed that the variance inflation factor (VIF) values are all less than 2, indicating that there is no issue of multicollinearity (Hoang Trong & Chu Nguyen Mong Ngoc, 2008).

Table 2. Model result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.690	.167		4.137	.000		
	HUC	.127	.035	.153	3.637	.000	.676	1.478
	SOC	.167	.027	.248	6.234	.000	.761	1.314
	INN	.096	.027	.134	3.599	.000	.872	1.147
	TEC	.073	.029	.108	2.502	.013	.641	1.561
	INF	.108	.035	.137	3.113	.002	.621	1.610
	LEA	.135	.034	.169	4.040	.000	.688	1.454
	COP	.130	.036	.153	3.565	.000	.654	1.530
a. Dependent Variable: STD								

Source: *authors, 2023*

The unstandardized regression equation predicting the smart tourism destination development in Ho Chi Minh City based on all independent variables is as follows:

STD = -0,690 + 0,167 (SOC) + 0,135 (LEA) + 0,130 (COP) + 0,127 (HUC) + 0.108 (INF) + 0.096 (INN) + 0,073 (TEC)

From the results of the regression equation, it is evident that all independent variables, namely technology, human capital, innovation, social capital, leadership, infrastructure, collaboration and partnerships, exhibit a positive impact on the development of smart tourism destinations in Ho Chi Minh City. This implies that enhancing the assessment level of these factors will contribute to the growth and advancement of smart tourism destinations in Ho Chi Minh City. The research results are consistent with the studies conducted by Boes *et al.* (2016), Matyusupov *et al.* (2024), Savić & Pavlović (2018), Trần *et al.* (2017). From the analysis results, we can observe that all independent factors have an impact on the development of smart tourism destinations in Ho Chi Minh City.

The Durbin-Watson test is used to examine the serial correlation in the measurement error. When the Durbin-Watson statistic is close to 2, it indicates that the residuals are not serially correlated. In the Durbin-Watson test result of 1.966, it shows that there is no correlation among the residuals. This implies that the regression model does not violate the assumption of independence of errors. To evaluate the adequacy of the regression model, two coefficients are utilized: the adjusted coefficient of determination (R^2) and the F-test. Based on the goodness-of-fit test results (Table 4), we observe that the F-value is 60,548 with a very small significance level of 0.000, which is less than 0.05. Therefore, the null hypothesis (H_0) is rejected with a 95% confidence level. In other words, the model is deemed suitable for the data, and the independent variables in the model can explain the variation in the dependent variable.

Table 4. Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	F	Sig.
1	.714[a]	.510	.501	.44232	1.966	60.548	.000
a. Predictors: (Constant), COP, INN, HUC, SOC, LEA, TEC, INF							
b. Dependent Variable: STD							

Source: *authors, 2023*

According to Table 4, the adjusted R^2 coefficient is 0,501. The adjusted R^2 coefficient is smaller than R^2, so using the adjusted R^2 coefficient to evaluate the model's fit is safer because it does not inflate the level of model fit. This demonstrates that the regression model is appropriate for explaining the impact of the mentioned factors on the smart tourism destinations in Ho Chi Minh City. The significance of the adjusted R^2 coefficient is that 50,1% of the variation in the development of smart tourism destinations in Ho Chi Minh City, influenced by the seven independent variables included in the model, is explained.

Similar to Savić & Pavlović (2018) and Boes *et al.* (2016), this study confirms the importance of technology, human capital, and innovation for smart tourism development. However, this research in the context of Ho Chi Minh City adds to this understanding by emphasizing the critical role of collaboration and partnerships. This finding could be attributed to the city's rapidly developing tourism industry, where stakeholder collaboration can be crucial for effective resource allocation and infrastructure development. Additionally, while Trần *et al.* (2017) emphasize traditional infrastructure such as transportation, this study demonstrates the greater importance of modern ICT infrastructure in a city like Ho Chi Minh City. Therefore, this comprehensive framework provides a deeper understanding of smart tourism development in Ho Chi Minh City compared to previous studies focusing on different contexts.

5. CONCLUSION

This study aims to test a theoretical model that explains the correlation between technology, human capital, innovation, social capital, leadership, infrastructure, collaboration and partnerships, and the development of smart tourism destinations in Ho Chi Minh City. The study has achieved its objective of assessing the current situation of the development of smart tourism destinations in Ho Chi Minh City. Additionally, the study has developed a research model consisting of seven factors equivalent to 22 observed variables that impact the development of smart tourism destinations in Ho Chi Minh City.

One limitation of this study is that it did not survey international tourists. Therefore, the authors recognize the need for research and evaluation of the development of smart tourism destinations in Ho Chi Minh City based on the perspectives of international tourists. Additionally, there are many other factors that influence the development of smart tourism destinations in Ho Chi Minh City, so it is necessary to supplement with additional factors to further investigate and understand the development of smart tourism destinations in Ho Chi Minh City.

Furthermore, the study's sample population is not representative and comprehensive. Due to the random sampling and relatively small sample size, it is not possible to evaluate or represent the characteristics of the development of smart tourism destinations in Ho Chi Minh City. The qualitative survey participants also have a subjective nature since they only assess and provide feedback through domestic tourists in Ho Chi Minh City. Therefore, additional sampling methods and survey techniques are needed to ensure more objectivity. It is also important to extend the research beyond Ho Chi Minh City and include similar city tourism destinations to provide a broader understanding of smart tourism development.

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HOW TO PROMOTE DARK TOURISM AMONG GEN Z TRAVELLERS: A PSYCHOLOGICAL PERSPECTIVE

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Abstract: *This research, attempts to analyze and evaluate how Gen Z's intention to visit dark tourism places is influenced by their intrinsic motivation and their views as shaped by both controlled and uncontrolled marketing communications. First, this paper provides insights into how destination images and emotional solidarity, through the mediation of controlled and uncontrolled communication sources, influence potential visitors' intention to visit dark tourism locations for the first time. In this way, we could combine and contrast how attitudes, motives, and perceptions influence behavioral intentions in the literature on tourism marketing. Therefore, our estimation results demonstrate that Gen Z's intention to visit the dark tourism site is significantly positively impacted by planned destination marketing about the site as well as two types of motivation, namely dark experience and casual interest. Furthermore, the mediating function of cognitive and affective destination pictures may help to explain the influences of PR, advertising, and social media marketing on visiting intention. The conceptual model was tested using quantitative data collected from 401 Gen Z domestic travelers who have not yet visited Hoa Lo Prison but have been exposed to various communication sources about the site.*

Keywords: *Dark tourism, gen Z, visiting intention, controlled communications, EWOM, destination image.*

Tóm tắt: *Nghiên cứu này nhằm kiểm tra và đo lường sự ảnh hưởng của động lực đến từ bên trong và nhận thức được tạo bởi truyền thông tiếp thị có kiểm soát, không có kiểm soát đến ý định đến thăm các địa điểm du lịch tưởng niệm (du lịch đen tối) của Gen Z. Nghiên cứu giải thích về cách các hình ảnh của điểm đến và tình đoàn kết về cảm xúc thông qua sự điều tiết trung gian của các yếu tố truyền thông có kiểm soát và không có kiểm soát, ảnh hưởng đến ý định lần đầu đến thăm các địa điểm du lịch tối của du khách tiềm năng. Theo đó, vai trò của thái độ, động cơ và nhận thức trong việc thúc đẩy ý định hành vi cũng được nghiên cứu. Kết quả nghiên cứu chứng minh rằng ý định đến thăm địa điểm du lịch đen tối của thế hệ Z bị tác động đáng kể bởi hoạt động truyền thông có kiểm soát và hai loại động lực, đó là trải nghiệm đen tối và sở thích thông thường. Hơn nữa, chức năng trung gian của nhận thức về hình ảnh điểm đến và hình ảnh cảm xúc về điểm đến có thể giúp minh chứng rõ hơn những ảnh hưởng của PR, quảng cáo và tiếp thị truyền thông xã hội đến ý định thăm quan.*

Từ khóa: *Du lịch tưởng niệm, gen Z, ý định du lịch, truyền thông Marketing, truyền thông truyền miệng, hình ảnh điểm đến.*

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1. INTRODUCTION

Dark tourism is the act of traveling to places that are related to tragedy, death, or suffering (Foley and Lennon, 1996). This comprises areas with a macabre or depressing past, such as battlefields, concentration camps, catastrophe zones, and other locations. From a marketing perspective, Gen Z can be a potential market for this unique type of tourism. Gen Z is a generation that deeply cares for others, strives for a diverse society and is highly collaborative and social (Roberta Katz, 2017). Dark tourism which is associated with tragic stories, hence, may entail some connections with Gen Z travellers. In the future, Gen Z will be the next generation to take charge of many organizational entities. When they are aware of the principles and values instilled from now, in the future, as they reach the age to hold key positions, there will be ample opportunities to promote and expand this type of tourism further. Therefore, the research team aims to focus on Gen Z, the next generation set to lead the world and serve as the primary agents capable of bringing about significant societal changes. This generation is also known for being adaptable and open to embracing new ideas, making them more accessible for targeted engagement. Moreover, from a social perspective, attracting Gen Z to visit dark tourism sites is also an important policy due to its benefits for both Gen Z and society. Specifically, dark tourism can be employed for educational purposes so that younger generations can raise their awareness and encouragement about the past. It helps Gen Z to comprehend the society they are living within by bringing attention to horrible historical events. On the other hand, dark tourism might help tourists learn about the culture (Jamin et al., 2020). As a result, the history and culture of their nations will be preserved and sustained with high educational values while profit from dark tourism activities can be beneficial for the local community's economy. Promoting dark tourism among Gen Z travellers is, hence, a win-win strategy for dark tourism's site managers, society, and Gen Z themselves.

This study employs fundamental psychological perspectives to examine Gen Z's intention to visit dark tourism sites. According to Kotler (2000), customer behaviour is driven by three key psychological factors including motivation, perception, and attitudes. Perception is a process of selecting, organizing, and interpreting information to form a meaningful picture of the world (Kotler and Armstrong, 2012). This is also known as the learning process which directly shapes customers' beliefs and hence, links to consumer behaviour (McNeal, 2007). In addition, motivation is the result of a person's attempt at fulfilling basic human needs such as physiological, safety, social, self-esteem and self-actualization (Maslow, 1943). A strong enough motive would then drive human behaviour (Mcneal, 2007). According to the theory of planned behaviours, attitude is one of three factors that affect intention which influences individuals' behaviour (Ajzen, 1991). An attitude towards a product, a service, or a brand encompasses both cognitive and affective aspects and plays a role in driving behavioural intentions (Lewis

et al., 2022). The connections between perception, motivation, and attitudes in forming customer behaviour could be tracked through the AIDA (Attention, Interest, Desire and Action) model. This framework reflects the sequence of cognitive and affective stages that consumers follow to make purchase decisions (Lewis, 1897). Specifically, customers should be first attracted and awarded to form perceptions towards the object. This is followed by the formation of attitudes (interest). The combination of those attitudes and customers' existing motivations would drive desire which may be embedded into the purchase intention and finally, actual behaviour (Action).

The formation of perception through either planned communications or unplanned communications and behavioural intentions to historical tourism sites has been examined in several works (Mehmood et al., 2018; Arasli et al., 2021). On the one hand, formal and intended communication activities through forms of promotional mixes such as advertising, public relations, and physical place communication are found to form brand image and hence attract both tourists and residents to the tourism sites (Braun et al., 2014). On the other hand, e-word-of-mouth (EWOM) has been shown in recent research to have positive and significant influences on either attitude toward the destination or visit intention (Rizky et al., 2017; Abubakar et al., 2017). Despite that both planned and unplanned communications (EWOM) may co-exist to shape customer perceptions towards the tourism sites before they visit, previous authors have also only addressed one of the two aspects: communication activities from the destination marketing organizations or EWOM while there is a lack of research which comprehensively examine and compare both of the two information sources in forming perception, attitudes, and visiting intention (Fakharyan et al., 2012; Braun et al., 2014). Recent research indicates that the intention to travel is shaped by one's attitude toward the destination (Ramdan et al., 2017; Lee, 2009; Kim and Kwon, 2018). The tourist's attitude serves as a crucial factor and a reliable predictor in influencing the decision-making process regarding a particular tourist destination (Reza Jalilvand and Samiei, 2012). Meanwhile, some researchers have a specific look into the effects of distinct motivation on dark tourism behavioural intentions (Lewis et al., 2022). Although perceptions, motivations, and attitudes together take key roles in driving the intention to visit, there is no study which incorporates and compares their influences in driving visiting intention, especially in the dark tourism field.

This study will respond to the above research gaps by linking perceptions, motivations, and attitudes to Gen Z's intention to visit dark tourism sites. Hoa Lo Prison Relic is taken as the research context. Specifically, we examine how planned communications (advertising, public relations, and social media marketing) and EWOM together affect visiting intention through the formation of attitudes towards the dark tourism site in terms of cognitive destination image, affective destination image and emotional solidary. Within the common conceptual model, we also explore distinct motivations to visit dark

tourism sites among Gen Z (dark experience, engaging entertainment, and casual interest) through in-depth interviews with 20 GenZ travellers and examine how they influence their intention to visit. Quantitative survey data collected from 401 Gen Zers in Hanoi city are employed to test relevant hypotheses and compare the magnitude of effect among factors in the model.

2. HYPOTHESIS DEVELOPMENT

2.1. Dark tourism with a psychological perspective

Human beings often seek various forms of tourism for relaxation, enjoyment of natural beauty, and emotional satisfaction through entertainment activities. However, tourists sometimes desire to experience destinations with iconic significance, associated with memories, famous historical events, and tragedies. In recent years, the trend of "dark tourism" has been gaining popularity both domestically and internationally due to its significant potential.

"Dark tourism" known by different names such as "thana tourism," "black tourism," or "grief tourism," involves visiting places associated with historically significant dark events, often related to human tragedies such as nuclear disasters, earthquakes, tsunamis, or man-made atrocities like genocides, assassinations, prisons, and war sites. According to The Washington Post, quoting Professor J. John Lennon, a tourism specialist at Glasgow Caledonian University in Scotland, the concept of "dark tourism" is not a new phenomenon but can be traced back to the 16th century. In recent years, it has gained more popularity, partly due to widely released documentary films, which have piqued interest and encouraged tourists to seek out these sites of grief and tragedy.

Memorial tourism destinations are evolving, becoming more accessible to a diverse range of visitors, from the elderly to those who have experienced "dark" events, to younger customer segments. In Vietnam, a country with a rich history of anti-colonial struggle, numerous "dark tourism" destinations still exist and are effectively operated. When coming to these places, you will experience a part of dark history, with many traces of a painful past. Like Philip Stone once said: "When you walk around these places, what you see and feel are not strange people from a distant past but yourself. Because you will put yourself in that situation and ask yourself what you would do in similar situations." "Dark tourism" has been the subject of numerous scientific research studies exploring various aspects of this phenomenon. Scholars have investigated the motivations of tourists who engage in dark tourism, the ethical considerations surrounding such visits (Lewis et al., 2022*)*, the impact on local communities (Buye & Ronald, 2019) and the interpretation of dark sites for educational purposes. (Israfilova, & Khoo-Lattimore, 2019).

Based on that, this study aims to clarify the motivations of tourists that will affect their intention to go to dark places. Understanding the theory of planned behaviors, this

research will investigate whether the travelers had a deep connection to the deceased they were going to visit, which might be classified as them wanting a gloomy experience, whether they were mourners, pilgrims, or the morbidly curious thrill seekers through the controlled marketing or not. The aim is also to find out that visitors have a change in emotion and cognition, explore how strongly people feel about dark places, and tourists' desire to connect with the dark places after being exposed with the communication activities. The research will explore the entertainment values of tourists, the values that affect tourists' intention to visit as these tourists visited either because of their general interests in the area or to escape from stresses of everyday life (Raine, 2013), Besides, it can imply to the intention to visit of travelers.

2.2. Planned communications, perceived destination images, and intention to visit

In this research, planned communication is conceptualized as a three-dimensional construct that balances the following traditional and online media elements, including advertising, sponsorship-public relations, and social media (Dwivedi and McDonald, 2018). These dimensions have been studied individually through customer assessments of brand communication attributes in previous research, i.e.: for advertising (Zehir et al., 2011), sponsorship-public relations (Kulkami, 2022), for social media activities (Voorveld, 2019). First, advertising is of particular interest in marketing and consumer behaviour (Buil et al., 2013; Kwon et al., 2020; Zhao et al., 2022). Advertising is a powerful tool for communicating a brand's functional and emotional value, so it must be appropriately designed and executed to contribute to the creation of a strong brand (Aaker, 1997). The main goals of advertising are to: (1) generate advertising awareness among the target audience; (2) generate awareness of the destination as a place to visit, i.e., get it on the shopping list of acceptable destinations; (3) create a positive image of the destination versus competition; (4) motivate consumers to travel to that destination in the near future; and (5) influence travel behaviour, by converting those motivated by advertising to visit the destination (Siegel and Ziff-Levine, 1990). Second, public relations are defined as activities that project a good image of a company to different stakeholders (Salmon et al., 2019). In this regard, the message from public relations activities may also raise awareness about the destination in some points but more importantly form favourable affective images of the destinations in various stakeholders' minds. Third, social media channels offer both firms and customers new ways of engaging with each other. Companies hope to engage with loyal consumers and influence individuals' perceptions about their products, spread information and learn from and about their audience (Brodie et al., 2013). Among sources of communication, social media have been established as a mass phenomenon with a wide demographic appeal (Kaplan and Haenlein, 2010). Social media have changed the way brand content is created, distributed, and consumed, transferring the power to shape

brand images from marketers to consumers' online connections and content (Tsai and Men, 2013). Social media activities that encourage entertainment, interaction, trendiness, and customization can go beyond a channel for information sharing to form a favourable brand image (Godey et al., 2016; Tarkang et al., 2020).

Destination images are internalized beliefs, ideas, impressions, or feelings that individuals have about a destination (Gallarza et al., 2002). Cognitive destination images represent individuals' knowledge or beliefs about destination attributes (e.g., good tourist facilities) and affective destination images pertain to their impressions or feelings (e.g., lively or relaxing) regarding the destination (Beerli and Martin, 2004). Traditional and social media communication have an important influence on brand image (Mad- havaram et al., 2005). Destination image is derived from a perception that is influenced by brand communication, a common marketing goal is to develop brand communication strategies that convey a well-coordinated brand image which is crucial for a company's success. How brand values are communicated directly affects brand image (Chang & Liu, 2009). The influences of brand communication in shaping brand image have been affirmed in the literature. Romaniuk and Sharp (2003) point out that brand image could come from a variety of sources, including consumer experience, marketing communications, and/or word of mouth. Advertising could affect brand image by generating value for brands (Buil et al., 2013). Public relations can also enhance brand image effectively (Madhavaram et al., 2005; Salmon et al., 2019), hence, the outputs or effectiveness of public relations are often measured by brand image (Cornwell & Kwon, 2020). Based on data from a nationwide survey of Dutch place marketing, Braun et al. (2014) found the impacts of advertising, public relations, and physical place communication on visiting intention among both tourists and residents. However, these researchers did not examine the association through the mediation of perceived destination images.

In this study, we hypothesize that:

H1. *Cognitive image mediates the impacts of controlled communication (advertising, PR, social media) on intention to visit*

H2. *Affective image mediates the impacts of controlled communication (advertising, PR, social media) on intention to visit*

2.3. Uncontrolled communication (EWOM), perceived images, and intention to visit

Electronic word of mouth (EWOM), an online form of word of mouth, has been considered a crucial source for consumers to get authentic product-related information (Cheung and Thadani, 2012; Ismagilova et al., 2017). There are two types of EWOM, commercial and user-generated content (UGC). In the case of commercial EWOM, people share information via commercial channels such as commercial trip advisors and company

websites. However, in the case of UGC, personal and UGC channels are used by individuals to share information. This kind of content can be accessed by consumers without any time and place restrictions which makes EWOM communication more accessible than traditional WOM (Ismagilova et al., 2017; King et al., 2014). Rich literature also finds that consumers perceive EWOM messages as more valuable and reliable than commercial advertising (Pihlaja et al., 2017). Despite that EWOM is mostly unplanned and uncontrollable, most companies try to gain favourable EWOM due to its importance to consumers' decision-making and critical impacts on the firms' performance (Babic Rosario et al., 2016). Either traditional WOM or EWOM has been recognized as the most prominent and influential sources of information that can influence customer attitudes, behavioural intentions (Xia et al., 2008), and destination image (Hanlan et al., 2005).

H3. Cognitive image mediates the impacts of uncontrolled communication (EWOM) on intention to visit

H4. Affective image mediates the impacts of uncontrolled communication (EWOM) on intention to visit

2.4. Uncontrolled communication (EWOM), emotional solidarity, and intention to visit

The notion of emotional solidarity originated from Emile Durkheim's classic work, The Elementary Forms of Religious Life (2008), which described the structure of social mechanisms. In this book, he conceived of emotional solidarity as an emotional bond between individuals who have similar beliefs and engage in the same activities. Emotional solidarity refers to affective bonds that individuals may develop as they interact with others holding similar beliefs and behaviors (Woosnam et al., 2009). Some examples of emotional solidarity include fellowship between individuals attending the same religious or sporting events. Emotional solidarity can develop from various in-group relationships, such as between prison inmates (Street, 1965), family members (Harwood, 2000), or terrorism victims (Collins, 2004). Concerning tourism, tourist-to-tourist emotional solidarity can be especially salient among special interest tourists visiting specific, enclosed destinations or attractions, such as heritage tourists (Joo et al., 2020), cruise tourists (Papathanassis, 2012), religious tourists (Kaell, 2014), or sport tourists (Joo et al., 2023). These people tend to share beliefs and behaviors, and their in-group interaction is likely to entail emotional closeness or a sense of togetherness (Joo et al., 2023).

As "the dynamic and ongoing information exchange process between potential, actual, or former consumers regarding a product, service, brand or company", EWOM allows people to share ideas, opinions, and experiences using electronic communication platforms (e.g., social websites, emails, chat rooms, and online reviews) (Blal et al., 2014; Ismagilova et al., 2017). EWOM allows people to share ideas, opinions, and experiences using electronic communication platforms (e.g., social websites, emails, chat rooms,

and online reviews) (Blal et al., 2014). As a result, EWOM is likely to contain different emotional content felt in the real purchasing experience by consumers (Ahmad and Laroche, 2015; Kim and Gupta, 2012; Yin et al., 2014). Emotions expressed in the content of online reviews show the way individuals experience the whole situation (Nabi, 2003). Accordingly, this may arouse affective bonds or emotional solidarity among individuals as a result of individuals sharing beliefs and behaviours while interacting (Collins 1975; Woosnam et al., 2009).

Hoa Lo Prison Relics owns a group called "HistoTea" on the Facebook platform that has attracted more than 60 thousand participants. The content created and posted by group participants are all polite facts and outstanding events about the site. Their posts are in the form of texts, images or videos integrated with humour and styles that suit young people's tastes. Moreover, they may see that they have many things in common with those who share the same historical interests and feel affection towards each other. In this regard, participants in the group can feel close and sympathetic to others and hence, eventually develop emotional solidarity.

Based on the above discussion, we hypothesize that:

H5. *Emotional solidarity mediates the impacts of uncontrolled communication (EWOM) on preference*

2.5. Dark experience, engaging entertainment, casual interest and intention to visit

Dark experience closely relates to acts of death and dying, as well as a fascination with the abnormal, bizarre, and emotional experiences that come with visiting a dark tourism destination (Lewis et al., 2022). This is a type of motivation that comes from intrinsic motivation which originates from the inside wants of visitors. According to Raine (2013), dark tourist spectrum study of visitors who visited cemeteries and burial grounds, mourners and pilgrims had a personal and spiritual connection to the various places under consideration in some way, whether it is a religious connection to the individual or they served as a personal hero. The travelers had a deep connection to the deceased they were going to visit, which might be classified as them wanting a gloomy experience, whether they were mourners, pilgrims, or morbidly curious thrill seekers. The result is also an indication that visitors already have an obvious favor towards dark tourism places which also can be considered to have a preference and visiting intention for dark places.

Hoa Lo Prison is a place that has detained and brutally tortured many prisoners. Thereby, visitors to the site can obtain the dark experience. From a space that still retains the dark and scary scenes of the previous era, prisoner models with dark lighting and creepy sounds, visitors can imagine themselves experiencing the authentic emotions and visions of ancient prisoners as if they are in the same situations. At the same time, other emotions such as curiosity, surprise or sadness can also become part of the dark

experience that visitors may have. Findings from the qualitative phase indicate that the thrilling and scary features of dark tourism sites make them curious and hence, motivate them to visit the site as a way to conquer a challenge.

H6a. *Dark experience positively affects intention to visit*

Engaging entertainment entails personal or emotional connections to locations; it also includes interactive experiences at dark tourism locations (Foley and Lennon, 1996). Each tourist has their own heritage with existing beliefs, norms and cultural or religious values. If a tourism site with certain physical settings and entertainment activities fits this heritage, it can create high emotional involvement. Visiting the site to be physically and emotionally refreshed, meeting people with similar interests, and engaging with some entertainment activities may be perceived as a part of the tourists' heritage with strong personal and emotional connections (Lewis et al., 2022; Poria et al., 2006) conducted a study to determine links between tourists, their heritage, and why they visited heritage sites. Even if there are many dark destinations that don't provide entertainment, and tourists don't participate in black tourism for entertainment, engaging entertainment still appears as the emotional connections to locations. It was determined that reasons for visiting heritage sites were directly linked to tourists' perceptions of the site visited concerning their heritage and their willingness to be exposed emotionally. On the other hand, tourists may visit dark tourism destinations to see the reality behind the media images or to gain emotional connections to celebrities (Lewis, et al., 2022).

Hoa Lo Prison took advantage of passengers' curiosity about the real image behind the media activity to create many media articles. Beyond the distinct features of a dark tourism site, Hoa Lo Prison also communicates itself as a venue for a variety of services such as interpretation, culinary experiences, and other entertainment activities. The site's marketing team frequently communicate about historical features, dark experience, relics, peoples, services, facilities, and events at Hoa Lo Prison in a way that creates good destination images among potential visitors but still make them curious about the site in more detail. In addition, Hoa Lo Prison also cleverly uses a line of articles that is more connected to Gen Z with memes and familiar storytelling to create a new perspective about a historical place and further trigger their desire to visit the site. Findings from the in-depth interviews indicate that Gen Z visitors who are exposed to communication sources of Hoa Lo prison are emotionally motivated to explore a "missing part" of what is advertised and talked about Hoa Lo prison by interacting with the physical evidence, people, and activities at the site in reality.

H6b. *Engaging entertainment positively affects intention to visit.*

Casual interest has been identified by Lewis et al. (2022) as an individual preference to visit a dark tourism location to obtain entertainment value and have a relaxing time. Tourists wish to visit dark tourism locations for entertainment value but want a relaxing experience at the same time (Bissell, 2009; Raine, 2013). But unlike engaging

entertainment - which is greatly influenced by the relic's media activities and impacts the feeling of wanting to know more about that relic through media activities, casual interest originates deeper in the visitors' inherent interests and daily moods. For example, Raine (2013) treats some visitors as "incidental" tourists, including sightseers, retreatants, and passive recreationists. Instead of visiting to experience events related to death and burials, these tourists visited either because of their general interest in the area or to escape from the stresses of everyday life (Raine, 2013). Tourists could encounter dark tourism unknowingly as they are just wanting something to do while on vacation and happen upon a dark tourism destination or activity. So we can see that, in some cases, the preference at these places is already there, visitors just need motivation like the urge to have a relaxing time or get away from the daily pressure to take action to visit dark tourism places. In a research by Giri (2020) about motivations to visit Museum Prasasti, a dark tourism site, the author observes that people go travelling and spend time with family and friends at the site to release their stress. The "spending time with family" motive is even found as the most favourable reason based on the researcher's observation. In this regard, casual interest is a motivation for tourists who want to "do something else" to their souls more relaxed and dark tourism sites could be a favourite option.

Located on a heavily traveled road in the capital of Vietnam, Hoa Lo Prison can easily turn itself into a tourism place for visitors when arriving in Hanoi or simply a get-away venue for residents. Besides the dark experience and engaging entertainment, findings from in-depth interviews show some other reasons that encourage them to visit the site. First, given outstanding historical value with stories about its predecessors or night tours recreating ancient stories with Vietnamese characteristics, participants want to come to visit Hoa Lo Prison as a way to approach history in a non-boring and proactive way. In addition, some participants are impressed by the peaceful and refreshing atmosphere of the site and simply want to visit there to renew their souls, relax and have a valuable getaway. We, therefore, hypothesize that:

H6c. Casual interest positively affects intention to visit
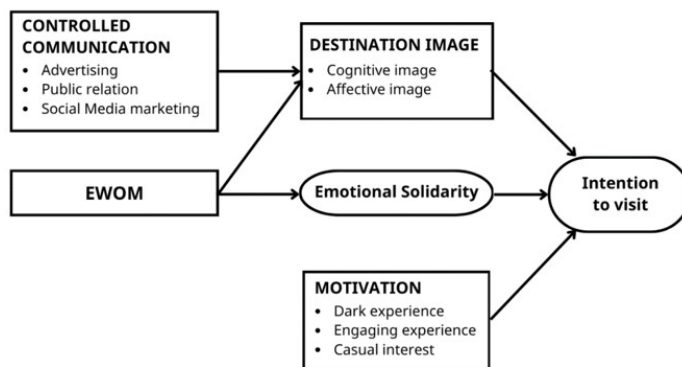
Figure 1. Conceptual model (Model 1)

3. RESEARCH METHODOLOGY

Stage 1: Qualitative research

Since there is a lack of existing literature about the motivation to visit dark tourism among Gen Z, we first conducted qualitative research to explore relevant motives that may drive Gen Z in Vietnam to visit Hoa Lo Prison. For the qualitative phase, we conducted in-depth interviews in September 2023 with 20 young people aged 18 - 26. They were selected to ensure diversity in terms of their experiences at dark tourism sites. Table 1 below reports the characteristics of the sample used for the interview.

Table 1. Sampling profile for the in-depth interview

Characteristics	Number of participants	
Age	18-22	11
	23 - 26	9
Geographic	Living in Ha Noi capital	12
	Living outside Hanoi	8
Dark tourism experiences	Have visited dark tourism sites	10
	Have not visited any dark tourism sites before	10

Before the interview, we invited each participant, clearly stating our purposes and obtaining their consent. Each interview was conducted within 30 minutes, face-to-face via Zoom or other online platform. Upon the participants' approval, their answers during the interview sessions were recorded and deleted as soon as the research was done. The data was designed and analyzed based on the consensual qualitative research method (Hill et al., 2005). Specifically, we prepared a list of open-ended questions in advance so that an interviewer in each session utilized those questions to guide and encourage the participants to share their ideas on the preset topics. Based on the question themes, we identified and categorized the core ideas as embedded in the participants' answers. Correspondingly, the frequency of the occurrence of the categories was also noted. As suggested by Hill et al. (2005), we only report and use categories that were mentioned twice for the development of hypotheses. The core ideas were then merged and conceptualized with the literature review on dark tourism to formulate the conceptual model and develop hypotheses.

Stage 2: Quantitative research

We employed the survey method to collect quantitative data for testing the measurement scales and the conceptual model. For more convenience and timesaving, an online questionnaire was utilized for data collection. Measurement scales of controlled communication including advertising, PR, social media, EWOM, motivation including dark experience, engaging entertainment, unique learning experiment and casual interest were adapted from previous works in the field of dark tourism to ensure face validity.

Controlled communication was measured using a 12-item scale proposed by Gómez-Rico et al. (2023) that was adapted to the wineries tourism sector. This instrument considers the following dimensions of advertising and public relations which are consistent with the results of our content analysis. Social media efforts are scored with 4 items as suggested by Godey et al. (2016). Meanwhile, the measurement scales for EWOM is adopted from Fakharyan (2012) with 3 items. Destination image was assessed using Joo et al. (2023)'s 14-item scale that considers 2 dimensions: functional image, affective image while emotional solidarity is measured with 6 items as proposed by Joo et al. (2019). Measurement properties for the three motivations to visit dark tourism sites are adapted from Lewis et al. (2022) but modified based on findings from the in-depth interview to suit our research context. Specifically, dark experience's measurement properties consisted of six statements, related to death, fascination with abnormal and/or bizarre events and destinations, and emotional experiences with a connection to death (e.g., "to travel", "to have some entertainment"). Engaging entertainment was measured using five statements that inquired about the personal or emotional connection to the destination they have visited or wish to visit in the future. On the other hand, Casual interest is scored by 3 items which measure the extent to which individuals want to have some entertainment value and a relaxing time while visiting dark tourism sites. Finally, intention to visit is captured by 4 measurement items as adopted from Joo et al. (2023). The response format to measure latent variables was based on a 5-point Likert scale.

A pilot test was conducted on 30 Vietnamese travelers from 18-26 years old to ensure the questionnaire's comprehension; easy-to-understand language and phraseology; ease of answering; practicality and length of the survey (Hague et al., 2004). The final measurement properties are shown in Table 2. Next, the quantitative survey was conducted from September to October of 2023 with sample size of 435 young people whose's demographic are shown in Table 3 below. The quota sampling method is employed to ensure the diversity of sampling units in terms of demographic characteristics among Gen Z potential visitors. For this study, only those who have not visited Hoa Lo Prison were selected as participants in the survey. We also attached materials and links about planned communication activities and EWOM about Hoa Lo Prison in our questionnaire for participants' reference. The use of an online questionnaire allows participants to have enough time and self-management to examine the communication sources and experience decision-making phases. Out of 435 filled questionnaires (that indicates a response rate of 43.5%), 401 are usable while the remaining 34 demonstrate a high probability of response bias (most answers were fixed to a single response, either "Neutral" or "Agree").

Table 2. Measurement scales

Variable items and codes			Sources of adaptation
Advertising (AD)	COM1	I react favourably to the advertising and promotions of Hoa Lo Prison Relic.	Gómez-Rico et al (2023)
	COM2	I feel positive towards the advertising and promotions of Hoa Lo Prison Relic.	
	COM3	The advertising and promotions of Hoa Lo Prison Relic are good.	
	COM4	I like the advertising and promotions of Hoa Lo Prison Relic.	
Public Relations (PR)	COM5	Hoa Lo Prison Relic's public relations activities are good.	
	COM6	I find Hoa Lo Prison Relic's sponsorship and public relations activities to be very positive.	
	COM7	Hoa Lo Relic's public relations activities are very appealing.	
	COM8	I am favourably disposed towards Hoa Lo Prison Relic's sponsorship and public relations activities.	
Social Media (SM)	COM9	Social media communications for Hoa Lo Prison Relic meet my expectations.	Godey et al. (2016)
	COM10	Social media communications for Hoa Lo Prison Relic are very attractive.	
	COM11	I am satisfied with social media communications for Hoa Lo Prison Relic.	
	COM12	Social media communications for Hoa Lo Prison Relic perform well when compared with social media communications of other dark tourist destinations.	
EWOM	EWOM1	It is necessary to read other tourists' travel/sightseeing reviews to know why Hoa Lo Prison made a good impression on them.	Fakharyan (2012)
	EWOM2	Information from online travel reviews of tourists to Hoa Lo Prison before deciding to go here is quite useful.	
	EWOM3	Online reviews from previous tourists made me more confident in my decision to visit Hoa Lo prison.	
Dark experience (DE)	DE1	To satisfy my fascination with abnormal and bizarre events.	Lewis et al. (2022)
	DE2	To seek out stories related to Hoa Lo prison relic.	
	DE3	To satisfy personal curiosity about how the victims died when visiting Hoa Lo Prison Relic.	
	DE4	To witness the act of death and dying.	
	DE5	To reconnect with the individual(s) that were somehow associated with the Hoa Lo Prison Relic.	
	DE6	To the wreckage/debris of Hoa Lo Prison Relic.	

KỶ YẾU HỘI THẢO KHOA HỌC QUỐC TẾ 2024: DU LỊCH THÔNG MINH VÀ PHÁT TRIỂN BỀN VỮNG: ... 87

Engaging entertainment (EE)	EE1	To be physically refreshed.	Lewis et al. (2022)
	EE2	To be emotionally refreshed.	
	EE3	To interact with people with similar interests.	
	EE4	To change the pace of daily life.	
	EE5	To have some entertainment.	
Casual Interest (CI)	CI1	To experience valuable tours.	Lewis et al. (2022)
	CI2	To have an enjoyable time with family or friends.	
	CI3	To enjoy natural scenery.	
Cognitive image (CIM)	CIM1	Visiting Hoa Lo Prison Relics can be a worthwhile experience.	Joo et al. (2023)
	CIM2	Hoa Lo Prison Relics has quality infrastructure.	
	CIM3	Hoa Lo Prison Relic has good personal safety.	
	CIM4	Hoa Lo Prison Relic has an unpolluted or unspoiled environment.	
	CIM5	Hoa Lo Prison Relic has standard hygiene and cleanness.	
	CIM6	Hoa Lo Prison Relic has interesting and friendly people.	
Affective image (AIM)	AIM1	Visiting Hoa Lo Prison Relic will make me pleasant.	Joo et al. (2023)
	AIM2	When visiting Hoa Lo Prison Relic, I will be arousing.	
	AIM3	Visiting Hoa Lo Prison Relic is relaxing.	
	AIM4	Hoa Lo Prison Relic is exciting.	
	AIM5	Hoa Lo Prison Relics will make me have many different and interesting emotions.	
	AIM6	Hoa Lo Prison Relic has an exotic atmosphere.	
	AIM7	Hoa Lo Prison Relic has recommendations.	
	AIM8	Hoa Lo Prison Relic has availability of travel information.	
Emotional solidary (ES)	ES1	I feel close to other interest-based tourists I expect to meet in Hoa Lo Prison.	Joo et al. (2019)
	ES2	I identify with other interest-based tourists I expect to meet in Hoa Lo Prison.	
	ES3	I have a lot in common with other interest-based tourists I expect to meet in Hoa Lo Prison.	
	ES4	I feel affection towards other interest-based tourists I expect to meet in Hoa Lo Prison.	
	ES5	I will be proud to be welcomed as a fellow interest-based tourist to Hoa Lo Prison.	
	ES6	I will get along with other interest-based tourists I expect to meet in Hoa Lo Prison fairly.	

Intention (INT)	INT1	I predict I will visit Hoa Lo Prison Relic in the future.	Joo et al. (2023)
	INT2	I would rather visit Hoa Lo Prison Relic than anywhere else.	
	INT3	If everything goes as I think, I will plan to visit the Hoa Lo Prison Relic in the future.	
	INT4	I would encourage my family and friends to come to Hoa Lo Prison Relic.	

The sample structure is shown in Table 3. The research sample evenly covers both males and females (47.13% and 52.87% respectively). Due to the purpose of this study, all respondents are Gen Z aged ranging from 18 to 26 years old. The majority of them have an income of less than 10 million VND. This deems to be reasonable since they are mostly students or newly employed.

Table 3. Sampling profile for the quantitative survey

Characteristics	Sampling structure	
	Frequency	Percentage
Gender	401	100%
Female	212	52.87
Male	189	47.13
Age	401	100%
18 - 22 years old	226	56.36
23 - 26 years old	175	43.64
Monthly disposable income	401	100%
< VND 5 million	169	42.14
VND 5- less than 10 million	151	37.66
VND 10 million and above	81	20.2

4. RESULTS

4.1. Assessment of measurement model

To check the convergent and discriminant validity of measurement scales for 10 latent constructs, including Advertising (AD), Public relations (PR), Social Media marketing (SM), E-World of Mouth (EWOM), Dark experience (DE), Engaging experience (EE), Casual interest (CI), Cognitive image (CIM), Affective image (AIM), Emotional solidarity (ES), and Intention to visit (INT), we follow the guidance for SEM analysis by Anderson and Gerbing (1988). Specifically, we conducted exploratory factor analysis (EFA) on SPSS and then confirmatory factor analysis (CFA) on AMOS while further using discriminatory tests suggested by Fornell and Larcker (1981) and calculating Cronbach's Alpha in SPSS for reliability test. First, The EFA results demonstrate eight

factors emerged with factor loadings all greater than 0.5. Interestingly, measurement items of AD, PR, and SM are all converged into one factor. As controlled communication techniques, this result implies that the communication activities of Hoa Lo Prison are so integrated that the audiences have consistent evaluations across those promotional mixes. We, therefore, formulate the new construct named Controlled communication (COM) to include AD, PR, and SM as one variable for further analysis. For the remaining constructs, all the measurement items are subjected to how they were initially measured. This affirms the convergent and discriminant validity of the measurement properties.

Next, the pool of measurement items is subject to CFA where they are evaluated in terms of convergent validity. Table 4 demonstrates the CFA results of the eight-factor model. The figures as shown in Table 4 indicate that all factor loadings are statistically significant and greater than 0.4. This further affirms the convergent validity of the measurement properties (Nunnally and Bernstein, 1994). In addition, the values of model fit indicators are also within an acceptable range, implying that the eight-factor model is reasonably consistent with the data.

The reliability of the measurement properties is evaluated by calculating Cronbach's Alpha coefficients (See Table 5). The reliability test results show that all Cronbach's alpha values were higher than the cut-off value of 0.7. This implies high internal consistency among measurement items of each construct. The reliability of the measurement scales is therefore confirmed. Next, we further conduct the discrimination test where Average Variance Extracted (AVE) indicators are estimated and compared with 0.5 as well as the squares of correlations between constructs (Anderson and Gerbing, 1988; Fornell and Larcker, 1981). The discriminant test results reveal that AVE values of COM, EWOM, DE, CIM, ES, and INT are all higher than the threshold value. Although AVE values of EE, CI, and AIM are slightly below 0.5, they are all greater than squares of correlations between constructs. This further affirms that the validity of measurement scales used to score the eight constructs is acceptable.

Table 4. Confirmatory factor analysis results

	Mean	Std. Deviation	Factor loading	t-value
COM1	4.09	0.922	0.724	___
COM2	4.12	0.911	0.74	16.142
COM3	4.09	0.979	0.754	17.268
COM4	4.02	0.920	0.79	16.559
COM5	3.83	0.878	0.779	15.497
COM6	3.94	0.912	0.734	14.527
COM7	3.91	0.901	0.747	14.82
COM8	4.01	0.906	0.764	15.172

COM9	3.95	0.993	0.817	16.283
COM10	4.05	0.918	0.833	16.598
COM11	3.99	0.919	0.842	16.783
COM12	4.13	0.947	0.829	16.496
EWOM1	3.84	0.963	0.823	____
EWOM2	3.83	0.904	0.86	18.945
EWOM3	3.89	0.972	0.803	17.623
DE1	3.79	0.989	0.782	____
DE2	4.06	0.904	0.716	15.047
DE3	4.01	0.963	0.806	17.396
DE4	4.04	0.937	0.821	17.811
DE5	3.85	0.967	0.827	17.96
DE6	4.06	0.922	0.695	14.515
EE1	3.62	0.996	0.719	____
EE2	3.27	1.086	0.69	12.865
EE3	3.62	1.043	0.842	15.451
EE4	3.76	1.082	0.688	12.828
EE5	3.45	1.124	0.722	13.448
CI1	3.73	0.980	0.852	____
CI2	3.92	0.924	0.81	18.083
CI3	3.81	0.968	0.699	15.017
CIM1	3.66	0.906	0.645	____
CIM2	3.88	0.883	0.784	13.209
CIM3	3.94	0.894	0.702	12.1
CIM4	3.66	0.961	0.765	12.962
CIM5	3.98	0.922	0.694	11.993
CIM6	3.94	0.908	0.844	13.955
AIM1	4.07	0.904	0.733	____
AIM2	3.69	0.882	0.752	15.025
AIM3	3.97	0.842	0.741	14.783
AIM4	3.80	0.913	0.752	15.026
AIM5	3.83	0.866	0.796	15.961
AIM6	3.94	0.892	0.769	15.37
AIM7	3.86	0.900	0.731	14.576
AIM8	3.99	0.906	0.729	14.528
ES1	3.20	1.095	0.734	____
ES2	3.50	0.993	0.803	15.62
ES3	3.45	0.974	0.799	15.532
ES4	3.58	0.908	0.811	15.772

ES5	3.35	0.991	0.666	12.876
ES6	3.52	0.980	0.605	11.667
INT1	4.20	0.824	0.774	____
INT2	3.46	1.002	0.612	12.195
INT3	4.00	0.919	0.835	17.295
INT4	3.93	0.966	0.814	16.81

Notes: Measurement model fit details: CMIN/df = 2.545; p=.000; RMR=0.055; GFI=0.855; CFI = 0.914; AGFI= 0.826; RMSEA=0.062; PCLOSE<0.001; "___" denotes loading fixed to 1

Table 5. Reliability and correlation of constructs

	COM	EWOM	DE	EE	CI	CIM	AIM	ES	INT	Reliability
COM	**0.531**									0.95
EWOM	0.129	**0.500**								0.866
DE	0.106	0.141	**0.568**							0.899
EE	0.072	0.087	0.108	**0.489**						0.849
CI	0.133	0.099	0.121	0.162	**0.480**					0.826
CIM	0.049	0.051	0.071	0.067	0.071	**0.513**				0.879
AIM	0.093	0.093	0.103	0.104	0.162	0.091	**0.483**			0.911
ES	0.020	0.044	0.031	0.116	0.131	0.071	0.094	**0.535**		0.875
INT	0.066	0.065	0.084	0.088	0.139	0.066	0.111	0.088	**0.679**	0.838

In addition to the Cronbach's Alpha coefficient, the group also relies on the corrected item-total correlation to further evaluate the reliability of the measurement scales. According to Nunnally & Burnstein (1994), variables with corrected item - total correlation below 0.3 are considered irrelevant and should be discarded.

Table 6. Cronbach's Alpha coefficient results

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
COM1	44.017	66.747	0.801	0.944
COM2	43.985	66.680	0.816	0.944
COM3	44.020	65.980	0.800	0.944
COM4	44.087	67.030	0.782	0.945
COM5	44.274	68.010	0.751	0.946
COM6	44.165	67.833	0.732	0.947
COM7	44.200	68.100	0.723	0.947

COM8	44.100	67.635	0.752	0.946
COM9	44.152	66.119	0.778	0.945
COM10	44.055	67.492	0.751	0.946
COM11	44.120	67.636	0.739	0.946
COM12	43.978	67.617	0.716	0.947
EWOM1	7.716	3.019	0.723	0.832
EWOM2	7.723	3.086	0.776	0.786
EWOM3	7.663	2.954	0.739	0.818
DE1	20.002	15.437	0.648	0.893
DE2	19.733	15.246	0.764	0.875
DE3	19.781	14.747	0.781	0.872
DE4	19.753	15.051	0.759	0.876
DE5	19.940	15.381	0.678	0.888
DE6	19.731	15.332	0.730	0.880
EE1	14.092	12.239	0.648	0.821
EE2	14.439	11.897	0.623	0.828
EE3	14.097	11.268	0.770	0.601
EE4	13.958	12.066	0.600	0.834
EE5	14.267	11.456	0.661	0.818
CI1	7.721	3.047	0.617	0.825
CI2	7.539	3.004	0.706	0.736
CI3	7.648	2.819	0.727	0.713
CIM1	19.397	13.625	0.635	0.867
CIM2	19.117	13.349	0.696	0.857
CIM3	19.392	12.939	0.698	0.857
CIM4	19.080	13.329	0.736	0.871
CIM5	19.172	13.598	0.663	0.862
CIM6	19.117	12.924	0.758	0.847
AIM1	27.070	24.195	0.687	0.902
AIM2	27.449	24.098	0.721	0.899
AIM3	27.177	24.476	0.713	0.900
AIM4	27.347	23.887	0.718	0.899
AIM5	27.317	23.887	0.766	0.895
AIM6	27.202	24.037	0.719	0.899
AIM7	27.282	24.223	0.687	0.902
AIM8	27.152	24.244	0.679	0.902
ES1	17.401	14.811	0.682	0.853
ES2	17.105	15.154	0.726	0.845
ES3	17.157	15.258	0.729	0.844
ES4	17.025	15.679	0.730	0.846
ES5	17.259	15.728	0.642	0.859
ES6	17.082	16.286	0.570	0.871

INT1	11.382	5.962	0.662	0.800
INT2	12.127	5.646	0.557	0.848
INT3	11.591	5.282	0.752	0.758
INT4	11.658	5.175	0.727	0.768

The analysis results indicate that the Cronbach's Alpha coefficients of all scales are greater than 0.6 while the Corrected Item- Total Correlation also meet the requirements, so no scale will be eliminated.

4.2. Hypothesis testing

4.2.1. Hypothesis testing for the whole sample

Due to the complexity of the conceptual model, we employ SEM analysis to allow the estimation of either direct or indirect hypothesized relationships. The first column in Table 7 shows the results of path analysis for the original model. The estimated results indicate that both Controlled communication and EWOM have significant positive impacts on either Cognitive image or Affective image. In addition, EWOM also demonstrates a significant positive effect on Emotional solidarity. All Cognitive image, Affective image, and Emotional solidarity significantly contribute to forming customers' intention to visit. Regarding motivations, Dark experience and Casual interest positively and significantly drive intention to visit. Meanwhile, such a relationship between Engaging experience and intention to visit was not found.

Next, we employ the mediation analysis technique as proposed by Baron and Kenny (1986) to test the hypotheses regarding the mediation role of Cognitive Image, Affective Image, and Emotional Solidarity in the impacts of both controlled communication and EWOM on intention to visit. From Model 1 (the original model), we construct and run SEM analysis for Model 2 - where both Cognitive image and Affective image are absent (See Figure 5) and Model 3 - where Emotional Solidarity is absent (See Figure 6). The path coefficients as results from the original and modified models are then compared to serve the mediating analysis.

Figures shown in the second column of Table 6 indicate that the effects of both Controlled communication and EWOM are all insignificant in the original model. However, in the absence of both Cognitive image and Affective image (Model 2), the impact of Controlled communication on Intention to visit becomes significant and positive. Based on the mediating conditions as proposed by Baron and Kenny (1986), we conclude that Cognitive image and Affective image mediate the relationship between controlled communication on Intention to visit. Nevertheless, EWOM has no significant impact on Intention to visit in neither Model 2 nor Model 3.
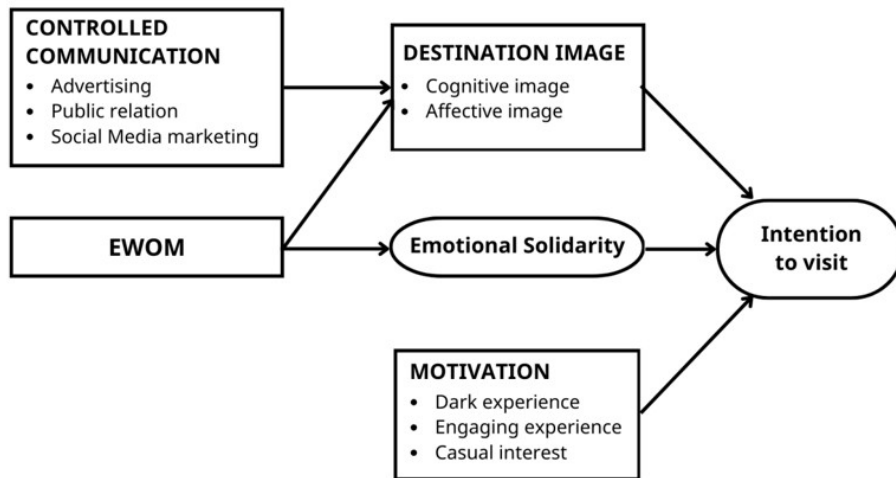
Figure 2. Modified model (Model 2)
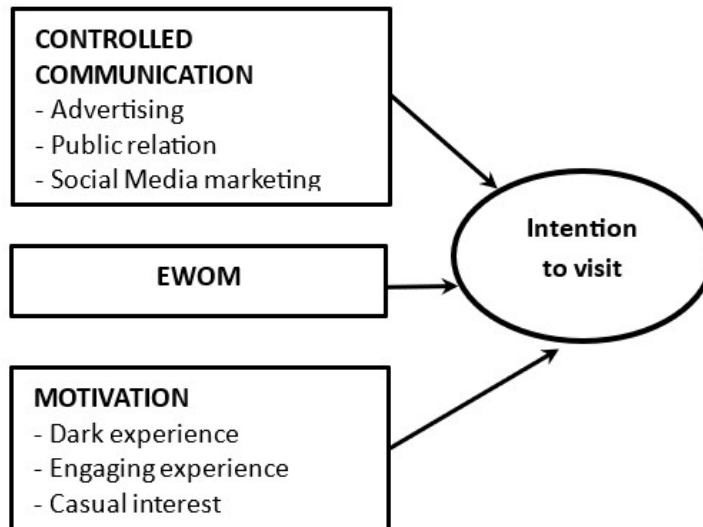
Figure 3. Modified model (Model 3)

Table 7. Path coefficients for the whole sample

Construct path	Model 1 (Original model)	Model 2 (Without CIM & AIM)	Model 3 (Without ES)
COM --> CIM	0.319**	N/A	0.369**
EWOM --> CIM	0.225**	N/A	0.166**
COM -->AIM	0.482**	N/A	0.537**
EWOM --> AIM	0.270**	N/A	0.205**

EWOM --> ES	0.415**	0.351**	N/A
DE --> INT	0.168*	0.26**	0.129*
EE --> INT	-0.064	-0.05	-0.027
CI --> INT	0.175**	0.256**	0216**
CIM --> INT	0.137*	N/A	0.195*
AIM --> INT	0.374**	N/A	0.436**
ES --> INT	0.163**	0.260**	N/A
COM --> INT	0.015	0.14*	-0.059
EWOM --> INT	-0.053	-0.024	-0.015
Fit indices			
CMIN/df	2.835	2.901	2.533
CFI	0.902	0.899	0.92
GFI	0.848	0.845	0.904
AGFI	0.816	0.814	0.896
RMR	0.072	0.073	0.049
RMSEA	0.068	0.069	0.062
PCLOSE	<0.001	<0.001	<0.001

*Notes: *p<0.05; **p<0.001.*

5. DISCUSSION AND MANAGERIAL IMPLICATION

Our estimation results show that planned destination communication about the dark tourism site and two types of motivation, including dark experience and casual interest have significant positive impacts on Gen Z's intention to visit the dark tourism site. In which, the influences of advertising, PR and social media marketing on visiting intention could be explained by the mediating role of cognitive and affective détination images. These findings affirm the fundamental theoretical frameworks about the linkages among perception, motivation, attitudes and behavioral intentions. Our findings are also in line with previous studies which indicate the role of destination communication in shaping the destination's perceptions and visiting intention (Hankinson, 2004) as well as the impacts of a cognitive image, affective image and emotional solidarity on tourists' intention (Beerli and Martin, 2004; Joo et al., 2023). The estimation results further indicate that affective image has the most notable effect on intention, followed by emotional solidarity while cognitive destination images have the least influence. Dark tourism is about death and tragedy which can be a little bit scary. Tourists need to have affection for places to encourage them to visit this kind of tourism site so this can be understood why affective images have the most important impact. In addition, as a museum of the Vietnamese war where travelers can sense the pain of the victims through their patriotism, their connection with fellow compatriots and empathy are also strong factors driving their intention to visit

because they can gain more value from this connection. These findings imply that the decision to visit dark tourism sites is driven by customers' feelings rather than their cognitive thinking. Interestingly, although EWOM demonstrates significant positive effects on both perceived destination images and emotional solidarity, it has an insignificant impact on intention to visit. This result is different from previous research which pointed out that EWOM has a positive effect towards tourism intentions (Mehmood et al., 2018; Xia et al., 2008). Moreover, compared to planned communications, EWOM has a weaker impact on cognitive and affective destination images. Given that both traditional communication and EWOM are information sources for potential travelers during their decision-making process when the planned communications activities are helpful and reliable enough, the role of EWOM may become weaker. Another possible reason is that when EWOM generates too much confusing and incomprehensive information, potential visitors seek official communication sources for more confidence. In the case of Hoa Lo Prison, this dark tourism site has been well-known as a typical example of attractive and effective communication activities, especially targeting young visitors in recent years. Moreover, the site is managed by local governments from which customers may place high trust on information quality. These interesting findings highlight the critical importance of planned communication activities in shaping potential visitors' attitudes, regardless of the rising role of EWOM. Further, in comparison between the influence of visitors' attitudinal and motivational factors, our findings show that the attitudes towards the dark tourism site as formed by communication sources generally have stronger impacts on visiting intentions than that of travelers' motives. This highlights the important roles of communications.

From the results of this study, practitioners working in tourism industries and communities of dark tourism destinations can have some recommendations to improve their communication and marketing progress. First, tailoring the contents to suit Gen Z's communication trends, making communication materials as authentic or "real" as possible, and organizing many event programs for visitors to provide more reasons to visit, such as the Sacred Night of Hoa Lo Prison are good strategies that can be referred to. In addition, the use of social media is an important part of the marketing communication agenda, especially for Gen Z, who tend to trust conventional advertising less (Dwivedi and McDonald, 2018). Moreover, the highlighted roles of affective images and emotional solidarity in driving visiting intentions as found in this study also provide an important implication about how communication content should be prepared. Specifically, marketing stimuli such as impressive texts, images, videos, or audio that could arouse feelings in the audiences should be used instead of lengthy reading texts which may be informative and helpful but lack emotional triggers. Feeling the vibe of dark tourism sites, bringing new feelings, they were able to feel excited and refreshed with those communication contents and this will eventually lead to liking and desire to visit the site.

Secondly, the impact of intrinsic motivation has been proven to still be greater than the communication efforts. Accordingly, DMOs of dark tourism sites should also carefully consider strategies that can arouse and stimulate distinct motivations for dark tourism. However, dark tourism is the act of traveling to places that are related to tragedy,death,or suffering (Foley and Lennon,1996). This comprises areas with a macabre or depressing past, such as battlefields, concentration camps, catastrophe zones, and other locations so dark tourism sites can't market like other tourist destinations or sites that offer pleasant experiences. Therefore, to plan communication strategies for dark tourism sites, the significant positive relationships found in this study between dark experience and casual interest are also the most worth mentioning. These results suggest that for communication purposes, sites need to more actively express their dark images, be it the stories of the deceased who sacrificed at the location, or the historical significance or events, strange things that happened at the location, etc. through a variety of approaches such as podcasts, stories, and pictures. At the same time, in terms of services and facilities to meet the interests of passengers, DMOs should offer a variety of tours and services to visitors such as having additional activities such as night tours, additional scary sounds, or lighting arrangements to optimize the visitor's experience by arousing the "darkest" feeling. Beyond the dark tourism sites which provide a "dark experience", our findings also indicate that Gen Z is also motivated by casual interests such as valuable tours and enjoyable time with their family members. Therefore, to be able to encourage visitors to visit their places, monuments should not only simply limit themselves to distinct features of a dark tourism site, but also transform themselves into an attractive destination with valuable experience and easy access.

6. LIMITATIONS AND FUTURE RESEARCH

This research offers significant advice to managers seeking to increase their intention to visit dark destinations. However, when evaluating the method and findings of this study, several limitations need to be considered. First, as this study is limited to dark places located in Hanoi, Vietnam, its generalization may be limited. Future research could revisit this study in other countries or with more diversified dark tourism sites to further generalize the findings. Second, this research only examines the case of a prison tourism place and does not take into consideration other types of dark tourism destinations. With this type of tourism, deactivated prisons as former sites of punishment and incarceration have been converted into museums or heritage sites to mitigate the darkness. Meanwhile, dark tourism destinations vary in the levels of violence and death that are associated with them as well as the extent to which the darkness is preserved (Stone and Sharpley, 2008). Future research can investigate additional motivational factors of tourists to visit dark tourism destinations with varying levels of darkness associated. Also, we used the most widely accepted dimensions to measure destination communication and brand image, but other components do exist and could be considered in future studies. Finally, this study only uses a sample size of 439 valid questionnaires with the convenience sampling

method, leading to limited representativeness of the sample in the whole population. Accordingly, future research with larger sample sizes and better sampling methods could yield more reliable and insightful findings.

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DIGITAL TRANSFORMATION
WITH SMART TOURISM DEVELOPMENT IN VIETNAM

Đinh Thị Hoà[1]

Abtract: *Implementing the Party's policy, the Vietnam Tourism Development Strategy to 2030 clearly states the task of accelerating the digital transformation process, forming and developing a smart tourism ecosystem in Vietnam. Despite having a great advantage in tourism, however, compared to other countries in the region, the contribution of the tourism industry to Vietnam's GDP is still quite low. Vietnam tourism only contributes about 7% of GDP while this rate in Thailand is 20.3% of GDP, the Philippines is 22.5% and Cambodia is 25.8%. Today, the digital transformation process has opened up many development opportunities for Vietnamese tourism. With the impact of digital transformation, smart tourism is gradually replacing traditional tourism and growing stronger. This is shown through the number of domestic and international tourists to Vietnam, which has increased rapidly in recent years, along with the increasingly popular use of smart applications. Starting from the above reality, in this article, the author will focus on research on digital transformation and smart tourism development, thereby making some proposals to develop smart tourism in Vietnam.*

Keywords: *Digital transformation; Smart tourism; Sustainable development; Tourism products, smart applications.*

Tóm tắt: *Thực hiện chủ trương của Đảng, Chiến lược phát triển du lịch Việt Nam đến năm 2030 nêu rõ nhiệm vụ đẩy nhanh quá trình chuyển đổi số, hình thành và phát triển hệ sinh thái du lịch thông minh tại Việt Nam. Mặc dù có lợi thế lớn về du lịch, tuy nhiên, so với các nước trong khu vực, đóng góp của ngành du lịch vào GDP của Việt Nam vẫn còn khá thấp. Du lịch Việt Nam chỉ đóng góp khoảng 7% GDP, trong khi tỷ lệ này ở Thái Lan là 20,3% GDP, Philippines là 22,5% và Campuchia là 25,8%. Ngày nay, quá trình chuyển đổi số đã mở ra nhiều cơ hội phát triển cho du lịch Việt Nam. Dưới tác động của chuyển đổi số, du lịch thông minh đang dần thay thế du lịch truyền thống và ngày càng phát triển mạnh mẽ hơn. Điều này được thể hiện qua lượng khách du lịch trong nước và quốc tế đến Việt Nam tăng nhanh trong thời gian gần đây, cùng với đó là việc sử dụng các ứng dụng thông minh trong du lịch ngày càng trở nên phổ biến. Xuất phát từ thực tế trên, trong bài viết này, tác giả sẽ tập trung nghiên cứu về chuyển đổi số với phát triển du lịch thông minh, từ đó đưa ra một số đề xuất nhằm phát triển du lịch thông minh ở Việt Nam.*

Từ khoá: *Chuyển đổi số; Du lịch thông minh; Phát triển bền vững; Sản phẩm du lịch; Ứng dụng thông minh.*

1. INTRODUCTION

Vietnam is a country with great advantages in tourism. However, compared to other countries in the region, the contribution of tourism to Vietnam's GDP is still quite low. Vietnam tourism only contributes about 7% of GDP while this rate in Thailand is 20.3% of GDP, the Philippines is 22.5% and Cambodia is 25.8% [1]. Today, with the development of science and technology, the digital transformation process is taking place strongly in

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the tourism sector, opening up many development opportunities for Vietnamese tourism. In Vietnam, technology applications are increasingly widely used in the tourism industry: Mobile applications, artificial intelligence applications, Internet of things applications, tourism service evaluation applications... This has helped countries in general and Vietnam in particular create smart tourism products.

The smart tourism model helps increase the attractiveness of Vietnam's tourism products, improve efficiency through digital marketing, and promptly adapt to changes in tourist behavior. In particular, for localities in remote areas with tourism potential, the digital transformation process can help overcome geographical barriers and widely promote the image of the destination. In other words, smart tourism helps Vietnam's tourism industry develop quickly and dynamically in a professional direction. The above analysis shows that digital transformation plays a huge role in the development of smart tourism in Vietnam in the current period.

2. THEORETICAL BASIS AND RESEARCH OVERVIEW

2.1. Theoretical basis

Digital transformation: In recent years, digital transformation has emerged as a phenomenon in theoretical and practical research. In general terms, digital transformation is understood as the integration of digital technology into business operations leading to changes in business operations and providing value to customers [8]. The digital transformation process in the economy takes place in the following aspects:

Business and operating model: Digital transformation changes traditional business models and builds new business models based on digital technology, taking advantage of the connection and interaction between business aspects.

Workflow and organization: Optimize work processes and organization, change traditional ways of working to ways based on digital technology, ensure information integration and effective interaction.

Products and services: Improve, enhance and innovate products and services by integrating digital technology and creating smarter solutions to meet customers needs.

Data collection and analysis: Use digital technology to collect and analyze data from different sources to make smart decisions and predict future trends.

Customer interaction: Enhance customer interaction channels through digital platforms, create better user experiences and enhance customer interaction through digital technology.

Technology infrastructure: Improve technology infrastructure, including moving from a physical environment to a cloud computing environment and using advanced information technology solutions.

Digital transformation is a continuous, long-term process and requires commitment from the entire organization or society to move towards a digital and intelligent future.

Digital transformation with the development of smart tourism: Digital transformation in the tourism industry is the transformation of the traditional model to a modern model based on a digital platform and a data-based digital value chain [6]. This transition will provide the most convenient services for tourists. Currently, digital transformation is changing from the traditional tourism model to a smart tourism model. Smart tourism is developed based on the application of modern scientific and technological achievements, especially information and communication technology to apply technology to serve the needs of tourists. Smart tourism helps improve resource management efficiency, maximize competitiveness and enhance sustainability through the application of technology to innovation and practice.

Digital transformation promotes the development of smart tourism based on the following basic applications:

Mobile applications in travel behavior: With smartphones, tourists can now plan their entire trip from booking tickets and services to finding information about places to visit and choosing directions, tour guide, ordering on-site meals, ordering some additional services in the hotel... during the trip without having to interact directly with anyone. This trend is increasingly popular with customers and travel companies, hotels, and restaurants are increasing their applications to meet tourist needs.

Application of artificial intelligence (AI) and Chatbot: Artificial intelligence has affirmed its important position in digital market trends, including in the field of tourism. Chatbot is a program created from a computer, a tool that allows people to interact and communicate through a pre-programmed artificial intelligence. The advantage of a Chatbot is the ability to work continuously and be ready to answer many different types of requests such as: processing a booking request, reporting weather conditions, indicating the location of ATMs... anywhere, at any time and using any language.

Internet of Things in the tourism industry: More and more devices are connected to IoT, which tourism businesses can exploit to help serve customers more effectively. IoT data helps businesses know their needs, travel habits and a number of other characteristics so they can convey to potential customers the information they really care about.

Reviews and ratings of tourism products and services: Today, reviews and ratings of tourism products and services are becoming increasingly popular with the support of digital technology. When customers can share their opinions through social networks such as Facebook, Yelp, TripAdvisor or travel websites, it helps tourism businesses

better understand the wishes of tourists. This technical tool motivates businesses to pay more attention to quality, to create tourist satisfaction, build reputation through customer reviews, and is also a reference channel, helping customers feel comfortable. Rest assured when choosing a travel product or service.

Digital transformation plays a huge role in the development of smart tourism for tourism businesses. This is no longer a choice but is gradually becoming an inevitable trend that must be implemented for tourism businesses to improve their competitiveness and better meet customer needs.

2.2. The research overview

According to Linh (2020), smart tourism was born under the impact of the 4.0 technology revolution, especially the strong development of information and communication technology, which has allowed the creation of diverse products for the tourism industry. The development of information technology is also completely changing the way tourists access and share information. In the article, the author analyzed the opportunities and role of digital transformation for smart tourism development in Vietnam. On that basis, the author proposes that Vietnam needs to continue to improve policy institutions, identify models and pilot implementation, develop technologically qualified human resources and promote propaganda work to promote the development of smart tourism in Vietnam.

Chau (2023) stated that smart tourism development is an inevitable trend of the tourism industry in the current period. Digital transformation in the tourism industry is understood as shifting the traditional model to a modern model based on digital platforms and data-based digital value chains. Through digital transformation, customers will enhance their travel experience according to a new model in the digital space. Based on the analysis, the anthor has generalized the potential and advantages in tourism development and the contributions of the tourism industry in economic development.

According to Cang & Tho (2021), Digital transformation is taking place in all fields and industries in the economy. Not an exception to that trend, digital transformation in Vietnam's tourism industry is taking place very actively. Especially, after the COVID-19 pandemic, the tourism industry is increasingly seeing more clearly the importance and urgency of digital transformation. Digital transformation helps tourism businesses operate compactly, quickly and with high efficiency. Faced with the importance and benefits of digital transformation for the development of the country in general and the tourism

industry in particular, the authors believe that Vietnam needs to have synchronous and comprehensive solutions for digital transformation for Vietnam's tourism industry.

Giang & Nhung (2023) stated that Digital transformation is an inevitable need for Vietnamese tourism businesses after the COVID-19 epidemic. Currently, when the needs and habits of tourists have changed, digital transformation or not will determine the existence and development of tourism businesses. However, the authors identify that the digital transformation process in tourism businesses also has many problems and to develop tourism in a modern direction, Vietnam needs more synchronous solutions in the near future.

In previous research works, the authors have studied the development of the tourism industry in the context of digital transformation, the impact of digital transformation on tourism businesses and the trend of smart tourism development. However, to date there have been very few research projects on digital transformation related to the development of smart tourism in Vietnam. Therefore, this will be a space for the author to conduct this research.

3. DATA AND RESEARCH METHODS

3.1 Research data

To research digital transformation for smart tourism development in Vietnam, the article needs to use many types of data: Data on digital transformation in tourism, data on the proportion of tourists using applications. Smart applications, an increase in the number of domestic and international tourists coming to Vietnam... To serve the article, these data will be collected by the author from reliable sources: General Statistics Office, Vietnam National Administration of Tourism, research topics, magazines and other research works.

3.2 Research methods

Statistical method: This method is used to compile data related to Vietnamese tourism businesses that have implemented digital transformation and the number of tourists coming to Vietnam.

Analysis and synthesis method: This is the method used throughout the entire content of the article. With this method, the author conducts research on documents related to digital transformation activities and smart tourism to learn about the role of digital transformation in smart tourism development in Vietnam.

Classification and systematization method: In the article, the author uses the classification and systematization method to classify digitally transformed content in the tourism industry. From there, the author arranges the research content into an orderly, logical system to fully and comprehensively clarify the role of digital transformation in smart tourism development in Vietnam.

4. RESEARCH RESULTS

4.1 Current status of digital transformation in the tourism industry in Vietnam

In 2018, the Prime Minister issued Decision No. 1671/QD-TTg dated november 30, 2018 approving the "*Master plan for applying information technology in the field of tourism for the period 2018-2020, orientation by 2025*", which prioritizes the development of digital tourism and smart tourism. This is considered the foundation for implementing comprehensive digital transformation for Vietnam's tourism industry.

Identifying the importance and inevitable trend of digital transformation in the tourism sector, the Vietnam National Administration of Tourism has built a system of products applying technology and digital transformation in the tourism industry. This is the foundation for forming the tourism digital transformation ecosystem, making it easier for subjects to access and implement digital transformation faster. Among them, Smart Travel Card, Vietnam Travel application - Vietnam Travel, Tourism Business and Administration Platform application, Vietnam Tourism Yellow Pages, Vietnam Tourism database system.. are considered core products that provide practical support for tourists, tourism businesses and state management agencies in tourism. In particular, the "Safe Vietnam Travel" app - an important multi-utility integration platform - is a big step forward for digital transformation in Vietnam's tourism industry. Along with that, the Vietnam National Administration of Tourism has applied many smart and convenient products to help optimally meet the needs of users, typically: Room management system at accommodation establishments, system Electronic tickets, automatic access control systems, smart parking lots, vending machines... This has strongly promoted the digital transformation process to develop smart tourism in Vietnam.

Implementing the Government's policy, currently, many localities across the country have simultaneously deployed and applied many digital transformation applications to adapt to trends and open up strong development opportunities for smart tourism in Vietnam, typically Ho Chi Minh City, Hanoi City and Da Nang:

In Ho Chi Minh City, the tourism industry has made great strides when applying smart travel software on both Android and IOS platforms; Deploy the application of 3D technology in information and tourism promotion in 2022 to vividly recreate the city space on high ground, giving visitors interesting experiences in a visual and vivid way. In addition, the city also updated 366 tourism resources on the Google Earth and Google Map platforms and brought tourism products to the e-commerce trading platforms Shopee and Traveloka, making it easier to reach tourists.

In Hanoi, the Tourism Information Portal and countless smart travel applications or digital travel maps have been born. At the same time, the data system of more than 300 tourist attractions on the table has been unified and linked together. On the portal, tourists

can smartly access multimedia while watching, listening, and reading to fully exploit the potential and strengths of Hanoi's cultural heritage.

Da Nang City is also actively transforming the tourism industry with the deployment of the VR360 virtual reality application "One touch to Da Nang" at the end of 2021. Through the application, visitors can experience and explore the Famous landmarks in Da Nang with automatic English-Vietnamese voice-overs, 360-degree images,... and many other digital conversion applications to improve the quality of service for tourists from many parts of the world.

Across the country, other localities have also simultaneously deployed and applied many digital transformation applications in the tourism sector to adapt to trends and improve operational efficiency for the tourism industry.

4.2 Current status of smart tourism development in Vietnam under the effects of digital transformation

According to 2018 statistics, in Vietnam with nearly 100 million people, there are 64 million Internet users (accounting for 67% of the population), 55 million social network users (accounting for 57%), more than 70 million electricity users. mobile phone (accounting for 73%) [10]. This shows that the proportion of people using the Internet and smart devices in Vietnam is very large. This is the premise for Vietnam to carry out digital transformation and develop smart tourism.

Under the impact of digital transformation, smart tourism is increasingly developing in Vietnam, demonstrated through the increasing number of domestic and international tourists coming to Vietnam. The number of international tourists in the period 2021-2023 coming to Vietnam has increased rapidly: In 2021 it will be 1.6 million, in 2022 it will be 3.6 million and in 2023 it will increase to 12.6 million [3].
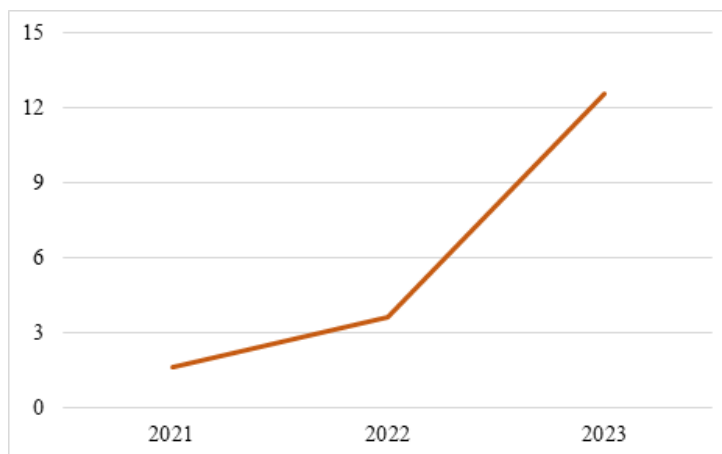
Figure 1. Number of international tourists coming to Vietnam in the period 2021-2023

Source: General Statistics Office and author's compilation

According to survey results of international tourists coming to Vietnam by self-organizing trips, up to 81% of tourists use Smartphones/Tablets before, during and after their trip. The Smartphone/Tablet brands most used by tourists belong to Apple and Samsung [2]. Along with the increase in international tourist arrivals, the number of domestic tourist arrivals in Vietnam is also increasing rapidly: More than 40 million in 2021, over 100 million in 2022 and 108 million in 2023 [11],[12].
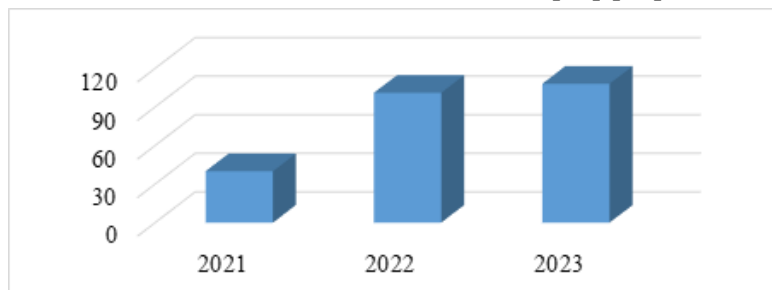
Figure 2. Number of domestic tourists in Vietnam in the period 2021-2023

Source: Vietnam National Tourism Administration and compiled by the author

According to information from the Vietnam E-Commerce Association, the rate of domestic tourists booking hotels online and booking online tours in Vietnam reached more than 60%; 71% of international tourists to Vietnam consult destination information on the Internet; 64% make reservations and purchase services online during their trip to Vietnam [7]. Thus, it can be seen that tourists use the Internet, smart utilities, and smart devices to search for travel information, refer to destinations, compare and choose reasonable and practical travel services. Currently, transactions for buying tours, booking rooms, buying airline tickets, and paying online... are increasingly on the rise. This is a very favorable condition for developing smart tourism in Vietnam.

Thanks to the strong digital transformation process in the tourism industry, the competitiveness of Vietnamese tourism has clearly grown. According to the 2019 Global Tourism Competitiveness Report of the World Economic Forum, Vietnam's tourism competitiveness increased 12 places, from 75/141 economies in 2015 to 67/ 136 in 2017 and 63/140 in 2019 [13]. In 2020 and 2021, despite being heavily impacted by the pandemic, Vietnam's tourism development capacity index still increased. In 2021, it increased 8 places compared to 2019, ranking 52/117; Vietnam has become one of the three countries with the highest level of improvement in the world [14].

5. DISCUSS RESEARCH RESULTS AND SOLUTIONS

5.1. Discuss research results

Based on the above analysis, we see that over time the digital transformation process has strongly promoted the development of smart tourism in Vietnam. This result is recorded in several aspects as follows:

Firstly, digital transformation in Vietnam's tourism industry has kept up with new business trends, promoting the development of smart tourism in Vietnam. Through digital transformation, Vietnamese tourism businesses have been renewing themselves to become smart businesses with tourism business activities mostly implemented online, such as: Marketing and promotion. product; market expansion research; customer care consultant; Carry out buying - selling, payment transactions...

Secondly, through digital transformation, customer needs are met better and better. Thanks to that, the number of tourists coming to Vietnam has increased rapidly, including both international and domestic visitors. Tourists are increasingly having better impressions of travel experiences in Vietnam.

Thirdly, thanks to the digital transformation process, Vietnamese localities with tourist destinations have actively coordinated with telecommunications corporations to deploy smart tourism projects and produce software, smart utilities for the tourism industry such as map utilities, route finding, bus stops, travel guides... This has helped tourism businesses become more proactive in facing and responding to changes in economic conditions, business environment, especially in difficult conditions such as economic recession, inflation...

Although the digital transformation process in the tourism industry has been bringing many opportunities and advantages to Vietnam in developing smart tourism, currently the digital transformation process in Vietnam's tourism industry is facing many difficulties and challenges, specifically:

Firstly, the process of innovation in thinking, building legal corridors, and organizing and implementing smart tourism in Vietnam has not had a breakthrough. The role of the community in smart tourism development is still limited. Vietnam does not have much creativity, mainly exploiting available natural conditions. Vietnam's unique cultural, historical and national identity values have not been maximized to turn into resources.

Secondly, the process of digital transformation and application of information technology in the tourism industry has not been implemented in a synchronous and unified manner. In many localities, differences in digital technology still exist, especially in areas with favorable conditions for implementing digital transformation, usually large provinces. Therefore, digitalization activities in the tourism industry are taking place sporadically and sporadically, lacking connection and building an effective database. This leads to difficulties in the process of managing, controlling, reporting and statistical data in the tourism industry. In addition, digital transformation in the tourism industry requires businesses to invest heavily in new technology and infrastructure. This requires quite large costs and not all businesses have the financial ability to invest.

Thirdly, digital transformation to develop smart tourism in Vietnam is facing a major technology problem. Currently, Vietnam's Internet connection and technical infrastructure are not really stable. This can affect customer experience and reduce customer trust in Vietnamese tourism businesses.

Fourthly, although high-quality human resources with information technology capabilities are the key to unlocking the door to digital transformation in the tourism industry, finding human resources with this skill is a challenge. knowledge for many tourism businesses. The reason is that the current training system in Vietnam still has many limitations in quickly responding to the trend of talent training and developing human resources for digital tourism activities.

5.2. Solutions

Digital transformation to develop smart tourism is a new trend taking place in Vietnam. To grasp the trend as well as have solutions to apply science and technology to develop smart tourism in the coming time, Vietnam needs to focus on some of the following solutions:

Firstly, Vietnam needs to perfect mechanisms and policies to promote the role of state management agencies from central to local levels in the process of implementing digital transformation to develop tourism. Focus on reviewing and promptly updating, amending and supplementing mechanisms, policies and regulations on tourism towards synchronization, modernity and integration, creating favorable conditions for both domestic and international tourists. At the same time, research and propose breakthrough mechanisms and solutions to develop the tourism industry, especially exploiting Vietnam's unique factors.

Secondly, it is necessary to promote the digital transformation process; form and develop a smart tourism ecosystem in Vietnam. Continue to invest and develop tourism human resources to meet requirements; diversify training forms; promote socialization, encourage businesses, and attract large tourism corporations in the world to participate in training tourism human resources.

Thirdly, tourism management agencies in Vietnam need to coordinate more closely with domestic and foreign agencies, organizations, and units to organize seminars, conferences, and discussions on a high-level scale. Provincial, industry, national and international levels revolve around the topic of digital transformation and smart tourism development in Vietnam.

Fourthly, to effectively develop digital transformation in tourism, the State needs to have policies to encourage businesses to build management and operation systems on technology platforms; take advantage of large data sources to analyze customers; Increase promotion on digital platforms.

Fifthly, it is necessary to strengthen close cooperation between units in the tourism industry and the information technology industry to design solutions and technology models to meet the needs of smart tourism management and business.

6. CONCLUSION

Tourism is a smokeless industry that plays an extremely important role in economic development. In tourism development, promoting image and best meeting customer needs is a key issue to create success. Under the impact of science, technology and digital transformation, smart tourism is gradually replacing traditional tourism. This is a common trend in many countries around the world, including Vietnam. Although the digital transformation journey to develop smart tourism in Vietnam in the coming time still has many challenges, with Vietnam's appropriate digital transformation strategy, with the efforts of tourism businesses and with the cooperation of ministries, departments and branches, the development potential of Vietnamese tourism businesses is still huge. Digital transformation not only helps tourism businesses optimize operating costs and improve operational efficiency but also improve customer experience. From there, enhance the position of Vietnamese tourism in the world tourism map./.

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DIGITAL TRANSFORMATION TO TOURISM DEVELOPMENT IN HANOI

Lê Thanh Tú[1]

Abstract: *Digital transformation plays an important role in the economic, cultural and social sectors in general and the tourism in particular. Hanoi tourism has recently determined to focus on renewing products, services, facilities, human resources, advertising, promotion and especially digital transformation in the tourism practically and effectively. The conveniences of digital transformation bring many benefits to both tourists and travel enterprises when destination images and tourism products of Hanoi are more easily accessible. The article addresses the main issues of applying digital transformation as well as the advantages, difficulties, opportunities, and challenges of applying it to tourism development in Hanoi. Consequently, we propose solutions to overcome the challenges and perfect digital transformation application of Hanoi tourism in order that it becomes more and more develop, meeting the increasing demands of tourists.*

Keywords: *Digital transformation, Hanoi tourism.*

Tóm tắt: *Chuyển đổi số đóng vai trò quan trọng trên mọi lĩnh vực kinh tế - văn hoá - xã hội nói chung và lĩnh vực du lịch nói riêng. Thời gian qua, ngành Du lịch Hà Nội đã quyết tâm tập trung đầu tư làm mới các sản phẩm, dịch vụ, cơ sở vật chất, nhân lực, quảng bá, xúc tiến và đặc biệt là chuyển đổi số trong ngành Du lịch một cách thiết thực, hiệu quả. Những tiện ích trong chuyển đổi số mang lại nhiều lợi ích cho cả du khách cũng như doanh nghiệp lữ hành khi hình ảnh điểm đến, sản phẩm du lịch tại Thủ đô được dễ dàng tiếp cận hơn. Bài viết đề cập tới những vấn đề chính yếu của việc áp dụng chuyển đổi số cũng như những thuận lợi, khó khăn, cơ hội, thách thức của việc áp dụng chuyển đổi số đối với việc phát triển du lịch trên địa bàn Thủ đô, từ đó đề ra những giải pháp để khắc phục khó khăn, hoàn thiện việc áp dụng chuyển đổi số để du lịch Hà Nội ngày càng phát triển, đáp ứng nhu cầu ngày càng cao của du khách.*

Từ khoá: *Chuyển đổi số, du lịch Hà Nội.*

1. INTRODUCTION

Digital transformation is a comprehensive, inevitable and extremely important process for the survival and development of a country. It has taken place in all fields, from businesses to individuals. Digital transformation in Hanoi tourism industry has recently been mentioned in which have begun to be approached in some localities and businesses; however, it is still not synchronized. In particular, Hanoi tourism industry needs observing more clearly the importance and urgency of digital transformation in this context of globalization and the 4th industrial revolution. Digital technology helps tourism businesses operate compactly, quickly and efficiently. Recognizing the importance and

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benefits of digital transformation to the development of the country in general and the tourism industry in particular, we ourselves need to have synchronous and comprehensive solutions to the digital transformation for tourism industry in Hanoi.

In this study, the authors will analyze the strengths, weaknesses, opportunities and challenges of digital transformation to the development of Hanoi tourism.

2. THEORETICAL BACKGROUND

2.1. Digital transformation

The concept of "*digital transformation*" has been much recently mentioned in the mass media. What is digital transformation and how important is it in the 4th industrial revolution?

According to Deloitte (a multinational audit service nettwwork), "digital transformation is all about becoming a digital enterprise - an organization that use technology to continuously evolve all aspects of its business models (what it offers, how it interacts with customers and how it operates)". [8]

A short and easy-to-understand definition is that digital transformation is the integration of digital technologies into all fields of a business, taking advantage of technologies to fundamentally change the way of operation, business model and providing new values to that business's customers as well as accelerating business operations.

Digital transformation is also a change in the culture of businesses, requiring them to constantly change, test new things and comfortably accept failure. Not only digital transformation does play an important role in businesses, but also in other areas such as government, mass media, health care, science, etc.

In Vietnam, "*digital transformation*" is known as the process of changing from a traditional business model to a digital one by applying new technologies such as big data (Big Data), Internet of Things (IoT), cloud computing, etc. to change operating and leadership methods, work processes, and corporate culture.

2.2. Digital transformation in tourism

Digital transformation in tourism industry is the transition from traditional business and marketing models to more modern ones that focuses on improving tourist experience according to the digital value chain model basing on data base. Consequently, visitors will experience convenient, classy and memorable resort and entertainment services.

In the tourism sector, digital transformation represents a change in the way tourists travel, experience tours; tourism enterprises do business and manage tourism activities through the use of data and digital technology. In recent years, the concept of "digital transformation in tourism" has become popular and increasingly attracted attention. The strong spread of Industry 4.0 with the emergence of new technologies such as artificial

intelligence (AI), Internet of Things (IoT), big data, blockchain, and virtual reality (VR), etc. has had a profound impact on all aspects of socio-economic life.

2.3. The role of digital transformation in tourism

Digital transformation in the tourism sector plays a very important role because it brings many benefits to both businesses and customers in the tourism industry. These are some reasons why digital transformation has become necessary in the tourism sector including:

• Improve customer experience: It helps enhance customer experience by increasing convenience and flexibility in booking, payments and communication. It will be easier for customers to search, compare and order online travel service packages through applications and websites of travel businesses.

• Enhance efficiency and productivity: It helps tourism businesses optimize management and operations, save time and costs. The technologies such as artificial intelligence (AI), big data, Internet of things (IoT) and blockchain are applied to manage data, optimize operations and improve service quality.

• Create new products and services: It allows tourism businesses to create new products and services responding to market changes. For example, virtual tourism services, simulation tourism and virtual reality, etc. will bring unique experience to customers.

• Cope with new challenges: It helps tourism businesses face new challenges. Technologies can help reduce direct contact between customers and employees, improve safety and service quality, make the customer experience more positive.

In summary, digital transformation is indispensable in the tourism industry to optimize customer experience, effectively manage business operations, create new products and services, and face new challenges.

2.4. The reality of digital transformation in Hanoi tourism industry

Hanoi tourism industry identifies digital transformation as a fundamental, inevitable and long-term solution, especially in the period of developing 4.0 technology, affecting all aspects of social life.

Hanoi tourism industry has been recently considered as a pioneer, leading the transformation from traditional tourism activities to digital tourism application ones. It is also an industry that has been greatly affected by the COVID-19 pandemic in the past 3 years, so the shift in the tourism market is becoming stronger and more drastic. Digital technology plays an important role, making a positive contribution in effectively supporting management agencies and businesses in operation activities, online promotion, e-commerce, etc.

The coordination program was signed in early 2021 between Hanoi Department of Tourism and Hanoi Department of Information and Communications to improve the effectiveness of

propaganda, promotion, and application of information technology in Hanoi tourism activities in the period 2021 - 2025. Hanoi has been determined to renew the factors such as products, services, facilities, human resources, promotion and especially digital transformation in tourism industry in a practical and effective way. The benefits of digital transformation will bring many benefits to both tourists and travel enterprises in case destination images and tourism products are more easily accessible to domestic and international tourists. [3]

Recently, Hanoi Department of Tourism has actively coordinated with related agencies to implement programs and plans to apply information technology in management, as well as establish of an intelligent tourism system to improve the technological competitiveness of the tourism industry, create many services with high added value and increase convenience for people and tourists.

These include the focus on building a shared database integrated into the city's system; adding additional languages (6 languages: Vietnamese, English, French, Chinese, Japanese, Korean); operating and regularly upgrading the Hanoi tourism website to strengthen and link among tourists, enterprises providing tourism services and state-run management agencies on tourism; sharing data with technology enterprises to develop technology applications in tourism activities.

In addtion, digitization of tourist destinations using 360, FLYMCAM, and 3D technology has been deployed to bring unique, selective images and information of destinations to tourists. There have been 27 tourist attractions in Hanoi that have digitized data and images. Hanoi also promoted the implementation of propaganda the capital's tourism image on new media platforms such as Facebook, Youtube, Tiktok, as well as 3D and online platforms. This is the new method of media being in accordance with new market trends, while ensuring network safety and security. [3]

The online exhibitions and displays have recently been organized to attract visitors at Thang Long Heritage Conservation Center. The Hoa Lo Prison Relics Management Board has launched the Hoa Lo Prison Relic radio channel on the Spotify platform. The Temple of Literature and Imperial Citadel of Thang Long have now applied a QR code software system, automatic ticket gates, and guest management software to help improve the management competence of these agencies.

The Vietnam Museum of History, Vietnam Museum of Fine Arts, and National Library of Vietnam have digitized existing resources. Website building, the record of images, sounds in mp4 and jpg format, online tours, virtual reality technology, 3D graphics, etc. have brought the most authentic experiences to visitors.

Group visitors to the Temple of Literature - Quoc Tu Giam only need to buy tickets once in the form of an electronic receipt and then scan the QR code for the whole group to enter. It has been supplied by the Center for Informatics and Digital Technology

(Department of E-Commerce and Digital Economics, Ministry of Industry and Trade). It is believed that upgrading electronic receipts will actively support the operational management model of the Temple of Literature in a scientific and transparent manner, contributing to promoting heritage values, turning this historical relic into a high-quality tourist destination of the Capital in particular and the whole country in general. [2]

Furthermore, this implementation also helps improve the experience for visitors. At the same time, ticket checkers no longer have to work hard to check each ticket, nor do they need to receive tickets or tear tickets when customers get through the door as it did before. In addition, the Temple of Literature has digitized some of the contents and values of 40 categories to encode them into QR codes for visitors to explore, and deployed audio guide in 12 languages. [2]

Meanwhile, the Management Board of Thang Long Imperial Citadel has also applied QR codes for visitors to look up information about the relic in addition to automatic ticket control and guest management software. Hanoi Old Quarter Management Board builds tourism apps to introduce attractions, relics and objects to help visitors receive information actively. Bat Trang ancient village (Gia Lam district) is the first handicraft village in Hanoi to apply 3D virtual reality (VR) technology to help tourists visit the village and immerse themselves in the village festival with full traditional customs and rituals through 3D virtual space experience.

In the accommodation sector, digital technology applications are also quite popular to meet the needs of tourists. For example, SOJO Hotel Ga Hanoi (a part of the SOJO convenient hotel chain) has introduced modern information technology into management and operation. Accordingly, guests can experience rooms booking, doors opening with digital keys; usage of in-room equipment such as televisions, lights, air conditioners, curtains, etc. with applications on smartphones. It is based on the "touchless" travel trend.

With the current trend of integrating utilities on mobile devices, tourists can easily share their opinions and reviews on social networks, such as tourism forums and websites or the personal pages of visitors. Social networking sites such as Facebook, Tiktok, etc. about travel or related to travel are useful reference channels to help tourists prepare for their trips. In addtion, there are many pages and groups on facebook of Hanoi tourism such as Hanoi Tourism Review fanpage, Hanoi Travel Experience, etc. with the purpose of sharing experiences when traveling to Hanoi.

Visitors themselves can "travel via social networks" with their personal accounts to many different famous attractions in Hanoi such as President Ho Chi Minh's Mausoleum, Hoan Kiem Lake, Temple of Literature, Hanoi Old Quarter. Just use the keyword "Hanoi tourism" on the search tools of applications on social network, all pages and accounts will appear for visitors to follow and rate. Thanks to that, the information and experience of tourists will be more objective and multi-dimensional. The experience will therefore be more perfect and meaningful when choosing tourist destinations in Hanoi.

Hanoi also implemented the building and installation of wifi broadcasting stations in key tourist areas attracting a large number of tourists such as Hoan Kiem Lake area and its surroundings, President Ho Chi Minh complex, Thang Long Imperial Citadel, Temple of Literature, Hanoi Book Street, Huong Son scenic relic area, Trinh Cong Son street, Noi Bai airport waiting area, etc. to serve people and tourists.[3]

Hanoi's tourism businesses are also very actively approaching industrial revolution 4.0 to keep up with new business trends and meet the diverse tourism needs of tourists. Many businesses are improving themselves to become smart ones, successfully applying digital technology in Hanoi tourism development. Accordingly, most business activities are carried out online including: marketing, product promotion; market expansion research; customer care consultant; carry out buying - selling transactions, payments, etc.

In summary, Hanoi Tourism have researched and applied digital technology platforms quite well in exploiting and operating tourism activities, developing more diversified products and improving services to meet increasing demands of tourists.

3. METHODOLOGY

To conduct this study, the author mainly use secondary data from previous domestic and international studies on the following issues: digital transformation, digital transformation in tourism, the role of digital transformation in tourism, the reality of digital transformation in Hanoi tourism. From the collected data, the authors use the tool of SWOT to analyze opportunities, challenges as well as strengths and weaknesses of digital transformation to the development of tourism in Hanoi.

4. RESULTS

4.1. Strengths of digital transformation to the development of Hanoi tourism

Applying digital transformation into Hanoi tourism industry helps diversify tourism products and services, increase communication and promotion effectiveness by selling existing tourism products and services on digital technology platforms, thereby increasing accessibility to tourists and creating appropriate adaptation in the current context of Industry 4.0. The development of science and technology, digital platforms, and social networks makes communication and promotion activities about Hanoi tourism to be increasingly improved. Previously, communication was often done directly through the organization of seminars, fairs, product introductions, and tourism experiences. Today, with the development of science and technology, social platforms, internet systems and tourism applications, smart devices have gradually fundamentally changed communication activities in tourism.

Digital transformation in the tourism also brings better experiences to customers. They themselves can make reservation of tourism services online, and have the flexibility to customize to their individual requirements. At the same time, technologies such as

artificial intelligence and recommendation systems also support customers by providing useful information and advice.

Digital transformation in Hanoi tourism helps enterprises increase competitiveness. They can use the updated technologies to improve their service quality, attract customers and increase sales.

Using a smart data management system helps tourism businesses collect and analyze data effectively, thereby making smart decisions and adjusting business strategies.

Applying digital technologies and online applications helps tourism businesses optimize their operations, reduce time and costs, and improve employee performance. For example, travel companies can use customer management software to track tour schedules and improve their service quality.

4.2. Weaknesses of digital transforamtion to the development of Hanoi tourism

Although there are many advantages, some snags of digital transformation to the development of Hanoi tourism also need to be addressed:

Digital transformation needs to be developed on the basis of applying science - technology, communication and information technology. This is considered a prerequisite; however, the level of technological readiness for tourism development is generally not high.

Hanoi's tourism workforce being capable of applying and deploying digital transformation in operating and developing tourism activities is always insufficient both in quantity and quality. Although localities and tourism businesses in Hanoi are trying to compensate for the loss of labor force, the quality of additional human resources is an issue worrying them. There are many reasons for this, partly because the old workforce is still affected by old working habits while the newly recruited workforce from universities lacks practical experience. In addition, the current workforce lacks soft skills in applying technology and handling situations, especially in the current context.

Businesses' access to digital transformation in tourism development is still weak. The ability to access technology and apply digital transformation to tourism development among the main tourism business areas such as travel, accommodation, tourist transportation, food and beverage, entertainment, shopping is mainly concentrated in some branches including international travel, air transport, and luxury accommodation facilities. However, only leading and potential businesses have ability to promote technology application and access to digital platforms.

Although there have been many legal documents on promoting the application of information technology and communications to socio-economic as well as tourism development. Furthermore, there has recently been instruction of digital transformation in national tourism industry created by Tourism Information Technology Center, Vietnam National Authority of Tourism, the implementation process still has many shortcomings.

4.3. Opportunities of digital transformation to the development of Hanoi tourism

The opportunities of promoting digital transformation in tourism are extremely large for Hanoi tourism enterprises. The emergence of new technologies such as artificial intelligence and blockchain helps increase transparency and safety in payment transactions. Using online services not only brings convenience and ease to customers, but also enhances the competitiveness of businesses.

Digital transformation opens up new creative possibilities for Hanoi tourism enterprises, helps them flexibly respond and diversify market needs. The services of virtual tourism, simulation tourism, and virtual reality tourism are typical examples bringing customers new and exciting experiences.

Facing new challenges, it also helps tourism businesses in Hanoi become more proactive in responding to changes in the business environment, especially in difficult conditions such as economic recession, inflation, epidemic, etc. Although there are still many challenges, the growth potential of Hanoi tourism businesses is still huge providing that there is a suitable digital transformation strategy. Not only can it enhance the position of tourism industry but also improve customer experience and optimize operating costs.

4.4. Challenges of digital transformation to the development of Hanoi tourism

The process of digital transformation and application of information technology in Hanoi tourism industry has not currently been implemented in a synchronous and unified manner because there still exist differences in digital technology in the surroundings in comparison with the center.

Digitalization in the Hanoi tourism industry is taking place sporadically, lacking connectivity and effective database building. This leads to difficulties in the process of managing, controlling, reporting and data statistics in the tourism industry.

Digital transformation in tourism and many other fields in Hanoi as well also faces the lack of resources including technology, finance, and human resources having information technology expertise in which high - quality human resources and a team of skilled experts in information technology are the keys to digital transformation in the tourism. However, there have still currently been many limitations to the training system in Vietnam in quickly responding to the trend of training and developing skilled human resources for digital tourism activities.

In addition, the lack of data due to not fully updating data, reports, and analysis from many different sources creates problems hindering the digital transformation of Hanoi tourism industry.

In summary, using SWOT analysis for the current situation of digital transformation in Hanoi tourism development is extremely meaningful to both the domestic and international business plan establishment of the tourism enterprises and mangement boards of historical relics in order to satisfy their development themselves. It is vital for

them to use SWOT analysis to develop and build their private trademarks. Furthermore, it provides useful information for connecting the capabilities and resources of the businesses in the competitive environment in which they are operating.

5. DISCUSSION

From the above findings, it can be concluded that digital transformation has many strengths and opportunities to be exploited for the development tourism in Hanoi. One of the biggest advantages of SWOT analysis for the digital transformation in Hanoi tourism development is that it has no costs involved. It is an analytical process that all businessmen can reasonably complete; therefore, it does not require the involvement of experts or consultants. This is an effective method for analyzing projects and proposals in all tourism enterprises and mangement board of historical relics in Hanoi. The premise of SWOT analysis is to identify the strengths, weaknesses, opportunities and threats in the concept being analyzed. The ideal outcome for a tourism company is to maximize its strengths and minimize its weaknesses so that it can take advantage of the listed - above opportunities, overcoming the identified risks. Another benefit of SWOT analysis to is to help generate new ideas for tourism businesses and mangement board of historical relics to get more and more attraction to tourists to Hanoi. Not only does it raise awareness of potential advantages (and disadvantages) and threats as well to tourism enterprises and mangement board of historical relics in Hanoi but it can also help them respond more effectively in the future, have well-prepared plan when the risks arise.

However, the challenges coming from the external environment are very large and they require the efforts of not only the tourism industry. Therefore, here are some of the issues that need to be addressed:

It is necessary to establish and improve institutions, laws and policies to create a framework for digital economic development. This is an important basis to ensure the success of applying digital technology in tourism development.

It is vital to fully identify the important and core areas of digital technology in tourism industry to grasp and master the fields of digital data, smart materials, new generation robots, artificial intelligence, smart vehicles, smart energy; have reasonable policy solutions in application and development digital transformation. Both the government and the private sector need to make efforts to invest in upgrading digital infrastructure as well as having modern digital technology solutions to deploy smart connected digital applications and accelerate payment applications without using cash, implement effectively e-government, contributing to promoting and enhancing the effectiveness of digital technology applications in Hanoi tourism development.

There needs to be a policy to increase awareness of residents and businesses about the digital economy along with its benefits and challenges accompanied with specific contents and instructions.

It is necessary to encourage stakeholders to take part in the national tourism digital transformation strategy with the participation of many localities, related industries and fields.

Hanoi tourism industry should optimize promotion and market expansion based on advances in information technology, internet and social network.

6. CONCLUSION

In short, digital transformation plays an absolutely important role to the development of tourism industry in Hanoi. To promote this role, functional departments as well as professional associations and businesses need to closely coordinate to promote research and implement digital transformation in all fields of Hanoi tourism industry. It is also necessary to deliver a policy to raise awareness of all individuals, organizations involved in tourism industry about the importance of digital transformation in order that they feel responsible for taking part in the national tourism digital transformation strategy willingly and effectively. Moreover, basing on the mentioned - above analysis of strengths, weaknesses, challenges, opportunities of taking its advantages in applying and deploying digital transformation in Hanoi tourism industry, all the people working in tourism industry should have deeply and seriously awareness of digital transformation in order that they can shortly establish plans and strategies to apply and implement it to attract more visitors to Vietnam in the coming time.

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EXPLORING THE INFLUENTIAL FACTORS:
VIETNAMESE GEN Z'S CHOICE OF METAVERSE IN TOURISM

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Abtract: *In the aftermath of the challenges posed by COVID-19 to the tourism industry, where travel remains constrained, the metaverse presents a novel avenue for exploration. Amid limitations on physical travel, the metaverse offers tourists a means to forge a connection between their emotions and thoughts within a virtual world. Vietnam has often been perceived as lagging behind the world in terms of technological development. However, with blockchain and the metaverse, the integration of the Vietnamese people is currently accelerating, especially for Gen Z. Despite the increasing trends of a metaverse in tourism, there is not much research focusing on the factors that impact the choice of Gen Z toward tourism, especially in the Vietnamese context. The purpose of this research is to propose a conceptual framework and to explore how social presence, social self-efficacy, and feelings of loneliness may affect Vietnamese Gen Z's intention to use the metaverse in tourism. Video- based research followed by in-depth interview will be used to collect the data and analysis. Findings are expected to better inform academia, industry practitioners, and policymakers how to influence the choices of Vietnamese Gen Z towards tourism, particularly in the context of the metaverse.*

Keywords: *Gen Z; Metaverse; Metaverse in tourism; Vietnamese Gen Z.*

Tóm tắt: *Sau những thách thức do đại dịch COVID-19 gây ra cho ngành du lịch, khi du lịch vẫn bị hạn chế thì thế giới ảo mở ra một con đường mới cho việc du lịch khám phá. Trong bối cảnh hạn chế về du lịch vật lý, thế giới ảo cung cấp cho du khách một cách tiếp cận mới nhằm thiết lập một mối liên kết giữa cảm xúc và suy nghĩ của họ trong một thế giới ảo. Việt Nam thường đứng sau thế giới trong việc phát triển công nghệ. Tuy nhiên, sự tiếp nhận của người Việt với blockchain và thế giới ảo đang tăng tốc, đặc biệt là đối với thế hệ Z. Mặc dù xu hướng sử dụng thế giới ảo trong du lịch đang gia tăng, tuy nhiên không có nhiều nghiên cứu tập trung vào các yếu tố ảnh hưởng đến sự lựa chọn của thế hệ Z đối với du lịch trên thế giới ảo, đặc biệt là trong bối cảnh của Việt Nam. Mục đích của nghiên cứu này là đề xuất một khuôn khổ khái niệm và khám phá sự ảnh hưởng của "hiện diện xã hội", "niềm tin vào năng lực bản thân" và "cảm giác cô đơn" có thể ảnh hưởng đến ý định của thế hệ Z Việt Nam trong việc sử dụng thế giới ảo trong du lịch. Nghiên cứu được tiến hành theo 2 bước, những người tham dự sẽ được xem một video giới thiệu về ứng dụng du lịch ảo, sau đó sẽ được phỏng vấn chuyên sâu. Kết quả dự kiến sẽ cung cấp thông tin chi tiết hơn cho giới học thuật, các doanh nghiệp hoạt động trong ngành du lịch và các nhà hoạch định chính sách về cách ảnh hưởng đến sự lựa chọn của thế hệ Z Việt Nam đối với du lịch, đặc biệt là trong bối cảnh của thế giới ảo.*

Từ khóa: *Gen Z; Thế giới ảo; Thế giới ảo trong du lịch.*

1. INTRODUCTION

The tourism industry is undergoing a profound transformation driven by technological advancements and evolving consumer preferences. Within this landscape, Generation Z

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(Gen Z), typically born between the mid-1990s and early 2010s, emerges as a significant demographic with distinct characteristics and preferences that shape their choices in tourism. Understanding the factors influencing the intention of Gen Z towards metaverse in tourism is crucial for stakeholders in the industry to adapt their offerings effectively. This introduction explores the research gap concerning these factors, particularly in the Vietnamese context, focusing on social presence in the metaverse, feelings of loneliness, and social self-efficacy.

1.1 The metaverse and the hospitality and tourism industry

The COVID-19 pandemic has underscored the vulnerability of the hospitality and tourism sector to various shocks, both internal and external. As awareness of climate change grows, individuals are likely to consider sustainability when making decisions about accommodations and travel destinations. Factors such as increasing climate change awareness, shifts in customer preferences, generational changes, and other external influences are expected to lead individuals towards choosing sustainable hospitality businesses and favoring domestic travel over international trips. These shifts in customer attitudes may even prompt them to explore hospitality and tourism experiences in the metaverse, such as attending meetings, concerts, or visiting museums, which can offer the same benefits while reducing their carbon footprint and saving time and money. This potential change in consumer behavior emphasizes the importance of the industry's efforts to develop and provide realistic metaverse experiences, especially as technology advances and user acceptance grows. As both customers and technologies evolve, metaverse applications are likely to have a more significant impact on the industry, improving marketing strategies, enhancing customer relationships, facilitating communication, influencing customer decision-making processes, and enhancing guest experiences. Consequently, hospitality and tourism experiences in the metaverse could emerge as a major disruptor in the industry (Gursoy *et al.*, 2022)

1.2 Social presence in the metaverse

The concept of social presence, introduced by Short *et al.* in 1976, explains the perceived salience of interpersonal relationships in communication (Short *et al.*, 1976). It encompasses the 'realness' of others and the degree of intimacy felt during interactions (Karel *et al.*, 2022). Over time, social presence has become integral to computer-mediated environments, influencing various areas like online learning and gaming (Voinea *et al.*, 2022). Scholars such as Jacobson (2001) and Kear (2010) point out the importance of feeling connected and perceived as real in virtual environments while Walther (1992) emphasises the role of social presence in interpersonal interactions during communication. Recent research suggests that a higher level of social presence positively correlates with the adoption of Metaverse applications (Voinea *et al.*, 2022). The immersive nature of

3D virtual environments heightens social presence, influencing user engagement (van der Land *et al.*, 2011).

This discussion highlights the research gap regarding the impact of social presence on adoption intention of Gen Z toward metaverse in tourism.

Proposition 1: A higher level of social presence will positively impact the intention of Vietnamese Gen Z to adopt Tourism Metaverse applications.

1.3. Feelings of loneliness

Engaging in positive social interactions within the metaverse can enhance social presence and change the feelings of loneliness (Choi & Kwak, 2017). Research indicates that spending time with friends in online environments increases social presence and fosters supportive interactions, thus strengthening user connections (Della Longa *et al.,* 2022). Moreover, online gaming has been shown to strengthen both bridging and bonding social capital, facilitating weak and strong social ties, respectively (Trepte *et al.*, 2012). Bridging social capital involves weak ties that provide inspiration and information, while bonding social capital entails strong ties offering emotional support and mutual understanding (Steinkuehler & Williams, 2006). Continuation of online activities beyond the game can enhance strong social ties (Trepte *et al.*, 2012).

However, loneliness remains a significant concern, defined as a distressing feeling resulting from a discrepancy in social relations (Perlman & Peplau, 1981). Loneliness can manifest as social or emotional, reflecting deficits in social connections or intimate relationships (Weiss, 1973). Persistent loneliness negatively impacts mental health and quality of life (Williams *et al.*, 2024).

Social support in computer-mediated environments, such as online games and social media, can mitigate loneliness (Oh *et al.*, 2023). Nonetheless, a gap exists in understanding how loneliness affects intention to adopt Metaverse applications of Vietnamese Gen Z.

Proposition 2: Feelings of loneliness among Vietnamese Gen Z will positively impact their intention to use Tourism Metaverse applications.

1.4. Social self-efficacy

Social self-efficacy, a dimension of Bandura's social cognitive theory, reflects individuals' optimistic beliefs in their social abilities and influences mental health (Gecas, 1989; Connolly, 1989). In the metaverse, platforms like Roblox and Zepeto provide opportunities for social skill development, problem-solving, and mastery, fostering social self-efficacy (Vankenburg & Peter, 2008; Peterson, 2006). Research suggests that online interactions enhance adolescents' social competence, particularly for the lonely, connecting to the concept of social self-efficacy (Oh *et al.*, 2023). The research gap involves understanding how social self-efficacy impacts the intention of Vietnamese Gen

Z to adopt Tourism Metaverse applications, proposing that a higher level will positively influence adoption.

Proposition 3: A higher level of social self-efficacy will positively impact the intention of Vietnamese Gen Z to adopt Tourism Metaverse applications.

2. LITERATURE REVIEW

2.1. Metaverse

In October 2021, Facebook rebranded its corporate identity to Meta and then the term Metaverse became more familiar to everyone. At the same time, Facebook announced plans to invest at least $10 billion in the concept of Metaverse that year (Tucci, 2023).

While there is not yet a standard definition of the metaverse, according to Louis, (2022), the metaverse is *"a persistent and immersive simulated world that is experienced in the first person by large groups of simultaneous users who share a strong sense of mutual presence. It can be fully virtual (i.e. a virtual metaverse), or it can exist as layers of virtual content overlaid on the real world (i.e. an augmented metaverse)"*. (Veturebeat, 2022)

The Metaverse, like the Internet, mobile Internet, and process of electrification, is a network of interconnected experiences and applications, devices and products, tools and infrastructure. It is a *"massively scaled and interoperable network of real-time rendered 3D virtual worlds and environments which can be experienced synchronously and persistently by an effectively unlimited number of users with an individual sense of presence, and with continuity of data, such as identity, history, entitlements, objects, communications, and payments."* (Ball, 2021)

The metaverse is more than a virtual rendition of today's Internet; it surpasses it entirely, providing a platform for work, play, and communication. Its discussion spans over two decades, gaining momentum amid the COVID-19 pandemic's lockdowns and social distancing, intensifying desires for an alternate reality where individuals can interact, share experiences, and travel without restrictions.

In this realm, individuals can engage with others in real-time, breaking the barriers of time and space. The metaverse is a boundless world where any experience becomes conceivable and accessible, offering a platform for unrestricted exploration and interaction.

2.2. Metaveser and tourism

In recent times, the metaverse has become a widely discussed topic across various fields, including gaming, fashion, and notably, tourism. Particularly in the aftermath of the challenges posed by COVID-19 to the tourism industry, where travel remains constrained, the metaverse presents a novel avenue for exploration. Amid limitations on physical travel, the metaverse offers tourists a means to forge a connection between their

emotions and thoughts within a virtual world.

In this alternate reality, well-designed platforms enable tourists to virtually explore diverse locations, sometimes surpassing the allure of their real-world counterparts. This heightened presentation has a notable impact on customer purchasing behaviour, as the metaverse's stimulating effects enhance its appeal. Consequently, the development of metaverse platforms has attracted growing interest, evolving into a practical initiative within the travel and tourism sector (Tsai, 2022).

From the user experience perspective, the Metaverse is a combination of "Fully-immersive Virtual Reality" (FiVR) and "Collaborative Virtual Environments" (CVE) (Bach, 2022). Fully immersive VR in tourism is hereinafter defined as the following: "*Fully immersive VR (fiVR) isolates the user completely from the real world by providing synthetic or 360-degree real-life captured content with a VR headset, facilitating full visual immersion, and enabling virtual touristic experiences that potentially stimulate additional other senses of the user for the purpose of planning, management, marketing, information exchange, entertainment, education, accessibility or heritage preservation, either prior to, during, and/or after travel. (*Beck. et al, 2019*).

As mentioned by Beck *et al* (2019), FiVR is currently being implemented in the travel industry for planning, management, marketing, information presentation, and heritage preservation. Examples include virtual hotel tours, virtual flights, virtual landscapes, virtual museums, and virtual room booking interfaces. In the future, when integrated with CVE to form a complete Travel Metaverse, people can virtually travel to any destination worldwide and interact with others virtually. The integration of Omni-channel distribution methods in tourism can be achieved by allowing users to experience destinations before physically visiting them.

Therefore, digital spaces are evolving beyond electronic games, marking the dawn of a new era in social interaction. Numerous countries are incorporating the metaverse into their tourism campaigns. Examples include virtual tours introduced by a Swedish travel company, live-streamed safari visits offered by a luxury travel company in South Africa, and Thailand's use of Metaverse technology to revitalize its tourism sector. The city government of Seoul has announced the "Metaverse Seoul" project, envisioning the city as a "future emotional city" with iconic tourist destinations featured in a "Virtual Tourism District." Similar initiatives, like "Hoi An Metaverse" in Vietnam, aim to digitize tourism comprehensively (Bach, 2022).

Despite the global utilization of the metaverse in tourism, the success of the metaverse in this context remains uncertain, prompting ongoing exploration in this dynamic space (Bach, 2022).

2.3 Gen Z and Metaverse in tourism In Vietnam

In Vietnam, virtual reality in the tourism industry is still in its early stages. Some tourist destinations in Vietnam have embraced VR technology to provide new experiences. Specifically, the Halong Wonder Park in Quang Ninh has opened a VR gaming room, allowing visitors to explore the beauty of Halong Bay and other famous landmarks in Vietnam. In Da Nang, Quang Nam, Phu Quoc (Kien Giang), tourists can participate in virtual reality tourism at various locations, such as "My Son Metaverse" in Quang Nam or the JW Marriott Phu Quoc Emerald Bay, which has VR-equipped rooms with advanced technology.

In Can Tho, the Department of Culture, Sports, and Tourism has set out a Digital Transformation plan to revolutionise the tourism sector by 2025, with a particular emphasis on the year 2030. This strategic initiative is geared towards fostering a smart tourism ecosystem to bolster operational efficiency, enhance growth, and improve the city's tourism competitiveness. Notably, the plan emphasizes the integration of virtual reality (VR) technology, identifying it as a pivotal focus area among six key domains. The objective is to digitise all tourist destinations, products, cultural, and entertainment events within the region, with a targeted endeavor to create immersive 3D experiences (VR360) at various attractions. Among the initial trial sites earmarked for this transformation are the Hung King Temple, Ninh Kieu Quay, Cai Rang Floating Market, Binh Thuy Ancient House, and the Memorial Area for the Valedictorian Bui Huu Nghia (Ministry of Culture, Sports and Tourism of Vietnam, 2023).

The anticipation that the Metaverse will provide a significant opportunity for the tourism sector revolves around the concept of offering users a "try before you buy" experience, empowering them to make informed destination choices through virtual exploration before embarking on physical visits. Additionally, virtual travel holds immense appeal for individuals who may have travel aspirations but are constrained by financial limitations, with the Metaverse offering a cost-effective avenue to realise those aspirations. However, while the rise of digital technologies like the Metaverse, virtual reality, and augmented reality is inevitable in the tourism sector, some experts caution that the integration of non-fungible tokens (NFTs) presents new challenges that require further study.

Despite the optimistic vision presented by some industry leaders, it may still be some time before the virtual universe becomes a mainstream reality. As technology continues to evolve, the necessity and practicality of fully embracing the Metaverse remain uncertain, despite the assertions made by Facebook's CEO.

2.4 Metaverse and Gen Z

Generation Z includes individuals born from 1996 to 2010. This group's characteristics have been influenced by the digital era, concerns about climate change, and changes in financial situations (Mckinsey, 2023).

As grew up in a world of high-tech innovation, where information is instantly accessible, and social media is increasingly prevalent. Therefore, Gen Z can actively expand knowledge and learn based on the abundant information at their fingertips. However, a significant portion of this generation is becoming overly dependent on technology, losing the ability to engage in traditional information-gathering methods such as reading books, surveys, and face-to-face communication (Ipsos, 2022).

Additionally, tendency towards independence but prone to isolation: Gen Z has a strong desire for independence, personal autonomy, and financial independence. They often start part-time jobs early in their university days to support themselves. Some take risks to start their ventures or engage in business early on. As a result, this generation may face challenges to mental well-being due to spending too much time on the Internet and dedicating less time to nurturing meaningful relationships.

Research on the 'State of Gen Z' reveals that a whopping 95% of Gen Z own smartphones, 83% own laptops, 78% own advanced gaming consoles, and 57% own desktop computers. In today's conditions, it's clear that brands have a significant opportunity to reach Gen Z in the online environment (Jason Dorsey, n.d.) In particular, many studies have also shown that 72% of Gen Z primarily use the Internet for entertainment: videos, apps, news, etc.; 51% of Gen Z rely on the Internet to connect with others daily. They prefer interactive content such as live streams on Facebook to engage in comments and share emotions (Jason Dorsey, n.d.)

Moreover, in the current context, Gen Z is a generation exposed to and strongly attracted by modern technology-driven media activities such as Augmented Reality (AR), Virtual Reality (VR), and Interactive Technology (Interactive Website; Interactive Space; Interactive Livestream, etc.). These technologies are leading trends in the market, not only fostering interesting interactions between brands and customers but also capable of generating positive emotions during the experience. (Advertising Vietnam, 2021).

Despite the growing trend of Gen Z's engagement with the metaverse, there remains a notable gap in research exploring the behavior of Vietnamese Gen Z individuals towards the metaverse, particularly within the context of tourism.

3. RESEARCH METHODOLOGY

This research will use the video- based research followed by in-depth interview to collect the data and analysis. 10 Vietnamese gen Z will be selected for the interview after watching the video introducing about the metaverse application in the tourism context.

The utilisation of video-based research followed by in-depth interviews represents a effective methodology for exploring complex phenomena in a comprehensive manner. This approach allows researchers to capture both the visual stimuli and the nuanced insights provided by participants, thereby facilitating a deeper understanding of human behavior and experiences. By incorporating video stimuli, researchers can effectively engage participants in real-life scenarios or experimental conditions, enabling them to observe natural reactions and behaviors in a controlled setting. Video-based research provides a valuable platform for studying various aspects of human cognition, emotion, and interaction, as it offers rich visual information that may not be fully captured through traditional survey or observation methods alone (Saldaña, 2021).

Following the video viewing, in-depth interviews offer an opportunity for participants to reflect upon their experiences, articulate their thoughts and feelings, and provide context to their reactions (Rubin & Rubin, 2011). The open-ended nature of qualitative interviews allows researchers to explore participants' perspectives in depth, uncovering underlying motivations, beliefs, and cultural influences that shape their responses (Seidman, 2006). Moreover, interviews enable researchers to probe into specific areas of interest, clarify ambiguous points, and stimulate rich narrative data that enhance the richness and depth of the findings.

By combining video-based research with in-depth interviews, researchers can triangulate data from multiple sources, thereby strengthening the validity and reliability of their findings (Creswell & Poth, 2016). This methodological approach fosters a holistic understanding of the research phenomenon by capturing both observable behaviors and subjective experiences, while also allowing for flexibility and adaptability to the unique context of each study (Braun & Clarke, 2019).

4. CONCEPTUAL FRAMWORK AND RESEARCH PROPOSITIONS

4.1. Theory of planned behaviour

To explain the relationship between intention and behaviour, Ajzen (1991) presents a theory of planned behaviour (TPB) which is " designed to predict and explain human behaviour in specific contexts" (Ajzen, 1991, p.181).

TPB, which extends the theory of reasoned action, proposes that the intention to behave in a certain way, a fundamental factor in determining behaviour, is influenced by attitude, perceived behavioural control (PBC), and subjective norm (SN) (Ajzen, 1991). TPB introduces PBC as an additional determinant of both intention and behaviour. This aspect relates to individuals' beliefs about the extent of control they have over their own actions (Ajzen, 1991). It has been extensively applied in research on tourist behaviour, including the intention to engage in virtual reality experiences (Huang, 2023).

In the realm of metaverse tourism, SN refers to the perceived social pressure to partake in this emerging form of tourism. If an individual's social circle approves of and engages in metaverse tourism, they may feel compelled to follow suit and thus be more inclined to intend to participate themselves. Furthermore, attitudes toward metaverse tourism reflect a tourist's favourable or unfavourable evaluation of the concept, which can significantly influence their intention to engage with it. For instance, if a tourist views metaverse tourism as exciting and innovative, they are likely to hold a positive attitude toward it and thus have a greater intention to participate. Finally, PBC denotes a tourist's perception of their ability to partake in metaverse tourism, which can also impact their intention to do so. For example, if a tourist believes they possess the requisite technological skills and resources to engage, they are more likely to intend to participate.

4.2. Social presence in the metaverse

The concept of 'social presence' was firstly introduced in the book The social psychology of telecommunications by Short et al. in 1976 when there was no Internet yet and all communication could happen relying on communication media such as video, audio. Social presence was defined as the "degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationship" (Short *et al*, 1976, p.65). The authors emphasised the first part of the definition as the 'realness' of the other persons and the social presence can be determined by the level of which the other person is seen as a 'real person'. The second part is the consequent as well as purpose of the first part which is elaborated as the degree to which individuals perceive intimacy, immediacy, and their particular role in a relationship (Karel *et al*., 2022). Through communication media, social presence depends upon not only the visual, non-verbal cues transmitted but also more subtle aspects such as the apparent distance of the other (influenced, perhaps, by voice volume) and the 'realness' of the other (influenced, perhaps, by the fidelity of speech reproduction) (Short *et al*., 1976). Surprisingly, Short et al.'s prediction of the technology advancement that could reach the highest form of a physical realness of the other by virtual three-dimensional representation of a person becomes true (Karel *et al*., 2022).

In computer and Internet era, the concept of 'social presence' has evolved and plays a pivotal role in computer mediated environments like online learning, online assisted shopping, teleconferences, gaming, assisted driving (Voinea *et al.*, 2022). Some advocate for this 'realness' aspect of the person, such as Jacobson (2001) who portrayed social presence as the "sense of being perceived as real when participating in a computer-mediated environment" (p. 653) and Kear (2010) who associated social presence "to the need for users to feel connected with each other and to perceive each other as real people" (p.531). Other authors expand the 'interpersonal relationship' aspect. Walther

(1992) described social presence as "the degree to which users can feel other's presence in the result of interpersonal interactions during the communication process" (p.54). Beldarrain (2006) questioned whether emerging technologies such as wikis, blogs, or podcasts inhibit or increase social presence as "current trends indicate that social presence differs from interaction, yet one nurtures the other" (p. 149). In the context of online communication, literature highlights that there was a lack of social presence. If there is social presence, participants feel that they are communicating with real people, even though the communication is mediated by communication technologies (Lombard & Ditton, 1997). This leads to the further investigation of the concept 'presence'.

The concept of 'presence' is thoroughly discussed in Lombard & Ditton (1997) article as "the extent to which a medium is perceived as sociable, warm, sensitive, personal or intimate when it is used to interact with other people" (p.2). Presence is described in six dimensions as social richness, realism, transportation, immersion, social actor within medium, and medium as social actor. The idea of transportation identifies three distinctive types: "You are there" (the user is transported to another place); "It is here" (another place and the objects within it are transported to the user); and "We are together" (two or more communicators are transported together to a place that they share). The "You are there" concept is usually employed in context of virtual reality (VR), which takes users to a virtual environment that they believe their real bodies are in that world. In "It is here", users believe that they could touch the object or feel like what they see and hear was happening to them. "We are together" concept is widely exercised in online meeting, video conferencing, chat room and VR when users feel like they are in the same room, share the same space or gather in a shared virtual space that is different from any individuals' "real environments".

On the other hand, the fourth conceptualisation of presence refers to perceptual and psychological immersion. Perceptual immersion is "the degree to which a virtual environment submerges the perceptual system of the user" (Biocca & Delaney, 1995, p. 57). The psychological component is relating to "when users feel immersive presence they are involved, absorbed, engage, engrossed" (Lombard & Ditton, 1997). In virtual worlds, different immersive technologies share a common goal to promote social interactions by creating strong friendships and emotional relationships, serve the social needs of the users and increase social presence (Cole & Griffiths, 2007; Biocca, Harms, & Burgoon, 2003). Therefore, social presence should be a significant determinant of user engagement in the virtual social environment and interfaces (Biocca, Harms, & Burgoon, 2003).

Research in the field of Metaverse has shown that higher level of social presence could enhance the adoption of Metaverse in applications (Voinea *et al.*, 2022). In comparison to the text-based communication platforms, the 3D virtual environment in the metaverse

can provide a unique communication opportunity to the users through the heightened sense of social presence. This was confirmed in a study by van der Land *et al*. (2011) in the context of team collaboration in 3D virtual environment that creates a high level of stimuli, experience and feeling enhancing the user's immersion into virtual environment. 3D virtual environment tends to stimulate involvement and realism as visual cues become helpful for users to process information. It is noteworthy that immersion and involvement play a pivotal role in shaping the concept 'presence', according to Witmer & Singer (1998). In addition, higher level of interactivity can be found in 3D virtual world by tools that allows them to interact with the environment (van de Land, 2011) and interact among users by enhancing participants' motivation to sustain positive impression and obtain social approval from other participants (Lee & Park, 2014).

4.3. Feelings of loneliness

Engaging in positive social interactions in the metaverse not only enhance social presence but also reduce sense of social disconnection with the outside world and loneliness. Spending time with friends is likely to increases social presence (Choi & Kwak, 2017) and promote supportive interactions, therefore enhance user connections (Della Longa *et al.*, 2022). In a study of online gaming, social proximity and mutual familiarity were tested to whether significantly strengthen bridging and bonding social capital (Trepte *et al.*, 2012). Bridging social capital is related to weak social ties as a source of people inspiration and their feeling of being informed. Bonding social capital on the other hand is related to strong social ties that convey emotional support and mutual understanding (Steinkuehler & Williams, 2006). This study confirms that online gaming is likely to enhance strong social ties when online activities and possible offline activities continue beyond the game (Trepte *et al*., 2012). According to Depping et al. (2018), in-game social capital also lower feelings of loneliness and raise satisfaction of relatedness.

Loneliness is defined as a "unpleasant and distressing" feeling, a "subjective phenomenon" that occurs when there is a "discrepancy between a person's social relations", such as the quality of the relationships or the lack of a particular relationship (Perlman & Peplau, 1981, p32). In terms of typologies, Moustakas (1961) distinguished between loneliness anxiety and existential loneliness. Loneliness anxiety is a negative form and "aversive and results from a basic alienation between man and man". Whereas existential loneliness is a positive form and an "inevitable part of the human experience, involving periods of self-confrontation and providing an avenue for self-growth", Moustakas (1961) cited in Perlman & Peplau (1981, p33). Weiss (1973) classified loneliness into different dimensions as social loneliness and emotional loneliness in which social loneliness refers to a deficit in social relations and a lack of senses of community while emotional loneliness refers to a consequence of the absence of personal and intimate relationship. Loneliness is

a common experience; however, permanent loneliness and social isolation tend to reduce quality of life and mental health, Weiss (1973) cited in Williams *et al.* (2024). In all different forms of loneliness, the experience seems to be emotionally intense.

Social support is believed to prevent loneliness and depression and computer-mediated social support may result in similar effects compared to face-to-face support. Such mediated environment as online games, communities and social media could produce an amount of supportive interaction in which people participate in the metaverse is negatively connected to their loneliness feelings (Oh *et al.*, 2023).

4.4. Social self-efficacy

Self-efficacy is proposed as one component in Bandura's social cognitive theory and perceived as one kind of assessments of self with regard to competence, effectiveness and causal agency (Gecas, 1989). Self-efficacy is related to individual's belief in their ability and therefore having optimistic self-belief in their ability to accomplish tasks and tackle challenges in societies (Zhang *et al.*, 2024). Therefore, self-efficacy is an important concept that is related to mastery, self-reliance and achievement. Social self-efficacy focuses on the social dimension of self-efficacy. In the context of adolescence, Connolly (1989) found that social efficacy has a linkage with behaviour and social environment that contributes to mental health condition. Social self-efficacy may play a mediator role between loneliness and supportive interaction in the metaverse (Oh *et al.*, 2023).

Many social skills, problem solving, challenges for achievement and mastery can be found in metaverse. Roblox becomes popular for young adults as friends could play games together and cooperate to achieve an award or medal. Zepeto allows users to visit same places and take photos together as in the real life. On the other hand, supportive interaction in metaverse is argued to associate with social self-efficacy (Oh *et al.*, 2023). Vankenburg & Peter (2008) found that online communication benefits on adolescents' social competence, particularly lonely adolescents. In online environment, opportunity to communicate with people at different ages and from different cultural background allows young users having new relationships, expanding their interaction skills from dealing with other people, which in turn enhance their social self-efficacy. Non-native speaker interaction in a 3D virtual world reveals that participants were able to undertake a variety of tasks and became more confident in building social connection that is favourable to themselves (Peterson, 2006).

4.5. CONCEPTUAL FRAMEWORK

Based on the Theory of Planned Behavior, which suggests that attitudes influence intentions, this study aims to investigate how social presence, social self-efficacy, and feelings of loneliness may affect Vietnamese Gen Z's intention to use the metaverse for

tourism. Generally, individuals with a strong perceived behavior control are more likely to have a firm intention and can turn that intention into action (Ajzen, 1991).

Proposition 1: A higher level of social presence will positively impact the intention of Vietnamese Gen Z to adopt Tourism Metaverse applications.

Proposition 2: Feelings of loneliness among Vietnamese Gen Z will positively impact their intention to use Tourism Metaverse applications.

Proposition 3: A higher level of social self-efficacy will positively impact the intention of Vietnamese Gen Z to adopt Tourism Metaverse applications.
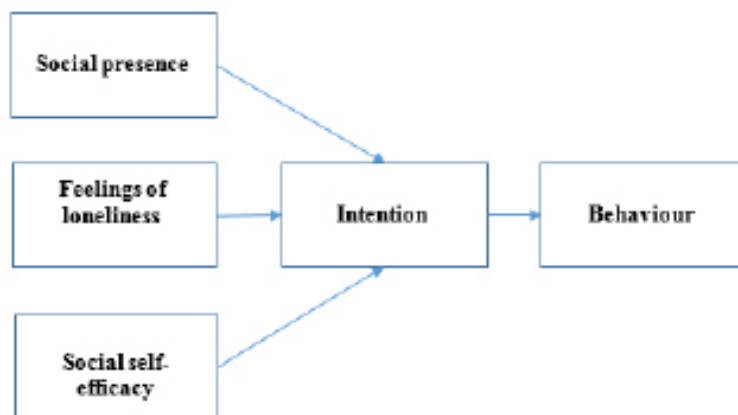
Figure 1. Proposal conceptual model

4. CONCLUSION

In conclusion, this research aims to address the research gap concerning the factors influencing the choices of Vietnamese Gen Z towards tourism, particularly in the context of the metaverse. By focusing on social presence in the metaverse, feelings of loneliness, and social self-efficacy, this study seeks to provide a comprehensive understanding of the evolving landscape of tourism preferences among Vietnamese Gen Z. Through theoretical analysis and empirical investigation, this research endeavors to contribute valuable insights to academia, industry practitioners, and policymakers, ultimately shaping the future of tourism in Vietnam.

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IMPACT OF SMART TOURISM TECHNOLOGIES ON GEN Z TOURISTS' EXPERIENCE WITH THE "ESSENCE OF EDUCATION" NIGHT TOUR PROGRAM AT THE TEMPLE OF LITERATURE, HANOI

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Abstract: *The "Essence of Education" night tour program held at the Temple of Literature in Hanoi is the sixth night tour in the series of night tour programs applying "smart tourism technology". The application of "smart tourism technology" has been proven to bring great attraction to tourists in general and especially for Gen Z tourists (1997 - 2012). Of the six night tour programs mentioned above, the program "Essence of Education" at the Temple of Literature is a pioneer in using a variety of smart technologies including: 3D mapping projection technology, A.I technology, and virtual reality system through VR glasses. The study conducted a survey of 250 Gen Z travelers to learn about tourists' evaluation of the application of smart tourism technologies at the heritage destination of the Temple of Literature. The findings indicate that smart technology-enhanced experiences are impacted by accessibility and engagement. The perceived value of smart technologies by tourists is positively correlated with their level of satisfaction. Therefore, the study provides practical recommendations as well as directions for future research.*

Keywords: *Smart tourism technologies, heritage sites, gen Z tourists, tourists' experience, Hanoi.*

Tóm tắt: *"Tinh hoa đạo học" được tổ chức tại Văn Miếu - Quốc Tử Giám là chương trình du lịch đêm thứ sáu của Hà Nội bên cạnh năm chương trình trải nghiệm đêm nằm trong chuỗi các chương trình du lịch đêm áp dụng "công nghệ du lịch thông minh". Việc áp dụng "công nghệ du lịch thông minh" đã được chứng minh mang lại sức hút lớn đối với khách du lịch nói chung và đặc biệt thu hút với du khách thế hệ Gen Z (1997 - 2012). Trong sáu chương trình du lịch đêm kể trên thì chương trình "Tinh hoa đạo học" tại Văn Miếu - Quốc Tử Giám tiên phong trong sử dụng đa dạng các công nghệ thông minh bao gồm: công nghệ trình chiếu 3D mapping, công nghệ A.I và hệ thống thực tế ảo qua chiếc kính VR. Nghiên cứu thực hiện khảo sát 250 du lịch Gen Z để tìm hiểu về đánh giá của du khách với việc áp dụng các công nghệ du lịch thông minh tại điểm đến di sản Văn Miếu - Quốc Tử Giám. Kết quả nghiên cứu cho thấy khả năng tiếp cận và tương tác với các "công nghệ thông minh" tại điểm đến di sản có tác động mạnh mẽ nhất tới trải nghiệm khách du lịch Gen Z và đánh giá của du khách có ảnh hưởng tới sự hài lòng của họ. Từ đó, nghiên cứu đưa ra các khuyến nghị mang tính thực tiễn cũng như định hướng cho các nghiên cứu trong tương lai.*

Từ khóa: *Công nghệ du lịch thông minh, điểm đến di sản, khách du lịch Gen Z, trải nghiệm của khách du lịch, Hà Nội.*

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1. INTRODUCTION

On April 11, 2023, the General Department of Tourism issued Decision No. 553/QD-TCDL on Plan to implement the Project "Application of technology of industry 4.0 to develop smart tourism, promote tourism become a key economic sector" according to Decision No. 3570/QD-BVHTTDL dated December 21, 2022 of the Ministry of Culture, Sports and Tourism. Applying technology of the Fourth Industrial Revolution to develop a smart tourism ecosystem in Vietnam, meeting the increasing needs of tourists in the digital age, supporting effective connections between state management agencies in charge of tourism, businesses, tourists and related entities. Thus, it can be seen that applying smart tourism technology to smart tourism development is a prerequisite work and strategy of the Party and State of Vietnam.

Hanoi has launched six night tour programs to start a series of activities to orient the development of Hanoi's night tourism, not only helping to "awaken monuments and heritage" but also contributing greatly to the development of Hanoi night tourism and national economic development, as of November 2023. Night tourism products and programs have been invested in and renewed in terms of content and form. Some products have been newly built and introduced for the first time. In particular, night tourism products at heritage destinations are renewed by applying "smart tourism technologies" to help increase tourist experiences, enrich and diversify Hanoi's night tourism products. From the above reality, it is necessary to have research to systematize and continuously update changes in the exploitation and use of "smart tourism technologies" in night tourism programs at heritage sites in big cities in general and in Hanoi in particular.

We approach our study from the viewpoint of the tourist, emphasizing the technologically enhanced experience. By investigating the unique features of these smart technologies in the context of a Hanoi heritage site, it advances knowledge of the actual content and practical application of smart tourism technologies (STTs). The objectives are to improve the satisfaction and experience of Gen Z tourists while also maximizing resource management efficiency.

The night tour at the Temple of Literature was chosen as the case study for three reasons, namely: Firstly, it has been classified as a special national relic and 82 doctorate steles have been recognized by UNESCO as "World Documentary Heritage" in 2013. Compared with five other night tours at three different heritage sites, the implementation of smart tourism technologies in the Temple of Literature is more advanced and diverse. Moreover, the Temple of Literature has become one of the representatives of Vietnamese education. Especially, in 2023, the Temple of Literature received about two million visitors and was named as "Hanoi key relic sites in 2023".

2. THEORETICAL BACKGROUND/LITERATURE REVIEW

2.1. Smart tourism technologies

According to many researchers, the term "Smart tourism technologies" (STTs) refers to a range of services and technologies, including social networking sites, mobile payment systems, cloud computing, artificial intelligence (AI), mobile communication, radio frequency identification devices (RFID), smart devices, augmented reality (AR), virtual reality (VR), and tourism-related platforms (Shen, 2020; Huang et al., 2017; Gretzel, 2015). In this study, smart tourism technologies (STT) refers to all types of technology related to connecting, synchronizing, and sharing for travel (Gretzel, Sigala, et al., 2015). They can be smartphone apps, websites, and destination smart infrastructure.

In line with the research results from Huang et al., (2017), we believe that STT comprises four key attributes: informativeness, accessibility, interactivity, and personalization, which tourists can use for information search, transaction, communication, and content generation to improve the usability and perceived usefulness of the technologies (Zhang et al., 2022). By integrating technology into tourism experiences, destinations can provide more personalized and efficient services to their visitors, ultimately enhancing their overall satisfaction (Buonincontri & Micera, 2016). Overall, the literature indicates that STT enriches tourists' experiences, satisfaction, and behavioral intention (Li et al., 2021).

2.2. Attribute of smart tourism technologies

STTs refer to applications that enhance the tourism experiences and generate added value (Neuhofer et al., 2015). The extant literature has explored the separate impact of specific STTs on the tourism experience. Likewise, AI contributes to the elaborate design of products and experiences that conform to consumer preferences based on big data processing (Gretzel & Zheng, 2020). Mobile technology offers tourists more convenient conditions since they can use smartphones, tablets, or other mobile devices to contact any person at any time from anywhere to interact and share experiences (Kim & Tussyadiah, 2013). Various online social platforms and social media have become the main places for tourists to share travel-related information and have changed the way tourists share their experiences. Similarly, AR and VR technologies allow tourists to experience interactive computer-supported environments (Tussyadiah, 2018). STTs affect tourists' opinions and perceptions and influence their behavioral intention [19]. The study by Buhalis et al., (2015) suggested a conceptualization of STT attributes that include four key elements - information, accessibility, interactivity, and personalization.

- Information: Information is the combination of qualitative, credible, and accurate input and comments generated by tourists about tourism destinations and suppliers/ attractions (Huang et al., 2017). Kim and Hiemstra pointed out that information quality plays an essential role in tourists' perception about destinations and attractions (Kim et al., 2004). Likewise, information reliability is critical at the initial search stage (Chung &

Koo, 2015). By utilizing STTs, it is easy for tourists to expand the depth and breadth of relevant tourism information. Such information is very helpful for gathering inspiration, decision-making, and enjoying the experience of visiting an attraction. In summary, the attribute of information is a valuable dimension of STTs and significantly contributes to achieving better efficiency and effectiveness in decision-making by tourists.

- **Accessibility:** Tourists obtain and use travel-related information using different types of STTs. Accessibility refers to the degree of difficulty of tourists to access and use tourism information provided by tourism destinations/suppliers through various STTs (No & Kim, 2015). High-quality accessibility of STTs facilitates the task for tourists, thereby improving the perceived ease of use of STTs. When STTs are easy to access and use, tourists will relish using these digital technologies to obtain information at all stages of their trips and visits. In doing so, tourists acquire the means to enhance their experience and level of satisfaction (Ho & Lee, 2007).

- **Interactivity:** Another facilitating attribute is interaction. Interaction between involved stakeholders is what is referred to as STT interactivity. According to Huang et al., (2017), the interactive nature of STTs can enable prompt and dynamic bidirectional correspondence among those involved. Information seeking is made much easier by the interactive feature. Visitors are compelled by the high degree of involvement to actively use STTs and offer feedback and comments (Tan et al., 2018). An important and favorable influence on the seamless operation of the tourism experience is the ultimate result of this component.

- **Personalization:** According to Madu et al., (2002), customizing services can satisfy tourists' demands for unique experiences while optimizing their enjoyment of tourist locations and attractions. Customized services decrease the opportunity cost and duration of information searching, which enhances visitor happiness, according to research by Schaupp and Bélanger (2005). According to Park and Gretzel's (2007) research, providing tailored services raises tourists' awareness of their offerings. According to Jeong and Shin (2019), STTs gather consumer behavior data to gain a better understanding of the habits and preferences of their target audience. This information is then used to present them with offerings and goods that are acceptable and suitable.

Visitors' perceptions of STTs play a crucial role in the tourism experience and are a predicate that influences their happiness and intention to behave (Carbonell et al., 2015; Kim, 2018). It is crucial to comprehend how tourists view STTs as a result. The impact of STTs' four aforementioned characteristics - information, accessibility, interaction, and personalization - on the perceived worth of visitors' experiences is assessed by this study.

2.3. Gen Z tourists with smart tourism technologies

Travelers of the Gen Z demographic (1997-2012) are particularly interested in smart tourism technology applications at travel sites. Furthermore, Gen Z tourists' experiences

will be greatly enhanced by smart tourism technologies, resulting in improvements to their mental, emotional, and physical well-being (Ding et al., 2022; Tseng et al., 2021). By implementing smart technology to improve the response to progressively varied, rich, and customized needs, smart destinations become more appealing to Gen Z travelers (Haddouche & Futures, 2018; Harrison, 2011).

According to Haddouche and Futures (2018), Gen Z travelers are prepared to utilize smart tourism technology to share their travel experiences on social media, engage with other travelers, and plan their vacations on smart mobile devices. In order to connect, use, and access smart tourism technologies, Gen Z travelers currently frequently use smartphones to research, compare, and assess high-quality goods, services, and travel locations. By increasing the co-creation space of smart city destinations, applications for smart tourism technology help develop innovative methods to improve the quality of experience for Gen Z tourists (Ding et al., 2022).

Smart tourism technology is even more crucial for Gen Z travelers since it greatly influences their choice of destination and their interactions with it. Before making decisions, Gen Z tourists typically use smart tourism technology to research a destination (Ding et al., 2022; Ordóñez et al., 2020). Additionally, Gen Z travelers use smart travel apps in an effort to co-create value products at a smart destination and improve the quality of their experiences.

In addition, smart tourism technologies are an essential component of the experience and are indispensable to tourist-related activities. During their travels, Gen Z travelers use smart travel technology applications to experience and customize their own travel plans based on their own needs, access information at the destination, and assess hotels, restaurants, and mobile payment options via smartphone. Scholars have acknowledged the promise of smart travel technologies and anticipate that, in the future, Gen Z travelers will utilize these technologies extensively and more heavily influence their travel experiences (Barbe & Neuburger, 2021; Wiastuti et al., 2020).

2.4. The Night tour in Temple of Literature

- **The night tour:** The night tour in the Temple of Literature was officially launched on October 29, aiming to provide visitors with new and unique experiences. The tour is open from 7.20 p.m to 8.30 p.m on Wednesdays, Saturdays, and Sundays. Other night tours are offered at Hoa Lo Prison relic, Thang Long Imperial Citadel relic, and the Vietnam Museum of Literature. The Temple of Literature Temple of Literature tour start at the Great Portico with a sound and light show that uses 3D mapping and folk music to recount the history of Vietnamese culture and education. Visitors to the tour shared: "I was impressed with the image of a young boy studying. Then came a story about the boy growing up. I've been to the Temple of Literature several times during the day. This is the

first time I've been here at night, which is a very different experience of light and sound."

As soon as they step through the main gate of the Temple of Literature, visitors are immersed in a magical space.

The Constellation of Literature Pavilion presents performances of traditional music, the Laureate Stelae Garden memorializes the line of scholars who studied here, and Great Success area uses virtual reality (VR) technology to recreate the ancient Temple's examination hall. This VR technology lets visitors try their hand at writing *Chu Nom*, a script based on Chinese characters that the ancient scholars used.

There, each individual will create their own calligraphy work or freely adapt random drawings and images against the sparkling starry sky. The centerpiece of the tour is Thai Hoc Hall and its presentation on the theme of "The essence of education."

Thai Hoc hall is transformed on the theme of "*Tinh hoa dao hoc*" (Essence of Education), by the sparkling lighting system and 3D-mapping technology, telling the stories about Confucianism, as well as the history of the first Vietnamese imperial university. The night tour's key highlights the centerpiece of the "Essence of Education" performance. To assist guests in learning about the most fundamental principles of Vietnamese education, the front portion of the Thai Hoc Hall is transformed into a massive screen. (Source: VOV5, the voice of Vietnam - VOV world)

The night tour at the Temple of Literature was chosen as the case study for three reasons, namely: Firstly, it has been classified as a special national relic and 82 doctorate steles have been recognized by UNESCO as "World Documentary Heritage" in 2013. Compared with five other night tours at three different heritage sites, the implementation of smart tourism technologies in the Temple of Literature is more advanced and diverse. Moreover, the Temple of Literature has become one of the representatives of Vietnamese education. Especially, in 2023, the Temple of Literature received about two million visitors and was named as "Hanoi key relic sites in 2023".

- Smart tourism technologies for the night tour: Compared with five other night tours at three different heritage sites, the implementation of smart tourism technologies in the Temple of literature is more advanced and diverse.

Table 1. Using smart tourism technology systems at the Temple of Literature

Heritage sites	Name of the tour	Smart tourism technologies
Temple of literature	Essence of Education	1. Sparkling lighting system and sound techniques
		2. Modern 3D mapping technology
		3. Mapping presentation
		4. Virtual reality technology (VR)

3. RESEARCH DESIGN AND METHODOLOGY

Previous studies have shown that services provided by STTs at heritage sites has an important influence on tourists' experience. Travelers' perception of the value of STTs is based on their assessment of how well the infrastructure and services offered by STTs satisfy their needs and expectations throughout their experience with them. This study investigates the perceived value of four features, included information, accessibility, interaction and personalization as viewed by tourists, based on the attributes of STTs' attributes. In the context of visitor attractions, this study makes the following assumptions based on this rationale. The research constructs and measurement scale (Table 2) were adapted and modified from previous studies (Lee et al., 2018; Yo al., 2017; No & Kim, 2015).

Table 2. Research constructs and measurement scale

Variable	Measurement Items	Supporting Studies
Information	STTs provide qualitative, credible, and accurate information	
Accessibility	STTs are easy to access and use	
Interactivity	STTs are interactive	Lee et al. (2018); Yoo al. (2017); No & Kim (2015)
Personalization	STTs offer customized information that meet tourists' requirements and needs	
Perceived Value of STTs	Considering the time, efforts and money, it is worthy to use STTs	

There are three parts in the survey, the first part is the demographic and behavioral characteristics of the sample; the second part is information about the night tour and how Gen Z tourists know about that tour, how to book and pay for the night tour; Gen Z tourists' evaluation of four attributes of smart tourism technologies in the Temple of Literature night tour. In part three, four key elements of smart tourism tecnnologies are evaluated by Gen Z travellers, includes - information, accessibility, interactivity, and personalization. For the questions in this part, a five-point Likert scale is used, in which 1 - Strongly disagree; 2 - Disagree; 3 - Neutral; 4 - Agree; 5 - Strongly agree.

We surveyed Gen Z tourists who have participated in the night tour at the Temple of Literature from November to December 2023. The QR code of this survey was provided to Gen Z tourists to make it more convenient for users. Gen Z tourists can complete the survey online by using their phones to scan codes. The night tour at the Temple of Literature has implemented many smart tourism initiatives to enhance tourists' experience. In the Temple of Literature, the use of technology has improved the travel experience for visitors by making it easier for them to access information, increase tourists' ability to interact with the heritage site, and enhance the overall quality of the tourists' satisfaction. This heritage site has also implemented a smart tourism system that includes free Wi-Fi

hotspots that use QR codes to provide visitors with information about historical sites. A total of 250 questionnaires were collected, including 218 valid questionnaires used for data analysis of this study (counted for 87.2%).

4. RESULTS

The demographic and behavioral characteristics of the sample are presented in Table 3 The survey results obtained 218 responses from Gen Z tourists joining the night tour at the Temple of Literature, with 93 people having master degrees (accounting for 43%) and 74 university students (accounting for 34%). This result shows that a proportion of Gen Z tourists with high education levels have favorable conditions to access smart tourism technologies, which is the basic need for increasing their experience at the heritage site. The results also show that people working in the public sector (24.3%) are more concerned about the night tour than in the private sector (18.3%). 85.3% of Gen Z tourists travel to heritage sites twice (22%), three times (23.4%), especially those traveling more than three times or more, accounting for 39%, while only 14.7% of Gen Z travel to heritage sites once a year.

However, in Table 3, it is quite clear that most Gen Z tourists have been to heritage sites with smart tourism technologies once (65.1%) to twice (26.2%) before the night tour in the Temple of Literature, and 8.7% of them have been to heritage sites with smart tourism technologies three times or more.

Table 3. Sample population characteristics (n = 218).

Characteristics	Frequency (n)	Percentage (%)
Gender		
Male	98	41.0
Female	129	59.0
Educational level		
Up to high school	51	23.0
College/University	74	34.0
Graduate School	93	43.0
Your Occupation		
Student	125	57.4
Private sector employees	21	9.6
Private sector managers	8	3.7
Public sector employees	41	18.8
Public sector managers	12	5.5
Self-employed	11	5.0
Frequency of travel to relic/heritage sites per year		
Once	32	14.7
Twice	48	22.0

Three times	53	24.3
More than three times	85	39.0
Number of visits to relic/heritage sites with smart tourism technologies		
Once	142	65.1
Twice	57	26.2
Three times or more	19	8.7

Table 4 shows that more than half of Gen Z tourists knew about the "Essence of Education" night tour at the Temple of Literature from social networks (Facebook, Tiktok) (54.6%) and 31.2% from their friends, relatives, or co-workers. So it is clear to see that advertising on social networks can easily reach a wide range of young generations beyond word-of-mouth. 44.9% and 37.6% of Gen Z travelers join the night tour for tourism and education purposes, respectively. The results reveal that 13.4% and only 4.1% of Gen Z tourists choose the night tour for entertainment and work, respectively. Incredibly, Gen Z tourists prefer booking the tour via social networks (Facebook, Zalo, and the hotline) and paying online by bank transfer (QR code), accounting for 85.5% and 95%, respectively. The results show that 97% of Gen Z travelers have not participated in this night tour before.

Table 4. The night tour at the Temple of Literature

Characteristics	Frequency (n)	Percentage (%)
How did you first know about the night tour?		
Friends/relatives/co-workers	68	31.2
Social network (Facebook, Ticktok)	119	54.6
TV	21	9.6
Newspaper/magazines	10	4.6
What is your motivation of the visit?		
Tourism and leisure	98	44.9
Education	82	37.6
Entertainment	29	13.4
Work	9	4.1
How did you book the night tour?		
Online (Facebook/Zalo/hotline)	193	85.5
Offline	25	14.5
How did you pay?		
By bank transfer	207	95.0
Cash	11	5.0
How many times have you been to this night tour?		
The 1st time	212	97.2
The 2nd time and more	6	2.8

The findings in Table 5 indicate that, out of the four criteria used to evaluate how useful smart tourism technologies are for the Temple of Literature's night tour program, accessibility is given the highest rating. Accessibility had an average value of 4.07%, while the interaction factor came in second with an average value of 3.73%. It is evident that travelers from generation Z are drawn to and value the accessibility and degree of connection offered by smart tourism technology, as exemplified by this night tour program.

It is noteworthy that generation Z tourists evaluate the criterion of the level of information provision at the heritage destination as the lowest among the four evaluation criteria, which shows that the smart technology system at the heritage destination is the lowest among the four evaluation criteria. Many Gen Z travelers claim that AI technology, which provides "turtle" information about destinations, is unable to answer a lot of inquiries, leaving many travel-related questions unanswered. As reality has demonstrated, the data system of the recently developed AI technology system is still quite basic and only contains very basic knowledge about the Temple of Literature.

Overall, 75% of Gen Z tourists indorse that considering the time, efforts and money, it is worthy to use smart tourism technology of the "Essence of Education" night tour at the Temple of literature while there are only 6.25% of them regret of this experience. This figure indicates that most of Gen Z tourist highly evaluate the quality of smart tourism technology at this heritage site.

Table 5. Gen Z tourists' evaluation on smart tourism technologies
of the night tour "Essence of Education"

Measurement scales	Percentage of respondents (%)	Average (%)
Information - STTs provide qualitative, credible, and accurate information		
Strongly disagree	2.2	
Disagree	14.9	
Neutral	48.9	**3.26**
Agree	23.4	
Strongly agree	10.6	
Accessibility - STTs are easy to access and use		
Strongly disagree	0	
Disagree	2.2	
Neutral	11.1	**4.07**
Agree	62.2	
Strongly agree	24.5	
Interactivity - STTs are interactive		

Strongly disagree	4.4	
Disagree	6.7	
Neutral	26.6	**3.73**
Agree	35.6	
Strongly agree	26.7	
Personalization - STTs offer customized information that meet tourists' requirements and needs		
Strongly disagree	4.4	
Disagree	13.3	
Neutral	22.2	**3.62**
Agree	35.6	
Strongly agree	24.5	
Perceived Value of STTs - considering the time, efforts and money, it is worthy to use STTs		
Strongly disagree	0	
Disagree	6.25	
Neutral	18.7	**3.98**
Agree	47.9	
Strongly agree	27.1	

Note: * A 5-level Likert scale is used in this study, 1 - Strongly disagree; 2 - Disagree; 3- Neutral; 4 - Agree; 5 - Strongly agree

5. DISCUSSION AND CONCLUSION

Finding out how the seatures of STTz affect travelers' experiences enhanced by STTs was the primary goal of the study. By drawing on existing literature, this study developed a thorough model of the characteristics of STTs, specifically the satisfaction of tourists, and conceptualized the dimensions of STTs. Upon completion of their stay, visitors' consumption behavior is influenced by their perception of the four STT attributes - personalization, accessibility, interaction, and information - which in turn affects their perceived value and thus their level of pleasure.

Accessibility was discovered to be the most powerful predictor among the four STT qualities. The results of our investigation are in line with earlier research. Tourists enjoy a high sense of ease because they can utilize STTs anywhere, at any time, and without complicated procedures or major effort when making travel decisions. Visitors can therefore take more time to experience STT-based tourism activities. Travelers' perceptions of STT accessibility can only be enhanced by STTs customized to their needs.

The results showed that interaction was the second most powerful predictor. As it relates to specific users, it also describes their capacity to view the encounter as a simulation of face-to-face conversation. High-level engagement can therefore encourage travelers to utilize STTs more frequently. Visitors to an attraction use STTs to actively seek for information relating to tourism. In order to suit the demands of visitors, staff

members also gather information about their preferences through the same channels.

This research validates the importance of the information characteristic. When it comes to meeting needs and enhancing experience quality, information quality can be defined as the extent to which it aligns with those needs. The accessibility, interaction, personalization, and information of STTs rank highest among their respective significances. The augmented tourism experience through smart technology is evidently improved by the first two dimensions: accessibility and interactivity.

In order to improve accessibility and interactivity of STTs and thereby raise tourists' perceptions of their usability and usefulness, heritage sites should, therefore, start with the demand and continuously optimize the use of STT infrastructure and services, simplify the usage of STTs, and strengthen the contact and communication between tourists and other stakeholders. The management and infrastructure of smart heritages are still in the early stages of introduction in Hanoi. In order to increase visitor satisfaction with effective facilities and services, heritage sites and other tourist attractions that have undergone a "smart" transition should continuously expand STT infrastructure and gather online data about opinions from travelers.

Our study's results, which are summarized above, have theoretical and practical implications. This study proposed and validated a paradigm for investigating the technology-enhanced tourism experience from an academic standpoint. The proposed methodology enables us to build a connection between the characteristics of STTs and the behavior of Gen Z tourists, so facilitating a deeper comprehension of the significance and practicality of STTs in certain tourism contexts and settings. Understanding the real content and practical use of STTs in the context of heritage sites provides insightful feedback that can improve the tourism experience and raise visitor satisfaction.

In terms of practical implications, the following recommendations could be applied to attract more visitors, enhance their experience and satisfaction. First and foremost, attach more importance to the attractiveness and appeal of STTs. STTs should support " tell a story" about the history of the heritage site. Managers and marketers should view these technologies as supplementary tools that enhance visitor satisfaction and the effective management and smooth operation rather than as the primary content of experience at the heritage sites. Secondly, there is a need to enrich STTs. Less entertainment is offered by STTs at Vietnam heritage sites. In order to improve engagement and the interactive experience, STTs should be utilized to create more enjoyable experiences, particularly for Gen Z travelers who are eager to explore new things. Thirdly, there is also a need for integrated promotion and communication with visitors to understand and take full advantage of the added value of STTs. Attractions are unable to charge their guests appropriately because of the significant operational costs associated with the infrastructure and services provided by STTs. Convincing potential visitors of the value addition and cost-effectiveness of all the facilities and services supported by STTs is the only way to do this. This is the real meaning of a technology-supported tourism experience.

Limitations: The first limitation is the sampling method. Since the empirical survey was conducted with the night tour in the Temple of Literature, Hanoi the offline respondents were mainly local permanent residents. Therefore, the convenience sampling is an issue. Second, the study focused on four attributes - information, accessibility, interactivity and personalization to evaluate the visitors' perception of the STT-enhanced experience, drawing on the attribute theory of STTs proposed by (Lee et al,. 2018; Yo al, 2017; No & Kim, 2015). Other dimensions may need to be further studied in the future. A third limitation is the study's context - a heriatge site in Hanoi, Vietnam. Researchers could examine the same topic (smart technology-supported experiences) in other heritage sites in Hanoi and in Vietnam or even other countries.

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IMPACT OF WORKING CAPITAL MANAGEMENT
ON THE PROFITABILITY OF TOURISM ENTERPRISES IN VIETNAM

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Abtract: *This article studies the impact of working capital management on the profitability of tourism enterprises in Vietnam. The research sample was collected from financial reports of 45 tourism enterprises listed on the Vietnam stock market in the period 2013 - 2022. The study used the regression method and SPSS26 software application in the research. The results show the inventory conversion period (ICP); Cash conversion period (CCC); and Average payment period (APP) have the opposite effect impact on profitability (ROA). The study uses two control variables, the research results show that debt ratio (DR) has a strong negative impact, and enterprise-scale (SIZE) has a positive impact on ROA. The research results are useful suggestions for managers to strengthen working capital management to increase profitability for tourism enterprises in Vietnam.*

Keywords: Tourism enterprises; Profitability; ROA; Working capital management; WCM.

Tóm tắt: *Bài viết này nghiên cứu tác động của quản trị vốn lưu động đến khả năng sinh lời của các doanh nghiệp du lịch tại Việt Nam. Mẫu nghiên cứu được thu thập từ báo cáo tài chính của 45 doanh nghiệp du lịch niêm yết trên thị trường chứng khoán Việt Nam giai đoạn 2013 - 2022. Nghiên cứu sử dụng phương pháp hồi quy, ứng dụng phần mềm SPSS26 trong nghiên cứu. Kết quả cho thấy: Kỳ luân chuyển hàng tồn kho (ICP); Kỳ luân chuyển tiền (CCC); Kỳ trả tiền trung bình (APP) có tác động ngược chiều đến khả năng sinh lời (ROA). Nghiên cứu sử dụng hai biến kiểm soát, kết quả nghiên cứu cho thấy tỷ lệ nợ (DR) có tác động mạnh ngược chiều, quy mô doanh nghiệp (SIZE) ảnh hưởng cùng chiều đến ROA. Kết quả nghiên cứu là những gợi ý hữu ích cho các nhà quản trị tăng cường quản trị vốn lưu động nhằm tăng khả năng sinh lời cho các doanh nghiệp du lịch tại Việt Nam.*

Từ khóa: Doanh nghiệp du lịch; Khả năng sinh lời; ROA; Vốn lưu động; WCM.

1. INTRODUCTION

Today, most countries around the world identify tourism as one of the important economic sectors, contributing significantly and effectively to the economic, political, social, cultural, and economic development. Each country, to different extents and extents, has focused on investing all resources as well as promulgating relevant institutions and policies to create the most favorable conditions for the tourism industry to develop. According to Report of (General Statistics Office of Vietnam, 2023), Vietnam's tourism industry has grown by an average of 6.24%, contributing 53.34% to the overall growth of the economy's GDP. The development of Vietnam's tourism industry is the result of

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the implementation of guidelines and policies of the Party and State, especially Resolution No. 08–NQ/TW dated January 16, 2017, of the Politburo on developing tourism to become a key economic sector, determining the goal that by 2020, the tourism industry will become a key economic sector; attracting 17 - 20 million international tourists, 82 million domestic tourists; Contributing over 10% of GDP, total revenue from tourists reached 35 billion USD; Export value through tourism reached 20 billion USD; Create 4 million jobs, including 1.6 million direct jobs (Resolution No. 08/NQ-TW, 2023). By 2030, Vietnam Tourism will truly be a key economic sector, strongly promoting the development of other industries and fields. Vietnam belongs to the group of countries with the leading developed tourism industry in Southeast Asia. To contribute to the successful implementation of the above goal, tourism businesses must readjust their business operations and competitiveness to suit new trends.

Vietnam is integrating more deeply and widely into the world and regional economy, and tourism businesses not only have to compete with domestic competitors but also with foreign competitors. Therefore, each business needs to have effective business, investment, and capital use strategies to ensure activities are carried out regularly and continuously as well as promptly capture good investment opportunities in the market. school. To adapt to world fluctuations, working capital management must become a top priority for the development of tourism businesses. Therefore, the article focuses on examining the impact of working capital management. This article studies the impact of working capital management on the profitability of tourism businesses in Vietnam. The research sample was collected from financial reports of 45 tourism businesses listed on the Vietnam stock market for the period 2013 - 2022. From there, it provides managers with useful information to make policy decisions. Effective management of working capital components to improve business profitability.

2. THEORETICAL BASE AND RESEARCH OVERVIEW

According to Brealey et al (2001), working capital is the money of all short-term assets of an enterprise to serve the production and business process. This capital circulates at once and is fully recovered, completing a circulation cycle at the end of a business cycle. Padachi (2016) believes that working capital is like "circulating blood in the body of an enterprise. Working capital management is an extremely important activity to bring production and business efficiency to enterprises. Paramasivan and Subramanian (2008) said: "Working capital management is the management of short-term assets of an enterprise such as Cash, securities, receivables, inventory, and short-term debt". Objectives of management Working capital focuses on controlling receivables, and payables and managing investment in inventory. However, good working capital management requires careful analysis of the relationship and influence of Factors in working capital that affect

production and business efficiency. Shortage or excess of working capital is detrimental to an enterprise's business operations.

There have been many studies around the world on the relationship between working capital management and business profitability. Sharma & Kumar (2011) studied the impact of working capital management (average collection period (ACP), inventory conversion period (ICP), average payment period (APP), conversion cycle cash (CCC)) to profitability (ROA) in 263 non-financial enterprises listed on the Bombay stock exchange (BSE) during the period 2000-2008. Research results show that the independent variable average collection period (ACP) affects in the same direction, the control variable of business size (SIZE) affects in the opposite direction on profitability (ROA) and is statistically significant. list. Huynh (2011) with research data from 2006-2010 of 39 manufacturing enterprises and 23 service enterprises in the Netherlands, the total number of research samples is 310 with the use of OLS regression analysis, model fixed effects (FEM), research has shown that average collection period (ACP), inventory turnover period (ICP), cash conversion cycle (CCC) hurt profits of both manufacturing and service sector companies. Meanwhile, Mumtaz et al. (2011) suggested that there exists a negative relationship between working capital management and profitability (ROA) when studying data from 22 chemical enterprises for the period from 2005-2010. The independent variables used in the study include components of working capital management (average collection period (ACP), inventory conversion period (ICP), average payment period (APP), and cash conversion period (CCC). Research results show that the inventory turnover period and average collection period hurt profitability (ROA). In addition, the study also found The positive impact of control variables on business size on profitability (ROA), financial leverage has a negative relationship with profitability (ROA). Afeef (2011) studied the impact of working capital management on the profitability (ROA) of 40 small and medium enterprises in the Pakistani stock market in the period 2003-2008. Representative independent variables of working capital management include collection period average, inventory conversion period (ICP), average payment period (ACP), and cash conversion cycle (CCC). Research results show that the inventory turnover period and average cash collection period Quantity hurt profitability (ROA). Gul et al. (2013) also conducted research on the impact of working capital management on profitability (ROA) of small and medium enterprises in Pakistan during the period 2006-2012. The results show that the average payment period (APP) has a positive impact on profitability (ROA). While average collection period (ACP), inventory conversion period (ICP) and cash conversion cycle (CCC) hurt profitability (ROA). On the other hand, the study also found a positive impact of the control variable of business size on profitability (ROA). Meanwhile, the debt ratio control variable hurts profitability (ROA). Wanguu (2015) studied the influence of working capital management on the profitability of commercial enterprises. Trading and Services listed on the Nairobi Stock Exchange from 2005-2014. Through the use of

regression analysis and two-factor analysis of variance (ANOVA), the author has confirmed that there is a positive correlation between inventory turnover period, average collection period, and profitability. profit. On the contrary, the average payment period is said to hurt business profits.

In Vietnam, Nguyen (2012) conducted research based on data from 24 seafood companies listed on the Vietnamese stock market in the period 2008-2010 with the OLS regression method to analyze the impact of Working capital management on profitability. Research results have shown a positive correlation between the average collection period, inventory turnover period, and cash conversion cycle and a negative correlation between the average payment period and profitability ratio. Thoa et al. (2014) analyzed panel data including 208 non-financial enterprises listed on 2 exchanges HOSE and HNX in the period 2006-2012 using the feasible generalized least squares (FGLS) method. to test the impact of working capital management on the profitability of Vietnamese businesses. The results show that the average collection period and inventory turnover period have an impact on profitability. Dinh (2015) also studied the relationship between working capital management and profitability with a sample of 49 construction materials companies listed on the Vietnam Stock Market in the period 2009-2013. By using OLS, FEM, and REM regression methods, the author concludes that there is a negative correlation between return on total assets (ROA), return on equity (ROE) with average collection period (ACP), and cash conversion cycle (CCC), and a positive correlation between return on total assets (ROA), return on equity (ROE) with average payment period (APP). Research results also show that inventory turnover period (ICP) has a negative relationship with ROA, but has no relationship with ROE. Tran (2019) selected 271 companies listed on the Vietnam stock market in the period 2010-2017 to analyze whether or not there is a relationship between working capital management and the profitability of businesses. The author used regression analysis with OLS, REM, FEM, and GLS models to research and concluded that cash conversion cycle (CCC), average collection period (ACP), Inventory conversion (ICP), and average payment period (APP) both hurt return on assets (ROA). The above studies have shown that business profitability is correlated with the cash conversion cycle (CCC), average collection period (ACP), inventory turnover period (ICP), and average payment period (APP).

Thus, studying the impact of working capital management on business profitability is still a subject of much debate and lack of consensus. Different from previous studies, this study tests the impact of working capital management on the profitability of tourism businesses listed on the Vietnamese stock market. The results of this research can help managers of tourism businesses listed on the Vietnamese stock market have more information to devise appropriate management policies to improve operational efficiency and effectiveness. contribute to increasing business value.

3. DATABASE AND RESEARCH METHODS

The authors collected financial statements of 45 tourism businesses listed on the Vietnam stock market for the period 2013 - 2022. In this research article, the author refers to the model Gul et al. (2013), Mumtaz et al. (2011), Sharma & Kumar (2011) and with some adjustments to fit research data in Vietnam. The study has the following hypotheses and research models:

Model 1: $ROA_{it} = \beta_0 + \beta_1*ACP_{it} + \beta_2*APP_{it} + \beta_3*ICP_{it} + \beta_4*DR_{it} + \beta_5*SIZE_{it} + \varepsilon_{it}$

Model 2: $ROA_{it} = \beta_0 + \beta_1*CCC_{it} + \beta_2*DR_{it} + \beta_3*SIZE_{it} + \varepsilon_{it}$

In there: **β_0: blocking coefficient**; **$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$: are unknown parameters of the model**; **ε: Error of the model**

Based on previous research results, the following table describes the measurement of variables used in the models.

Table 1: Description of variables and research hypotheses

Variable type	Variable name	Symbol	How to determine	Hypothesis study
Dependent variable	Profitability	ROA	Profit after tax/Average total assets	
Independent variables	Average collection period	ACP	(Average receivables/Net revenue)*360	H_1 (-) Opposite direction
Independent variables	Average pay period	APP	(Average payables to vendors/Cost of goods sold)*360	H_2 (+) Favorable
Independent variables	Inventory turnover period	ICP	(Average inventory/Cost of goods sold)*360	H_3 (-) Opposite direction
Independent variables	Cash conversion cycle	CCC	ACP + ICP - APP	H_4 (-) Opposite direction
Control variable	Debt ratio	DR	Liabilities/Total Assets	
Control variable	Enterprise scale	SIZE	Ln(Total assets)	

(Source: Compiled by the authors)

4. RESEARCH RESULTS

4.1. Descriptive statistical analysis

Table 2. Descriptive Statistics

	N	Minimum	Maximum	Mean Statistic	Std. Deviation
	Statistic	Statistic	Statistic		Statistic
ROA	450	-38.487	62.181	12.261	17.431
ACP	450	11.699	1034.797	100.980	127.120

APP	450	9.982	132.088	46.809	29.045
ICP	450	1.563	202.671	24.002	29.750
CCC	450	-.732	925.165	78.173	117.833
DR	450	.083	1.168	.510	.234
SIZE	450	8.946	18.384	13.825	2.559

(Source: Calculated from SPSS 26 software)

Table 2 shows that return on average assets (ROA) has an average value of 12.2% with a relatively large fluctuation with the largest value being 62.1%, while the smallest value only reaches -38.4%. The average value of the average collection period (ACP) is 100 days, the average payments period (APP) is 46 days, and the inventory conversion period (ICP) is 24 days. The cash conversion cycle (CCC) has an average length of 78 days. The debt ratio has an average value of 0.51 (51%), meaning that for every 100 VND of capital invested in the business, there is 51 VND of debt. This coefficient is not high, but it also signals the possibility of payment risks if the enterprise encounters difficulties in business. Enterprise scale (SIZE) has an average value of 13.8, proving that tourism enterprises are quite large in scale.

4.2. Correlation coefficient matrix

Table 3. Correlations

	ROA	ACP	APP	ICP	CCC	DR	SIZE
ROA	1	-.250**	-.480**	-.241**	-.213**	-.625**	-.200**
ACP		1	.616**	.170**	.970**	.095*	.356**
APP			1	.430**	.526**	.134**	.445**
ICP				1	.330**	-.223**	-.038
CCC					1	.012	.265**
DR						1	.236**
SIZE							1

(Source: Calculated from SPSS 26 software)

The correlation coefficient between variables shows the relationship between variables. We will evaluate the correlation through the Pearson coefficient (r) with a significance level of 5% (sig≤0.05). According to Table 3, ROA is negatively correlated with all variables; ACP and APP were positively correlated with all variables; ICP is negatively correlated with DR and positively correlated with CCC and SIZE; CCC has a positive correlation with SIZE and no correlation with DR due to Sig>0.05.

4.3. Analyze regression results

To consider the impact of working capital management on profitability, the study applied a linear regression model and had the following results:

Table 4. Anova

Model	Sum of Squares	df	Mean Square	F	Sig.
1	83031.025	5	16606.205	138.083	.000[b]
2	58930.644	3	19643.548	113.050	.000[b]

(Source: Calculated from SPSS 26 software)

According to Table 4. Variance analysis gives us the F test results to evaluate the hypothesis of the appropriateness of the regression model. The F-test Sig value is 0.000 < 0.05, meaning $R^2 \neq 0$, the regression model is appropriate.

Table 5. Model Summary

Model	R	R Square	Adjusted R Square	Durbin-Watson
1	.780[a]	.609	.604	.698
2	.657[a]	.432	.428	.583

(Source: Calculated from SPSS 26 software)

According to Table 5, with the Adjusted R Square of model 1 being 0.604, it shows that the independent variables included in the regression analysis affect 60.4% of the variation of the model's dependent variable, the rest is due to external variables. model and random error. Adjusted R Square of model 2 is 0.428, showing that the independent variable CCC included in the regression analysis affects 42.8% of the variation of the model's dependent variable, the rest is due to variables outside the model and errors. random. With the Durbin-Watson value of both models ranging from 0 to 1, no first-order serial correlation occurs.

Regression results of model 1:

Table 6. Coefficients of Model 1

	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	41.592	3.122		13.322	.000		
ACP	.005	.005	.038	.986	.325	.605	1.654

APP	-.211	.027	-.352	-7.709	.000	.423	2.366
ICP	-.140	.021	-.239	-6.656	.000	.684	1.461
DR	-48.746	2.368	-.655	-20.583	.000	.871	1.148
SIZE	.599	.238	.088	2.516	.012	.721	1.386

(Source: Calculated from SPSS 26 software)

According to the regression results of model 1 in Table 6, the variables APP, ICP, DR, and SIZE have Sig values less than 0.05, so these variables are all statistically significant. ACP has a Sig value of 0.325>0.05, so this variable is not statistically significant. Standardized Coefficients Beta of APP, ICP, and DR have a negative sign so it hurts the ROA variable; Standardized Coefficients Beta of SIZE has a positive sign so it has a positive impact on ROA. Based on the magnitude of Standardized Coefficients Beta, the order of impact from strongest to weakest of the independent variables on ROA is APP (-0.352) > ICP (-0.239). The DR control variable has a Standardized coefficient beta of - 0.655, so it has a strong negative impact on ROA. The control variable SIZE has a Standardized coefficient beta of 0.088, so it has a positive impact on the dependent variable ROA. The variance magnification coefficient VIF of the variables is all between 1 and 3, demonstrating that there is a moderate correlation between the independent variable ROA and other variables.

Regression results of model 2:

Table 7. Coefficients of model 2

	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Collinearity Statistics	
	B	Std. Error				Tolerance	VIF
(Constant)	38.228	3.498		10.929	.000		
CCC	-.030	.005	-.205	-5.529	.000	.927	1.078
DR	-46.307	2.738	-.622	-16.916	.000	.942	1.062
SIZE	.003	.260	.000	.012	.991	.876	1.142

(Source: Calculate from SPSS 26 software)

According to the regression results in Table 7, the variables CCC and DR have Sig values less than 0.05, so they are both statistically significant. SIZE has a Sig value of 0.991>0.05, so this variable is not statistically significant. Standardized Coefficients Beta of CCC is - 0.205 and DR is - 0.622, which has a negative sign, so it hurts the ROA variable. The variance inflation factor VIF of the variables is all between 1 and 2, demonstrating that there is a moderate correlation between the independent variable ROA and other variables.

Considering the standardized regression coefficient (βeta), we have the standardized regression equation of the two models as follows:

ROA = - 0,352*APP – 0,239*ICP– 0,655*DR + 0,088*SIZE

ROA = - 0,205*CCC – 0,622*DR

In the standardized regression equation, the variables have been regressed to the same unit. Furthermore, the standardized regression model makes more economic sense than mathematical sense.

Research results did not find a relationship between ACP variables and ROA. Therefore, the first hypothesis H1 is rejected. This result shows that the average number of receivables days is long or short and does not affect the profitability of the business.

The study also showed that APP hurts ROA. This result is contrary to hypothesis H2 and is consistent with the experimental research results of some authors such as. When businesses shorten the average payment time to suppliers, businesses can use this capital to invest in business activities, thereby increasing profitability.

Research shows that ICP hurts ROA, meaning that when ICP increases, it will lead to a decrease in business profitability. Increased inventory levels will increase working capital, causing financial resources to stagnate and thus increase the cost of working capital. Tourism businesses prolong the number of days of inventory, goods are stagnant, incurring a lot of costs such as storage costs, insurance costs, and reduced quality of goods... leading to reduced profitability. The above research results are consistent with research hypothesis H3 that the author set out.

The study also found a negative relationship with ROA, so businesses with shorter CCCs will have higher profit margins than businesses with longer CCCs. A shorter CCC can reduce a business's dependence on external funding sources, which leads to reduced finance and interest costs, thereby increasing profits. Regression results show that if tourism businesses tighten credit policies for customers and at the same time extend payment time to suppliers, it will increase profitability for the business. The above research results are consistent with research hypothesis H4 that the author set out.

The control variables DR and SIZE are also related to profitability. The analysis results show that DR has a strong, negative impact on ROA. For tourism businesses, using too much loan capital creates great pressure on debt repayment obligations, especially in the context that lending interest rates on the market in Vietnam in recent times have been quite high. high and highly variable. Due to environmental obstacles and the Covid-19 pandemic, the use of high financial leverage causes risks for businesses. When businesses use debt, they will benefit from corporate income tax costs due to the benefit of the tax shield, but on the contrary, it will increase payment and financial risks. The above result is consistent with the pecking order theory of capital structure, company profits have a

negative correlation with debt. The impact of SIZE on profits is positive, businesses with larger scale will have higher profitability.

5. DISCUSSIONS AND CONCLUSION

Working capital management is one of the important financial management activities that contributes to the business efficiency of an enterprise. This study tests the impact of working capital management on the profitability of Vietnamese tourism businesses in the period 2013-2022. By quantitative research, using SPSS 26 software as a tool in the calculation process and having research results: Average collection period (ACP); Inventory turnover period (ICP); Cash conversion period (CCC) hurts profitability (ROA). Debt ratio (DR) is an observed variable that has a strong negative impact on ROA; The observed variables DR have a strong negative impact and SIZE have a positive impact on profitability. It can be asserted that by minimizing the number of days to convert inventory into finished goods, shortening the number of days to collect receivables, and lengthening the number of days to minimize accounts payable as much as possible, the total number of days in CCC will be able to promote business efficiency of Vietnamese tourism enterprises. Tourism businesses should also adjust their optimal capital structure towards reducing liabilities to minimize business risks and take advantage of scale to improve profitability.

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DIGITAL TRANSFORMATION IN TOURISM DEVELOPMENT: FROM AN OVERVIEW OF DIGITAL TRANSFORMATION STUDIES IN EUROPE TO LESSONS IN SUSTAINABLE TOURISM DEVELOPMENT IN FRANCE

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Abstract: The article focuses on an overview of research and lessons learned on European digital transformation as well as analyzing the current digital transformation landscape in Europe according to two main digital transformation groups, the state and private enterprises. At the same time, the article also analyzes a specific case of how to develop sustainable tourism in France based on the combination of the state and businesses. From there, the article provides initial suggestive analyses and international experiences on combining digital transformation in sustainable tourism development for Vietnam in the current context of strong digitalization.

Keywords: Europe, digital transformation, tourism, sustainable tourism, France.

Tóm tắt: Bài viết tập trung tổng quan các nghiên cứu và bài học kinh nghiệm về chuyển đổi số của châu Âu cũng như phân tích bối cảnh chuyển đổi số đang diễn ra hiện nay ở châu Âu theo hai nhóm chuyển đổi số chính là nhà nước và doanh nghiệp tư nhân. Đồng thời, bài viết cũng phân tích trường hợp cụ thể cách phát triển du lịch bền vững của Pháp dựa vào sự kết hợp giữa nhà nước và doanh nghiệp. Từ đó, bài viết đưa ra những phân tích gợi mở ban đầu và kinh nghiệm quốc tế về việc kết hợp chuyển đổi số trong phát triển du lịch bền vững cho Việt Nam trong bối cảnh số hóa mạnh mẽ hiện nay.

Từ khóa: Châu Âu, chuyển đổi số, du lịch, du lịch bền vững, Pháp.

1. INTRODUCTION

Culture in tourism not only helps attract tourists but also plays a significant role in maintaining and preserving the unique cultural values of each country. While digital transformation offers opportunities for effective promotion and management, the combination of culture and digital transformation has become an undeniable trend. The study of tourism culture in the context of digital transformation is not only to understand the importance of culture but also to build an effective digital transformation strategy.

Europe is currently witnessing a period of robust digital transformation, especially after the COVID-19 pandemic, with initiatives such as investing in digital skills, building a fair and competitive digital economy, and creating an open, democratic, and sustainable society through the integration of digital technology. In France, a European country

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exemplifying sustainable tourism development, the government not only focuses on preserving heritage culture but also addresses the challenge of digital transformation in an increasingly interconnected world with global citizens. France's success not only raises questions about how tourism can adapt to the challenge of digitalization but also about how to flexibly combine digital transformation and sustainable tourism.

In this article, the authors focus on an overview of the digital transformation landscape taking place in Europe, especially through two main perspectives: digital transformation at the state level and within private enterprises. At the same time, the article provides a detailed analysis of how France develops a sustainable tourism model, emphasizing cooperation between the state and businesses. Based on these insights, the article proposes suggestions and international experiences to begin discussions on integrating digital transformation into Vietnam's sustainable tourism development, especially in the context of sustainable tourism development the current digital boom scene. Digital transformation in sustainable tourism development is a relatively new topic not only in Vietnam but also in the world. Within the framework of the article, the authors will analyze the issues mentioned above according to the method of overviewing the issue in the general context: digital transformation in Europe (general picture of digital transformation, digital transformation in Europe, state - enterprise), sustainable tourism development in France (based on analysis of a specific French product) and thereby suggests a new approach in combining digital transformation to develop tourism sustainability in Vietnam is based on the two combined groups of issues mentioned above.

2. THEORETICAL BASIS AND RESEARCH OVERVIEW

General context of digital transformation in Europe

The article *"Digital Transformation in the Context of the European Union and the Use of Digital Technologies as a Tool for Business Sustainability"* by Bednarčíková, Diana & Repiská, Radka (2021) presented contexts for advancing the European Union towards digital transformation. The COVID-19 global pandemic is regarded as one of the primary factors confirming the global significance of digitalization. Many businesses have been compelled to change and adapt to the new situation. Digital transformation in EU businesses signifies a shift in processes towards efficiency, innovation, and increased competitiveness for sustainable development [1].

In line with the above view, the article by Cristina Maestre titled "Why Europe must lead the digital transformation" published in the Journal of the European Parliament (2022) [2], argued that the COVID-19 pandemic has exposed the EU's shortcomings in facilitating people's access to essential services. Beyond aiding businesses in their digital transformation, it is crucial to have a roadmap for the gradual modernization of

e-government. The author contended that digital transformation would bring endless opportunities to the global economy, emphasizing that the European Union must play a leading role in implementing this transformative process [3].

The European Parliament report *"EU policies - Delivering for citizens: Digital transformation"* emphasized that a digital revolution is currently underway and will continue to transform the world at an unprecedented rate. Digital technology is changing the way businesses operate and the way people connect and exchange information. In response, both businesses and individual EU citizens need to be prepared with an adequate policy framework, equipped with the right skills and infrastructure to capture the enormous value brought about by the digital economy. To achieve this, the European Union must play an active role in shaping the digital economy, with policy initiatives ranging from investment promotion to law reform, improved coordination, and exchanges among member states. The European Parliament term from 2014 to 2019 witnessed numerous initiatives in the digitization of industry and public services, investments in digital infrastructure and services, cybersecurity research projects, e-commerce, copyright law, and data protection. As more EU citizens become aware of the significant role digital technology plays in their daily lives, the European Union should strengthen its support for the digital transformation process in the period 2021-2027. This should include a focus on emphasizing digital transformation in businesses, reducing the existing digital divide, removing unnecessary barriers, and ensuring an adequate legal framework in the fields of computing, data, artificial intelligence, and cybersecurity [4].

The report *"Shaping Europe's Digital Future"* by The European Commission (EC) in 2020 stated that the digital transformation process in Europe will yield superior results for everyone, prioritizing people and creating new business opportunities while promoting a more open and democratic society [5]. Digital solutions are crucial for Europe to combat climate change and make progress in the green transition, fostering a vibrant and sustainable economy. Accordingly, the approach to digital transformation in Europe will be based on three main pillars:

Technology for people: The EU strategy will invest in enhancing the digital skills of all EU citizens to protect them from technological threats such as hacking, ransomware, or identity theft. Additionally, technology will be developed with a focus on respecting citizens' rights. This includes accelerating the deployment of ultrafast broadband for homes, schools, and hospitals across the EU, along with expanding supercomputing capabilities to develop innovative solutions for medicine, transportation, and the environment.

- Fair and competitive digital economy: The EU aims to create conditions fostering a vibrant creative start-up business community. This involves making it easier for small businesses to access finance and enhancing the accountability of online platforms through the proposed "Digital Services Act." Clear rules for online services will be established to

ensure the construction of a fair competitive environment for all businesses. This initiative also aims to increase access to high-quality data systems while setting the highest level of personal and business data safety requirements.

- An open, democratic, and sustainable society: The EU's digital transformation strategy includes applying technology to control carbon emissions and achieve Europe's goal of becoming climate-neutral by 2050. To ensure the building of a democratic, sustainable society, the EU will provide citizens with more control and protection over their data. This involves promoting diverse, credible media content and combating misinformation online. Furthermore, the EU will implement digital transformation in the health sector, establishing a "European health data network" to promote better research, diagnosis, and treatment of diseases.

In the report *"Shaping Europe's Digital Future,"* the European Commission's Media, Content, and Technology Network Agency (2020) commented that the digital transformation of the European socio-economy is entering an accelerated period. This is a period driven by a combination of modern technology, blurring the boundaries between physical, digital, and biological domains, while also expanding the boundaries of computing capabilities. These technologies are gradually impacting all sectors of the economy. The report also lists a set of high-impact technologies and applications such as artificial intelligence, high-performance computers, advanced robots, and virtual and augmented reality technologies as well as their impact on the European socio-economy. According to projections in the report, by 2030, the GDP contribution from digital technologies could amount to €2.2 trillion, an increase of 14.1% compared to 2017. This figure is considered to offset all previous technology investment costs. It is estimated that European institutions and governments will need to contribute around €75 billion a year to information technology investment over the next decade to bridge the digital development gap between member states. In addition, the investment to upskill the workforce to manage digital transformation could reach €42 billion per year. In a new context and based on Europe's "Shaping the Digital Future Strategy" in February 2020, the report also discusses how digital transformation needs to align with four people-centered goals: Developing and implementing digital solutions to social challenges and climate change; Reinforcing democracy, building trust and diversity; Ensuring digital technology sovereignty and cybersecurity throughout Europe; Promoting economic development and competitiveness. To achieve these four goals, the report also proposes nine initiatives aimed at helping the European Union achieve results soon [6].

Digital transformation in government in Europe

Studying e-government, the EU has defined it as the use of ICT in public governance, coupled with organizational change and the acquisition of new skills. The primary aim is

to enhance public services and democratic processes while strengthening policy support. According to Rombach and Steffens (2009), e-government contributes to addressing needs for individuals and businesses more efficiently. The utilization of information technology, including e-business, provides significant power to enterprise e-commerce activities, streamlining business operations, and improving corporate structures. The foundation of e-government relies on various information technologies such as the internet, websites, mobile phones, biometric identification, smart cards, RFID chips, and SMS or MMS [7]. Moreover, the integration of new services through the support of the public sector, including 'open data' and various digital technologies such as IoT, Cloud, and Big Data, has led to the evolution of a new e-government model known as digital government. Several countries, including the United Kingdom, have adopted the digital government model as a form of governance [8].

The reports *"eGovernment: Using technology to improve public services and democratic participation"* [9] and *"Collaborative Government to Employee (G2E): Issues and Challenges to E-Government"* [10] both assert that e-government is built on four key relationships:

(1) Government-to-citizens (G2C): Involves the relationship between public administration and citizens. Examples include handling personal income tax, issuing certificates or citizenship identification, car registration, and exchanging information about daily life.

(2) Government-to-business (G2B): Encompasses non-commercial online transactions between state agencies and enterprises. This includes processes such as licensing, corporate income tax, customs, and electronic trading platforms for public procurement and bidding invitations.

(3) Government-to-government (G2G): Focuses on data sharing and information exchange within the system of state agencies. The primary goal is to effectively implement governance processes, including crisis management, disease prevention, financial management systems, election management, and international trade.

(4) Government to Employee (G2E): Centers on interactions between regulators and their employees, aiming to enhance labor performance within the agency. This involves centralizing communication, minimizing errors in work processes, and supporting career development. Examples include e-pay, pensions, training information, and e-training.

Commenting on the role and importance of e-government in the current society, Lilla Garayová, in the article *"E-Government - Shaping Europe's Digital Future"* described e-government as one of the most prominent phenomena of public administration in the 21st century. The digitalization-based public administration aligns with the European

Union's agenda, facilitating European citizens' access to public services through online technology platforms. E-Government has proven to be an exceptionally powerful strategic tool for promoting public sector transformation, contributing to the efficiency, openness, and user-friendliness of public administration [11].

On the development of e-government in European countries, particularly in the EU-27 region, the report *"E-Government Benchmark 2021"* by The European Commission (EC) reveals that the COVID-19 pandemic has functioned as a catalyst, significantly boosting the implementation of e-government. The pandemic's profound impacts on the economy, disrupting supply chains, and hindering production and business activities. Although multiple solutions are needed to address the situation, European governments have demonstrated resilience and innovation after the pandemic by swiftly transitioning public services to online platforms, providing the best support possible for citizens and businesses to cope in a rapidly changing environment. The report *"E-Government Benchmark 2021"* compares the progress of e-government transformation in 36 European countries, including 27 EU member states. The evaluation and analysis are based on data collected from nearly 8,000 public websites and 93 online public services provided by over 2,625 local administrative agencies. Notably, 81% of Europe's public services are now accessible online. In the two years since the onset of the COVID-19 pandemic alone, administrative agencies have added an extra 23% of public services online, showcasing a prompt response to support the needs of people and businesses [12].

The report *"E-Government Benchmark"* also offers assessments of the readiness of e-governments across four key dimensions: the people-centricity of public services, transparency, technological support, and cross-border services. These assessments involve a total of 14 specific indicators. The average score for countries is 68%, with standout performers including Malta (96%), Estonia (92%), Denmark (85%), Finland (85%), Austria (84%), and Portugal (82%) [12]. However, the report emphasizes that these assessments primarily focus on evaluating services, and their scores do not necessarily reflect the usage or satisfaction levels among people or businesses. Consequently, the report suggests that governments should concentrate on developing digital strategies with three key objectives: increasing satisfaction, enhancing inclusion, and boosting usage.

Digital transformation in European businesses

The report *"How Digitalized Are EU's Enterprises"* by Eurostat (2021) revealed that the adoption of digital technology by businesses enhances their capacity to improve services and products, thereby promoting competitiveness. Additionally, the COVID-19 crisis underscores that digitalization serves as a valuable tool to enhance the resilience of businesses post-pandemic. According to 2020 statistics, only 1% of EU businesses had a very high Digital Intensity Index (DII) while 14% achieved a high level of digitalization. Most enterprises recorded digital levels as low as 46%, and very low levels were at 39%

(based on businesses with at least 10 or more employees). Compared to 2018, the DII has seen an overall improvement at the EU level, with increases at very high (+5 percentage points) and high (+0.4 percentage points) levels. Eurostat's statistical data indicates that 9% of large EU enterprises have a DII at a very high level, and 42% at a high level. However, half of medium-sized (47%) and medium (46%) businesses show a low DII [13].

The research on European SME development with a digital and sustainable future, as outlined in the article by Galina Valentinova Misheva titled *"An SME Strategy for a Sustainable and Digital Europe"* by the European Commission's Digital Skills & Jobs Platform has identified three key pillars and objectives for SMEs within the framework of the European Strategy announced in 2020. These include:

(1) Building Capacity and Supporting the Transition to Digital Transformation and Sustainability.

(2) Reducing Regulatory Burdens and Improving Market Access for Businesses.

(3) Improving Access to Finance for Businesses. These objectives aim to guide SMEs in their efforts to align with the European Strategy, fostering digitalization, sustainability, and overall growth [14].

The article *"Barriers to Digitally Transforming SMEs in Europe,"* by Nilay Balkan's European Digital SME Alliance (2022), highlighted the importance of digital applications for business survival and resilience. However, the author also points out four major barriers to successful digital transformation in European small and medium enterprises (SMEs), which are:

(1) The digital skills gap of workers. Accordingly, SMEs lack the resources to equip business workers with knowledge and skills. Businesses do not always have enough resources, especially because they are small. They are easily dependent on service providers, and overall, it reduces initiative as well as is costly.

(2) The idea that "money" can help SMEs successfully transform digitally is wrong.

(3) Appropriate digital and social infrastructure must be ensured.

(4) The level of digitalization between regions is different in Europe. This makes it difficult for Europe to develop a common digital standard for universal adoption. [15].

The report *"Going Digital: The Challenges Facing European SMEs"* from experts at KfW Bank (Germany), British Business Bank (UK), and BGK (Poland) in 2019 is an overview report that highlights the challenges faced by SMEs in Europe, particularly in leading countries such as the UK, France, Germany, Spain, and Poland. Financial difficulties are most prominent, especially for SMEs operating internationally or in the process of reform and renovation. Additionally, the report points out difficulties

stemming from the impact of bureaucracy and tax pressures. Despite these challenges, European SMEs are expected to maintain strong investment in the coming years, with most businesses anticipating positive outcomes from digital transformation [16].

The PwC report, *"Innovation and Digital Transformation: How do European SMEs Perform?"* in 2018, highlighted the significance of the SME sector in the EU economy. With SMEs constituting 99.8% of the EU economy, creating 66.6% of total jobs, and contributing 56.8% of total value added, the SME sector is considered the backbone of the economy alongside large enterprises. Despite these contributions, the report observed that SMEs may encounter challenges in adopting digital technologies compared to larger enterprises. Indicators for the adoption of e-commerce, big data, cloud computing, RFID technology, planning software, and enterprise resources in the SME sector are slower than large enterprises. This discrepancy is understandable given that SMEs have more modest capital, human, and technological resources. Like reports by EU agencies, PwC also pointed out that the primary barrier to digital transformation in European SMEs is related to financial capacity. Additionally, SMEs face higher levels of uncertainty about applying digitalization and digital transformation to their operations, particularly in applications using cloud computing services. According to the survey, up to 73% of respondents expressed concerns about data security. Another barrier highlighted in the report is the insufficient digital skills among many SME employees, hindering their ability to operate digital systems effectively [17].

To assist SMEs in enhancing competitiveness, fostering innovation, and achieving successful digital transformation, PwC suggests various solutions. Among these, promoting knowledge diffusion and enhancing access to digital transformation networks are identified as crucial factors in facilitating SMEs' adaptation. Recognizing this importance, many countries have initiated programs, such as funding for knowledge and experience transfer initiatives, to encourage SME innovation and support digital transformation. Additionally, the European Commission has collaborated with leading companies to establish industry-specific knowledge bases, demonstrating the effectiveness of applying digital tools to operations across different business types. Simultaneously, PwC has advocated for the European Union to promote the upgrade of digital infrastructure and increase access to finance for SMEs.

The lessons learned from public-private digital transformation initiatives in Europe are vital for successful digital transformations, encompassing sectors like tourism. In the following section, the article will delve into the specific case of sustainable tourism in France.

3. RESEARCH METHODS

In this study, the authors chose to use secondary document analysis methods to establish a solid and scientific foundation for their research. The selected resources

demonstrate in-depth content, characterized by high academic standards and the ability to provide up-to-date information. Selected documents include reports from reputable international organizations, government agencies and reliable scientific reports. The deliberate selection of such resources is intended to ensure that the information used in the research is scientific in nature and accurately reflects the contextual nuances of the topic being explored.

What's new in this article is the way to overview and operationalize the concepts associated with related reporting indicators: Digital transformation is understood as a digitalization process based on the main pillars: digital government, digital economy, and digital society, however, to understand that concept is too broad, the article is divided into operationalizing the concept of digital transformation divided by sector (state and enterprise). On the other hand, the sustainable tourism development of France in the next article mainly analyzes the development of tourism based on the specific product of French wine, which is already famous in the world and has become even more famous through the development of French wine. Sustainable tourism development is based on heritage development and involves both public (French government) and private (independent wine producers) participation. From there, it suggests to Vietnam lessons on the model of public-private combination and sustainable development based on the digital transformation pillar of the combined model and enhancing the promotion of the heritage of sustainable tourism development.

4. SUSTAINABLE TOURISM DEVELOPMENT IN FRANCE - LESSONS LEARNED FROM WINE PRODUCTION TO WORLD HERITAGE PARIS BASED ON THE GENERAL CONTEXT OF DIGITAL TRANSFORMATION IN EUROPE

The general context of France's position in tourism development

For numerous years, France has consistently held the top position as the most sought-after destination for international tourists, securing its place as the most visited country. For instance, in 2019, France received 89 million international visitors, and in 2021, the figure stood at 48.4 million, surpassing countries like Mexico and Spain, which recorded 31.9 million and 31.2 million visitors, respectively (Statista, 2023). As of the end of 2021, France boasts an impressive 43 sites recognized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as World Cultural Heritage and 7 as World Natural Heritage sites (Commission nationale française pour L'UNESCO, 2023). The significance of these cultural and natural landmarks is exemplified by the presence of the Foundation's headquarters in the 7th Arrondissement of Paris. As of January 1st, 2023, the Île-de-France Capital Region, encompassing Paris and its surroundings, is home to 12,358,900 inhabitants, with Paris alone hosting 2,102,700 residents. Paris, the capital of France, is divided into 20 arrondissements, numbered from the 1st to the 20th. The Île-de-France Capital Region comprises 8 departments: Paris, Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne, Seine-et-Marne, Yvelines, Essonne, and Val-d'Oise. Notably, the

Île-de-France region represents 18.9% of metropolitan France's population (12,358,900 out of 65,834,800 people), excluding the population in the French Overseas Departments and Territories [18].

If France is the country that attracts the most international tourists in the world, then the region most visited by these tourists is the capital region of Île-de-France. Unquestionably, Paris, often referred to as the City of Light, takes center stage as the main tourist hub within this capital region. In 2022, marking the first year after the relaxation of regulations implemented to prevent the spread of the COVID-19 pandemic, the Île-de-France Capital Region warmly welcomed 44 million visitors, comprising 24.7 million French and 19.4 million international visitors. This influx of visitors contributed significantly to the region's economy, generating a total of 19.6 billion euros (Comité régional du tourisme, 2023). Paris, boasting iconic landmarks such as the Eiffel Tower (Tour Eiffel), Notre-Dame de Paris Cathedral (Notre-Dame de Paris), Louvre Museum, Arc de Triomphe, Panthéon Palace, and the captivating Montmartre neighborhood, solidifies its status as a world-renowned tourist destination. According to statistics, Montmartre Hill stands out as a particularly enticing location, attracting a considerable number of visitors to Paris.

For many international visitors, it may come as a surprise that in the past, Paris and its surrounding areas were renowned as one of France's notable winemaking centers [19]. As far back as the 18th century, this region was home to the country's largest vineyard, spanning approximately 42,000 hectares and encompassing about 300 communes. However, the status of this winemaking center gradually diminished because of urbanization, leading to the gradual disappearance of vineyards by the 1950s. Other winemaking centers such as Bordeaux (Bordeaux wine) and Champagne (Champagne) ascended in prominence, supplanting Paris, and its vicinity. The distinguished alcoholic beverage brand Golden Drop (Goutte d'Or) has deep roots in the winemaking tradition of the Île-de-France Capital Region. Presently, Paris and its surroundings have approximately one hundred vineyards per 100 roots. However, these vineyards no longer serve primarily economic purposes. Instead, they are often utilized to promote tourism activities or hold educational and cultural significance. Notably, the vineyards in Montmartre stand as a testament to the thousands of years of winemaking traditions in Paris and its vicinity, preserving this rich heritage.

Wine production - a typical tourist culture of France

Sylviane Leplâtre, the Parisian New Wine Researcher, reveals that the Montmartre vineyard boasts more than 1,760 grape roots, featuring nearly 27 grape varieties. This diverse composition includes 75% Gamay, 20% Pinot Noir, and 5% other grape varieties like Siebel and Merlot, sourced from major wine regions in France and Switzerland. The vineyard occupies an area of 1,556m² on Montmartre hill. Notably, these grape varieties

are chosen for their high yield and robust resistance to pests and diseases. The cultivation practices at the Montmartre Vineyard align with the principles of clean agriculture. Vineyard care adheres to strict biological principles, avoiding the use of chemicals, implementing manual weeding, and utilizing organic fertilizers for soil enrichment. Remarkably, Montmartre Vineyards stands out as one of France's smallest vineyards and the sole one deserving of its name within Paris. The stewardship of this vineyard rests with the Department of Parks and Gardens (Direction des Parcs et Jardins) at the Paris City Hall, under the supervision of Sylviane Leplâtre.

The Montmartre vineyards are revered as a symbol of ancestral viticultural traditions, and the wines produced there are considered a kaleidoscope of aromatherapy. The annual harvest, taking place on September 24th, lasts about two or three hours, with oversight from employees of the Environmental Green Space Agency of the City of Paris. Approximately 1,000 kg of grapes are harvested each year. Vincent Bolenor, the viticultural-horticultural expert overseeing part of the vineyard, notes that grape yields are influenced by weather conditions and the renewal of grape roots. On average, the vineyard produces between 1,100 and 1,500 kg of grapes. Despite the limited quantity, the production is highly cherished. The harvested grapes are transported to the cellar of the 18th Arrondissement City Hall, where Sylviane Leplâtre meticulously supervises the winemaking stages and the bottling process. The grapes are used to create two batches of wine right in the cellar of the 18th Arrondissement City Hall: a red batch and a pink batch. Annually, this harvest yields approximately 1,000-2,000 bottles of numbered wine, including around 1,100 bottles of 50cl red wine and 800 bottles of rosé wine of similar volume.

The bottles produced from the Montmartre vineyards are auctioned through various channels, including local festivals, neighborhood shops, online platforms, and the Montmartre Museum. A unique opportunity to taste wine is provided during the Harvest Festival. All proceeds from the sale of these wines contribute to social welfare activities in the 18th arrondissement. The funds are managed by a dedicated group of volunteers associated with the 18th arrondissement's Festival and Social Action Committee (Le Comité des Fêtes et d'Actions Sociales). This committee regularly organizes diverse activities that benefit the citizens of the arrondissement, such as preparing Christmas meals, providing food for the elderly, and making donations to various associations in Paris. Their commitment extends to hosting numerous festivals and events that cater to the interests and well-being of the community at large.

French ideas for sustainable tourism development - cultural heritage development

The 18th Arrondissement had long conceived the idea of preparing a dossier for Montmartre Hill's submission to UNESCO for World Heritage status. In 2021, Mayor Lejoindre of the 18th arrondissement officially initiated the submission to UNESCO to seek recognition for the Montmartre complex as a world heritage site. Mayor Lejoindre

expressed surprise that Montmartre Hill was not already on UNESCO's list of world heritage sites, emphasizing its significance for Paris and its immense potential to shine for the 18th Arrondissement [20]. He further stated, "Montmartre Hill is the embodiment of Paris" [21], highlighting its role as a source of inspiration for literature, painting, music, and cinema [22]. Beyond iconic landmarks like the Basilica of Sacré-Coeur and other buildings, the Montmartre vineyards play a significant role in preserving the wine tradition of the Île-de-France Capital Region. They are considered a pure product of Montmartre, and the production of grape wine under the theme of "Urbanism and Biology" is viewed as a decisive strength in the overall appeal of Montmartre's heritage for UNESCO recognition.

There is a significant need for the economic actors and merchants of the 18th Arrondissement due to the district's attractiveness. It is also necessary to mobilize the attention and participation of representatives and residents of the 18th Arrondissement. Therefore, the mayor of the 18th Arrondissement has stated the necessity to mobilize all resources to serve the common goal of creating dynamism. This means bringing together all actors, residents, traders, economic structures, associations, and all neighborhoods of the 18th Arrondissement [21]. The desire to promote the spirit of Montmartre aims to unite Montmartre residents and residents of the 18th Arrondissement. Millions of visitors, along with the neighborhood's inhabitants and Montmartre enthusiasts, annually dedicate themselves to this tangible and intangible heritage. This complex attracts about 10 million visitors each year. Acknowledging Montmartre's universal value is to acknowledge the commitment of those who make the 18th arrondissement vibrant in everyday life, in the neighborhoods of the 18th arrondissement. The strengths of the resume can be material, such as the Radet mansion, cultural aspects, people, art, and flora. That is the material aspect; the rest must also consider the aspect of living art. Wine is a pure food product of Montmartre. The profile will be based on 4 main axes: Living Art, History, Natural Space, and Architectural Heritage [20].

As of 2021, France has 43 sites recognized by UNESCO as World Cultural Heritage Sites (Commission Nationale Francaise pour L'UNESCO, 2023). If recognized, Paris and its surroundings would become the second UNESCO-listed site, after Rives de Seine in 1991. Montmartre Hill, a place that attracts many tourists and locals, would draw even more visitors with this recognition. At the same time, inscriptions on World Heritage sites would provide localities with more resources to better preserve their heritage. All these efforts are intended to bring more material and symbolic benefits to the 18th Arrondissement, Paris, the Île-de-France Capital Region, and France as a whole.

5. DISCUSSION

Research results have shown that Europe is undergoing a period of accelerated digital transformation. The COVID-19 pandemic has underscored the importance

of digital transformation, compelling businesses to adapt to the new situation. Digital transformation in businesses across this continent not only demonstrates efficiency and innovation but also fosters sustainable and competitive development. Key strategies of the European Union include investing in digital skills, building a fair and competitive digital economy, and ensuring an open, democratic, and sustainable society using digital technology.

On the issue of digital transformation in government in Europe, European countries have implemented e-government to enhance the efficiency of public governance and fortify relationships with citizens, businesses, and government agencies. The COVID-19 pandemic has expedited this transition, with many countries swiftly transitioning public services online to support citizens and businesses. Additionally, the region demonstrates the readiness and progress of governments. Despite disparities between countries, several nations such as Malta, Estonia, Denmark, Finland, Austria, and Portugal have scored high, excelling in people-centric focus, transparency, technological assistance, and cross-border services. However, service evaluation is only one aspect, and the focus should be on enhancing satisfaction, inclusion, and effective utilization by people and businesses. Vietnam can also learn from how European countries apply Digital Government as a potent tool to accelerate transformation and improve public governance systems. Moreover, it is essential to focus on developing a digitalization strategy to strengthen relationships with people and businesses while enhancing satisfaction, inclusion, and effective use of online public services.

Regarding digital transformation in businesses in Europe, research results have shown that digital technology enhances competitiveness and aids recovery after the COVID-19 pandemic. However, the Digital Intensity Index (DII) shows that only 1% of EU businesses are at a very high level, 14% at a high level, while 46% are at a low level and 39% are at a very low level. SMEs face many difficulties in the digital transformation process due to barriers such as workers' digital skills, financial perspectives, digital infrastructure, and regional disparities in digitization levels. There should be a focus on capacity building, reducing regulatory burdens, and improving market access and financing for businesses. The survival and resilience of SMEs heavily depend on digital transformation. However, four major barriers — workers' digital skills, misguided financial views, digital infrastructure, and regional digital disparity — also need to be considered. In the context of businesses in Vietnam, this experience can guide a focus on capacity development, reducing regulatory burdens, and improving digital and financial infrastructure, along with government support and investment incentives for digital transformation in SMEs.

Additionally, the study shows that the collaboration between the state and businesses is a key factor in promoting digital transformation in tourism. France is a prime example in Europe of sustainable tourism development. The issue of sustainable tourism

development in France is set in a diverse and rich context, shaped not only by stunning landscapes but also by a unique and varied culture. In the list of quintessential French tourist experiences, wine production plays a significant role as a unique cultural aspect. It offers not only a refined taste experience but also a glimpse into the country's agricultural history and traditions.

France's concept of sustainable tourism development not only revolves around the preservation and promotion of cultural heritage, but it also presents a digital transformation challenge in the context of an increasingly globalized world. The flexible integration of digital transformation and sustainable tourism has become an undeniable trend. France's success in promoting sustainable tourism through the development of cultural heritage, combined with digital transformation, opens new possibilities for both the tourism and wine industries.

As the world undergoes rapid change, moving towards digitizing all aspects, it is important to remember that culture remains a core factor in promoting sustainable tourism in the digital age. Further research into tourism culture in the context of digital transformation is necessary. This is not only to better understand the importance of culture but also to build effective digital transformation strategies.

Given the importance of culture, collaboration among stakeholders, ranging from governments to businesses, is essential. This ensures that digital transformation in tourism not only fosters the development of the digital economy but also maintains and preserves the cultural value of each tourist destination. The promotion of sustainable digital tourism will contribute positively to social stability and sustainable development in the current era of digital transformation.

6. CONCLUSION

Overall, digital transformation serves not only as an effective means to promote and manage tourism but also opens opportunities for creating unique tourism experiences and enhancing interaction with cultural heritage. The integration of government and business has become key to driving the digital transformation of tourism. This is achieved through the adoption of technology to improve customer experience and ensure industry sustainability.

Vietnam can draw many important lessons from France's experience in the sustainable development of the tourism industry, particularly through wine production. One of the key points is to focus on the preservation and development of heritage culture. This approach helps create unique tourism experiences and promotes understanding of the country's agricultural history and traditions. Furthermore, it strengthens the role of tourism in maintaining and preserving Vietnam's unique cultural values.

Furthermore, digital transformation has proven to be a key factor in promoting sustainable tourism in Europe, a lesson that Vietnam should consider. The flexible

integration of digital transformation and the tourism industry not only provides effective promotional opportunities but also creates a more interactive and enjoyable travel experience. Governments and businesses must collaborate closely to apply technology creatively, enhance customer experience, and safeguard resources and the environment.

Another significant lesson for Vietnam stems from the obstacles that Europe has had to surmount in its digital transformation journey. Challenges such as the digital skills gap among workers, financial perspectives, digital infrastructure, and disparities in digital proficiency across regions are issues that Vietnam may encounter. To achieve an effective digital transformation in tourism, Vietnam needs to make substantial investments in developing digital skills for its workforce, alleviating financial barriers, enhancing digital infrastructure, and fostering digital inclusion among localities.

Overall, Vietnam can learn from French and European experiences and apply these lessons to build a sustainable tourism industry, integrating digital transformation intelligently and effectively. The combination of cultural preservation and digital transformation will not only help Vietnam attract tourists but also maintain and develop its unique cultural values in the digital age.

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DESTINATION CHARACTERISTICS INFLUENCE DOMESTIC TOURISTS' DECISION TO CHOOSE A DESTINATION: EMPIRICAL STUDY IN PHU YEN

Nguyễn Thị Việt Hà[1]

Abtract: *The characteristics of the destination are one of the factors affecting the choice of travel destination of tourists. However, each location needs to identify outstanding features to exploit to create a comparative advantage in attracting tourists towards sustainable development. The study aims to assess how destination characteristics affect site selection behavior, visitor loyalty, thereby identifying motivating and limiting factors to make recommendations to guide destination policies. Suggestions in tourism development at the destination to attract new visitors and motivate visitors to return.*

This study was conducted on survey data for tourists who have traveled to Phu Yen. Data collected from 226 visitors to Phu Yen between June and August 2023 was processed and analyzed using Smart-PLS software. The research results show that destination characteristics including tourism resources and infrastructure have a positive influence in addition to the self-motivation of tourists to learn about the culture and history here.

Keywords: *Tourism destinations; traveler behavior; sustainable tourism; Phu Yen; domestic tourists.*

Tóm tắt: *Đặc trưng của điểm đến là một trong những nhân tố tác động đến lựa chọn điểm đến du lịch của du khách. Tuy vậy, mỗi địa điểm lại cần nhận diện những đặc điểm nổi trội để khai thác phát huy nhằm tạo ra lợi thế so sánh trong việc thu hút khách du lịch hướng đến phát triển bền vững. Nghiên cứu nhằm đánh giá các đặc trưng của điểm đến tác động như thế nào tới hành vi lựa chọn địa điểm, sự trung thành của du khách, từ đó nhận diện những yếu tố có tác động thúc đẩy và những yếu tố còn hạn chế để đưa ra những khuyến nghị định hướng chính sách hoàn thiện điểm đến. Những gợi mở trong phát triển du lịch tại điểm đến để thu hút khách mới và thúc đẩy du khách quay trở lại. Nghiên cứu này được thực hiện trên dữ liệu điều tra khảo sát đối với những du khách đã đến du lịch tại Phú Yên. Dữ liệu thu thập được từ 226 du khách đến Phú Yên trong thời gian từ tháng 6 đến tháng 9 năm 2023 qua được xử lý và phân tích bằng phần mềm Smart-PLS. Kết quả nghiên cứu cho thấy, đặc trưng điểm đến gồm tài nguyên du lịch và cơ sở hạ tầng có ảnh hưởng tích cực bên cạnh động cơ tự thân của du khách muốn tìm hiểu về văn hoá, lịch sử nơi đây.*

Từ khoá: *Điểm đến du lịch; hành vi du lịch; du lịch bền vững; phú Yên; du khách nội địa*

1. INTRODUCTION

Choosing a travel destination is an important decision for travelers because it affects the value of experience and satisfaction that visitors expect to receive after each trip. Each tourist destination has its own unique characteristics in terms of culture, landscape, cuisine, recreational activities [1]. Travel is an opportunity for travelers to discover new things, broaden their horizons, improve their understanding of the world, and create beautiful

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memories. Choosing the right destination will help visitors make the most of the right time and budget, satisfying their personal preferences and needs.

The behavior of choosing destinations while traveling by tourists is a topic that attracts the attention of both researchers, management agencies, organizations in the field of tourism, management and marketing. The characteristics of the destination are one of the factors that attract tourists, serve as the basis for making decisions about where to travel of tourists. The study of destination selection decisions is divided into 3 main research directions. The first approach follows a five-stage decision-making process: (1) recognizing travel needs and desires, (2) seeking and evaluating relevant information, (3) making travel decisions, (4) preparing and experiencing trips, (5) assessing post-trip satisfaction [2]. These studies focus on identifying and evaluating the factors influencing decisions at each stage. In the second direction, the approach divides into personal subjective factors (personal characteristics, roles, motivations, attitudes), and objective factors such as availability of locations, programs, services (Availablibity of facilities and services), and quality of facilities and services [3]. The 3rd research direction, based on behavioral theory, holds that a tourist's decision to choose a destination is the result of a cognitive and attitude process that leads to intention and decision-making. In-depth studies that go into specific analysis of each group of factors to increase awareness of each impact factor are the trend of current research. In Vietnam, there are several published studies on this topic, but most of these studies only focus on analyzing the competitiveness or destination image of a locality [4] without exploring the problem of deciding on the specific destination of each tourist group [5] and [6].

Phu Yen is one of the destinations attracting domestic tourists with strong growth in recent years. According to data from Phu Yen tourism department, in 2022, the number of tourists reached 2.2 million, 5.9 times morecompared to 2021 andup 20.2% compared to 2019 (before the outbreak of COVID-19). Number of domestic visitors reached 1.8 million, accounting for 81.8% total number of tourists. In the first 9 months of 2023, the total number of tourists reached 2,532,000, reached 105.5%-year plan, up 57% over the same period. Where as, the number of domestic visitors was 2,074,000, accounting for 81.9% total number of tourists. Tourism revenue reached 3,741 billion VND, reached 120.6%-year plan, up 87% over the same period. The number of domestic visitors to Phu Yen in recent years was showing a strong growth and the attraction of this destination. Domestic tourism plays an important role in developing Phu Yen tourism. However, Phu Yen is a tourist destination with the potential to attract domestic as well as international tourists. For further development, it is necessary to research from the perspective of visitors to identify the highlights and what attracts them to Phu Yen.

According to the author's knowledge, research on this topic for tourist destinations in Phu Yen is not much and each study has certain contribution values according to the

limited scope of research. The studies mainly apply the theoretical framework of consumer behavior in tourism to understand and explain the basis of travelers' choice of destination. Therefore, in this study, the author examines the assessment of the characteristics of a particular destination that influence the choice decision of domestic tourists from the perspective of approaching according to consumer behavior theory.

The research questions are as follows:

1. Are there specific factors of the destination that affect tourists' intention to travel to Phu Yen?

2. How do these factors affect travelers' intentions?

To answer these research questions, quantitative methods are used. Data was collected through questionnaires sent to tourists who have traveled to Phu Yen through 2 channels: surveying visitors to Phu Yen through tour operators, and travelers using services at restaurants and hotels in Phu Yen.

2. THEORETICAL OVERVIEW

2.1. Tourist destinations

Tourism is a specific, spatial oriented activity. The traveler leaves their habitual residence to go to a specific location in order to satisfy their needs according to the purpose of the trip [8].

Travel destinations are defined as where there are elements that attract visitors and provide necessary services to visitors during the stay. A tourist destination defined by the World Tourism Organization (UN-WTO) is a geographical area of space where tourists stay at least one night, including tourism products, services provided, tourism resources that attract visitors, administrative boundaries to manage and image recognition to determine competitiveness in the market" [9].

A destination is also seen as a geographical region defined by tourists, where technical facilities and services meet the needs of visitors. A tourist destination is a place that we can feel by geographical borders, political borders or economic borders with attractive tourism resources, capable of attracting and meeting the needs of tourists. Tourist destinations can be classified according to the following basic levels or scales: (1) large-scale destinations are destinations of a territory or at the continental level such as Southeast Asia, South America, Europe, Asia, Africa, etc.; (2) macro destinations are destinations at the level of a country; (3) Micro destinations include regions, provinces, cities, districts, even one commune or town ect [10].

This study examines a tourist destination as an integrated product or brand that includes many constituent factors such as weather and climate conditions, infrastructure, facilities or superstructures, services, natural and cultural features to provide an experience for visitors. The destination as a product is constituted by natural features such as climate,

landscape, cultural-historical architectural works etc and man-made factors such as hotels, transportation conditions, technical facilities, recreational activities [11].

2.2. Consumer behavior theory in tourism

Consumer behavior theory is a discipline in the field of microeconomics, focusing on the study of how consumers make decisions to buy and use products and services. The goal of this theory is to explain what factors influence consumer behavior and predict consumer behavior in the future. In addition to benefits, there are many other factors that influence consumer behavior, including: Price of products and services (is a determinant of consumer shopping); Consumer income (determines their ability to pay for products, services); Personal preferences (affect the type of products and services that consumers choose); Perception of products and services (influenc consumers' purchasing decisions); Social impact: from family, friends, colleagues, etc also affects consumer behavior.

Studying consumer behavior is a very important aspect that must be studied in every marketing activity, including the tourism business. Understanding and capturing consumer behavior in tourism is significant in developing new products and services of businesses and the tourism industry. To accomplish this problem, managers and researchers of tourism consumer behavior need to find out what are the influential factors as well as the extent of their influence on consumer behavior in tourism so that there are appropriate impacts on each factor, group of factors to stimulate tourists to consume more tourism products.

In earlier studies, the intention is defined as "a stated likelihood to engage in behaviour". The Theory of Planned Behaviour (TPB) suggests that stronger intention to carry out behaviour will result in a higher level of actual behaviour [12]. Several studies on tourist intentions have focused on the factors that determine the behavioural intention. Hence, research on behavioural intentions remains a vital subject in the study of tourism since positive intentions indicate tourist loyalty. Empirical studies have been recently conducted on visitors' intentions to visit or revisit a destination as well as their enthusiasm to recommend the destination to others [13].

Identifying factors influencing tourism consumer behavior not only helps researchers and managers better understand the needs of tourists in their decisions to buy tourism products but also understand their post-purchase decisions. Post-purchase decisions usually involve assessing satisfaction with the quality of travel services in destinations as well as travel return plans, intentions to introduce others to travel. This is one of the important contents to help tourism business managers at different levels understand to have appropriate policies to attract new tourists, build loyalty of tourists.

2.3. Proposed research model

Two key factors influence intentions to select the tourism destination, namely, the motivating or pull stimulus factors and psychological or personal factors. Motivating or

pull factors are those precise elements that drive tourists to actualize their needs such as the destination image, services and entertaining facilities. Psychological factors comprise environmental attitude, motivations of tourists to travel, word of mouth (WOM), and prior knowledge, inclinations, and satisfaction [14]. In addition, other factors such as sources of information about destinations, trip plans, financial issues etc. It is also considered in the relationship between factors in the decision-making process of destination selection. However, each study only addresses a certain group of factors or factors depending on the purpose and context of the study.

Internal factors: the motivation that motivates visitors

Motivation is related to attitudes and intentions of tourists. Tourist motivation can be considered as the key determinant of behavioural intentions when selecting tourist destinations (Chang, 2014). Travel motivation as an individual's internal need that drives him/her to act in a certain way to attain his or her desired fulfilment and aims [15]. The study further suggested that motivation is a psychological factor that can affect tourist behaviour by influencing the cognitive organisation of environmental perceptions. Furthermore, tourist motivation is not only useful for explaining tourist behaviour but is also a predictor of visit intention. Tourist motivation is a driving force that motivates people to take a vacation or revisit destinations. Apart from being the most important factor in the prediction of tourist behaviour, travel motivation also significantly influences the understanding of visitors' revisit intentions [15]. Thus, in this study, the intrinsic motivation to learn and explore the destination will motivate travelers to decide on a satisfying destination. Therefore, the following hypothesis is proposed:

H1: The desire to explore the destination will motivate visitors to choose a destination

H1.1. The desire to explore the values of cuisine and entertainment in the destination motivates visitors to decide on the choice of destination.

H1.2. The desire to explore the history and culture in the destination motivates visitors to decide on the choice of destination.

External factors: Characteristics of tourist attraction destinations

The characteristics of the destination are the biggest influencing factor in the choice of travel confirmed in many existing studies [16]. The factors identified include: price, size and accommodation services, destination near the sea, destination near the center, distance from the destination to the airport, distance of accommodation facilities, shopping outlets, activities at the destination, health-related issue, and security factors [16]. The provision of high-quality services has been identified as an important factor that brings about the success of tourism industries. Therefore, there is a relationship between quality service and tourist satisfaction, which in turn leads to destination loyalty. Tourism resources and infrastructure, quality of

services and tourism environment are considered important components of the destination characteristics that this study focuses on [17]. Therefore, the hypothesis of the study is:

H2: The characteristics of the destination are the factors that attract visitors

H2.1. A good tourist destination's infrastructure will attract visitors to choose that destination.

H2.2. Good service quality of a tourist destination will attract visitors to choose that destination.

H2.3. The tourism environment of a good tourist destination will attract visitors to choose that destination.

H2.4. The tourism resources of a diverse tourist destination will attract visitors to choose that destination.
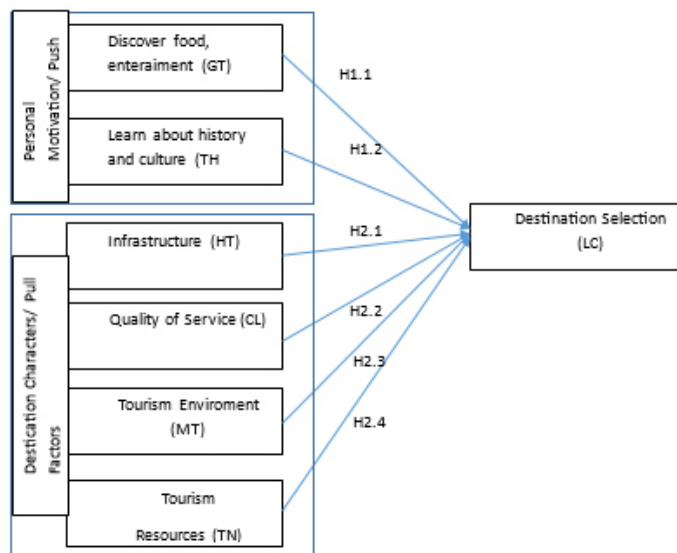
Figure 1. Proposed research model

3. RESEARCH METHODOLOGY

3.1 Data collection methods and scales

The sample of the study was selected based on the method of randomly selecting domestic tourists who are traveling in Phu Yen in the summer of 2023 that the research team reached through tour operators and restaurant and hotel locations in Tuy Hoa city, Phu Yen province.

Sample size: according to Hair, to perform quantitative analysis studies, the sample size must be at least 100 - 150 [18]. There are also other authors who argue that the critical sample size should be 200 [19]. With a representative and effective sample selection

criterion, this study chose to calculate the sample size when the whole is unknown. The number of samples expected to be surveyed is calculated according to the formula:

$$n = \frac{z^2 p(1-p)}{e^2}$$

(p = 0.5; z = 1.96 corresponds to a confidence level of 95%; e = 0.07 corresponds to an allowable error of 7%). From this, the minimum number of samples to be surveyed is 196.

The data collected through the survey questionnaire was built from a scale of factors influencing travelers' choice of destinations inherited from the study of [20]. In addition to the introduction to the purpose of the survey, the survey also includes 2 parts: part 1 collects information about demographic characteristics; Part 2 collects information on the level of agreement of each scale of factors affecting the choice of Phu Yen destination of tourists to Phu Yen. Part 2 questions use a scale of 5 likert with level 1 being very disagreeable to level 5 being very agreeable. The questionnaire is completed through 2 stages: Phase 1 mock interviews with 10 visitors then receives feedback on clarity and understandability to complete the questionnaire; phase 2 interviews with 300 tourists to Tuy Hoa.

3.2 Data analysis methods

This study uses the PLS-SEM (Structural Equation Modeling) fractional squared linear structure modeling method to validate research hypotheses and proposed research models [18]. Because PLS SEM is not demanding on sample size and standard distribution of research data. Data obtained from travelers is encrypted and processed on SPSS 20.0 software and analyzed on SmartPLS 3.0 software. The PLS-SEM method of choice for relationship testing.

Scales that measure concepts in the model are evaluated for reliability and value. For reflective scales, composite reliability (CR) is used to assess reliability. Factor loading and Average Variance Extracted (AVE) are used to evaluate the convergence value of the scale. In addition, the Fornell and Larcker is applied to measure the distinguishing value of the resulting scales.

To evaluate structural models in PLS-SEM, this paper uses two evaluation criteria: coefficients of determination (denoted R2), and statistically significant path coefficients. The R2 value of the dependent variable is a measure of the explanatory ability of the independent variables for the fluctuation of the dependent variable in the model based on the sample dataset. The greater the value of R2, the greater the degree of interpretation of the independent variables to the dependent variable.

4. RESEARCH RESULTS

4.1 Characteristics of the survey sample

The data used in the analysis from 226 valid samples collected from 300 travellers reached between June and August 2023 were categorized by a group of criteria of gender, age, income and hometown. Detailed sample characteristic information is shown in table 1.

Table 1. Survey form information

Criteria		Frequency	Percent (%)
Gender	Female	135	59.73
	South	91	40.27
Age	Under 30 years old	77	34.07
	From 30 years old to 50 years old	93	41.15
	Over 50 years old	56	24.78
Average income per month	Under 15 million VND	57	25.22
	From 15 million to 30 million VND	135	59.73
	Over 30 million VND	34	15.04
Hometown	Northern	91	40.27
	Central	75	33.19
	Southern	60	26.55
Total		226	100.00

Source: Survey Results, 2023

4.2 Measurement model evaluation results

The composite measurement model consists of four variables using the outcome scale and one variable using the causal scale that is checked by running the PLS Algorithm. The results of the measurement model analysis are shown in Figure 2, Table 2 and Table 3.
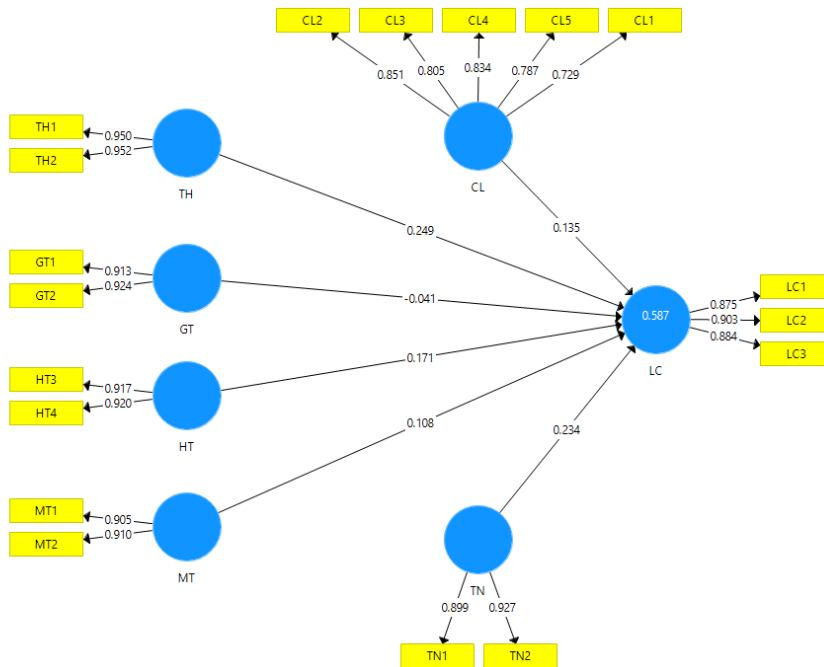
Figure 2. Results analysis of measurement model

Reliability rating: the results in Table 2 show that the indicators of intrinsic consistency as assessed by Cronbach's Alpha coefficient and aggregate confidence coefficient (CR) of

the underlying structures are both greater than 0.7. Thus, the measurement model meets the requirement of intrinsic consistency reliability. Moreover the scales used have ensured reliability because the index of single factor load (Outer loading), of all factors is greater than 0.7. This suggests that the scales used in the study are appropriate to take further steps [18].

Table 2. Evaluation of reliability and convergence of measurement models

Factor name	Code	Cronbach's Alpha	Load factor (Outer Loading)		Synthetic reliability (CR)	Total Extract Variance (AVE)
			Min	Max		
Discover food, entertainment	GT	0.814	0.913	0.914	0.915	0.843
Learn about history and culture	TH	0.894	0.950	0.952	0.950	0.904
Infrastructure	HT	0.815	0.917	0.920	0.915	0.844
Quality of service	CL	0.861	0.729	0.851	0.900	0,644
Tourism environment	MT	0.785	0.905	0.910	0.903	0.823
Tourism resources	TN	0.803	0.899	0.927	0.910	0.834
Destination selection	LC	0.866	0.875	0.903	0.918	0.788

Source: Data analysis results of Smart PLS software

Convergence assessment

To assess the degree of convergence of the underlying structure, the authors selected the quotation variance index (AVE). A variable is evaluated to have a good degree of convergence when the change of the underlying variable explains at least 50% of the variation of the observed variable or otherwise has a coefficient of extract variance greater than 0.5. The resulting variance quoted by each variable is shown in Table 2, the index of convergent values is greater than 0.5 and ranges from a value of 0.788 to a value of 0.905. Thus, the scales in the model satisfy the requirement of convergent values.

Differentiation assessment

In this study, the method of Fornell and Larcker (1981) was used to determine and evaluate the differentiation of the scales used in the model. The results of the analysis of the data in table 5 show that the square root coefficient of the total variance extracted by all factors is greater than the other correlation coefficient. Thus, the proposed factors achieved differentiation by standards for subsequent studies Fornell and Larcker [21].

Table 3. Fornell-Larcker Criterion Differentiating Values Calculator

	CL	GT	HT	LC	MT	TH	TN
CL	0.802						
GT	0.558	0.918					

	CL	GT	HT	LC	MT	TH	TN
HT	0.760	0.569	0.918				
LC	0.660	0.391	0.601	0.888			
MT	0.712	0.427	0.586	0.648	0.907		
TH	0.688	0.418	0.583	0.701	0.726	0.951	
TN	0.727	0.466	0.609	0.711	0.774	0.847	0.913

Source: Data analysis results of Smart PLS software

Based on the above results, it can be concluded that the scales used in the research model have satisfied reliability, convergence value and differentiation value. Therefore, all scales will be used for analysis in the equation structure model.

4.3. Results of structural model evaluation

The structure model is Bootstrap tested with a return pattern N = 500 to specifically estimate the relationship between the underlying variables.
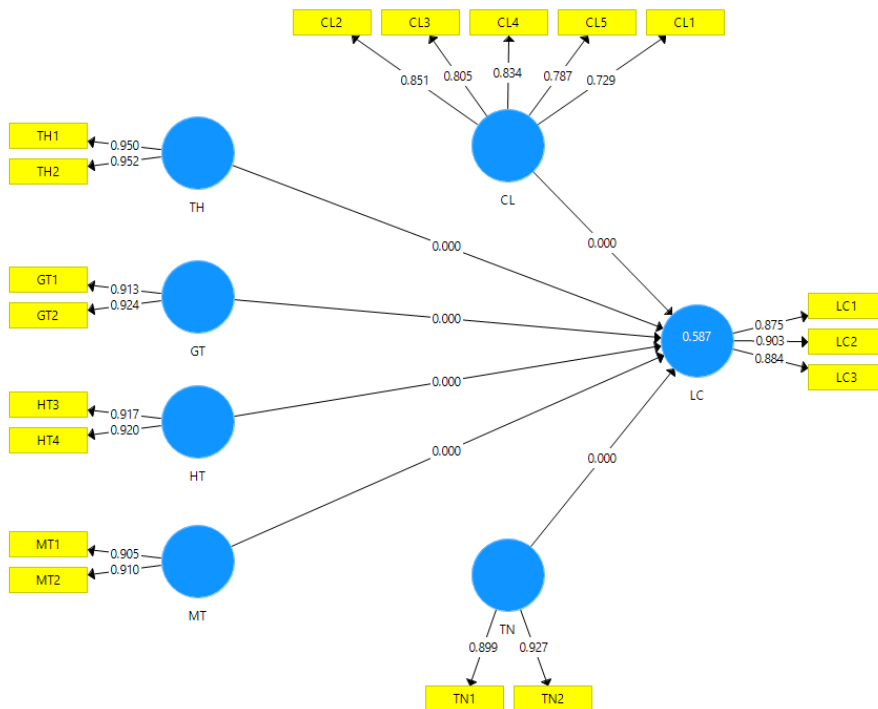
Figure 3. Results of structural model analysis

The path coefficient value for the endogenous latent variable is used to analyze the model at a 5% significance level. PLS SEM model test results for all bootstrap models provide standard mean and error values for each path coefficient. P-values are used to represent the statistical significance of relationships in the structural model.

The results of the Bootstrapping Structural Model test are shown in Table 4, the results show that 3 variables in the proposed model have a direct impact on the decision of visitors to choose a whore with a significance level of less than 0.05. With an adjusted R-squared value of 0.575 shown in Figure 2, this means that the study model explains 57.5% of the variability of Phu Yen destination selection decisions and is explained by impact-independent variables including the variable belonging to the traveler's internal motivation as the desire to explore, learn about local history and culture; and 2 elements of the characteristics of the destination are infrastructure and tourism resources.

Table 4. Structure Model Bootstrapping Results Table

Path	Hypo thesiss	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/ STDEV|)	P Values	Decicions
GT-> LC	H1.1	-0.041	-0.036	0.062	0.667	0.505	Reject
TH-> LC	H1.2	0.249	0.257	0.093	2.672	0.008	Accept
HT-> LC	H2.1	0.171	0.169	0.087	1.975	0.049	Accept
CL-> LC	H2.2	0.135	0.135	0.095	1.431	0.153	Reject
MT -> LC	H2.3	0.108	0.106	0.086	1.260	0.208	Reject
TN -> LC	H2.4	0.234	0.229	0.094	2.489	0.013	Accept

Source: Data analysis results of Smart PLS software

Thus, the accepted hypotheses include: hypothesis H1.2 The desire to learn more about the culture and history of the destination motivates visitors to decide on the choice of destination; hypothesis H2.1 A good tourist destination's infrastructure will attract travelers to choose that destination; and hypothesis H2.4 The tourism resources of a diverse travel destination will attract visitors to choose that destination. These hypotheses are accepted with a 95% confidence rating. As for the H1.1 hypothesis; H2.2 and H2.3 are rejected.

4.4 Results of analysis and discussion

Through the table of research results, the motivation from individuals to want to learn about the culture and history of tourists is the factor that has the biggest impact on the decision to choose a destination of domestic tourists with a beta factor of 0.257 and a P-value of 0.008. This is consistent with previous studies [20] and [14]. When customers are highly motivated, they will make a decision to choose to go where they have chosen. Moreover, Phu Yen is also one of the places with many cultural and historical features different from other destinations. When visitors come here, they can explore and learn about the roots of Vietnamese writing, the unique culture of the Cham people.

The 2nd largest influencing factor is the tourism resource factor that has a positive and statistically significant influence on domestic travellers' decision to choose a destination with an impact of 0.299 with a P-Value of 0.013 less than 0.05. The results of this study are also consistent with previous studies. A destination's tourism resources are natural and man-made features that attract visitors there. This means that destinations with abundant tourism resources such as beautiful landscapes, historical sites, typical architectural works, unique cultural features, or beautiful enjoying spaces, cultural characteristics, gastronomy ect will attract visitors to visit and experience. For Phu Yen, is a coastal province in Central Vietnam, famous for its pristine beaches, fine white sand and majestic mountains. It also owns many tourism resources abundant and diverse (such as Ganh Da Dia Island, Hon Yen Island, Vung Ro Bay, Da Bia Mountain, Swallow Tower, Dai Lanh Cape - such as the easternmost of the country ect) can satisfy the diverse needs of tourists. This result shows that these are the strong characteristics of the locality that need to be promoted, enhanced information sharing to potential tourists to attract.

The 3rd most influential factor is the infrastructure factor of the destination, which has a positive and statistically significant influence on the decision of domestic travelers to choose a destination with an impact of 0.169 with a P-Value of 0.049 less than 0.05. These results are consistent with the studies reviewed at [16] and [4]. The infrastructure of the destination brings convenience, comfort, and easy connectivity for visitors to move to and experience during their days at the destination. Because this system includes transportation systems, accommodation systems and services to support visitors to and from this destination. This shows the importance of a convenient transportation system to the place of residence of tourists, where easy travel will motivate visitors to choose. Moreover, at the destination there are accommodation facilities that ensure the prescribed standards to bring comfort, safety and satisfaction to visitors will also have a higher chance of being selected. Good tourism infrastructure will help attract tourists, improve the quality of tourism services and boost the local economy. In order to develop tourism of destinations, tourism infrastructure needs to be implemented in a planned, synchronous and suitable way to the characteristics of each locality and updated according to trends. smart and sustainable infrastructure. Smart tourism infrastructure is a new trend in tourism development, using information technology to improve the quality of tourism services and tourist experience. Sustainable tourism infrastructure is a type of infrastructure developed based on the principles of environmental protection and efficient use of natural resources.

In addition to the above three factors that have had a positive and statistically significant impact, promoting the choice of tourists, the remaining factors have an impact, but in the context of research at a particular tourist destination, there are not enough grounds to confirm the relationship between these variables. In other words, visitors who decide to travel to Phu Yen are not necessarily motivated by the desire to explore

the cuisine of this area, or come here for entertainment. Tourists also do not appreciate the quality of tourism services provided in Phu Yen and the tourism environment here. This result shows that in the coming time to develop local tourism, Phu Yen also needs appropriate and synchronous solutions to enhance these characteristics.

5. CONCLUSIONS

The study looked at the factors influencing travelers' decision to choose a travel destination. Experimental evaluation with visitors to Phu Yen has shown that 3 factors influencing this decision come from internal motivating factors and external pulling factors. In particular, emphasizing the characteristics of the destination contributes to influencing tourists' decisions to identify strengths and weaknesses from which to have strategies to attract tourists to suit the local context. Research results show that tourists choose to come to Phu Yen because of its attractiveness in terms of cultural and historical characteristics; attraction from diverse tourism resources; attraction from convenient infrastructure for tourists. In addition, in order to develop tourism towards smart tourism and sustainable tourism, Phu Yen also needs to improve the tourism environment and improve the quality of local tourism services.

This study contributes to showing the current situation and orientation of improving local tourism development from the objective perspective of tourists. Help destinations understand the needs, wants and factors that motivate visitors to choose themselves, thereby having an effective targeting strategy. This research also expands the consideration of behavioral theory for tourism-specific products and focuses on the impact of destination characteristics on travelers' decisions. However, this study looked within a limited range of destinations as a province in central Vietnam and studied only with domestic visitors, so the possibility of extrapolation to other destinations is limited. Further research directions may look at other destinations, or consider a destination as a region, or research with groups of international travelers for deeper insights.

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APPENDIX

Latent variables	Measurement scale	Latent variables	Measurement scale
GT	1. This destination has attractive entertainment activities - GT1 2. This destination has unique local cuisine - GT2	CL	1. This destination has good tour guides services- CL1 2. This destination has good quality services - CL2 3. The accommodation services at this destination meet my needs - CL3 4.The local restaurants are rated as having good quality - CL4
TH	1. This destination has many attractive cultural - TH1 2. This destination has many attractive historical places - TH2	MT	1. The climate at this destination is pleasant - MT1 2. This destination has great ecological attractions - MT2
HT	1. This destination has convenient transportation infrastructure - HT3 2. This destination has good public amenities - HT4	TN	1. This destination has beautiful and diverse landscapes - TN1 2. This destination has pediatric products - TN2
LC	1. In general, I am satisfied with my trip to Phu Yen - LC1 2. I will recommend others to visit Phu Yen - LC2 3. I will continue to visit Phu Yen in the future - LC3		

VIETNAMESE TOUR GUIDES' PERCEPTIONS OF WORK STRESS FACTORS

Phạm Phúc Thành[1], Đỗ Thu Hằng[2]

Abstract: *Tour guides play a key role in helping tourism industry to expand because they enhance visitor experience, promote culture exchange and support local economy. Tour guides experience work stress, which may reduce their work productivity. To ensure tour guides work effectively, it is important to investigate work stress factors that occur to tour guides. In the article, a questionnaire is employed to examine Vietnamese tour guides' perceptions of work stress factors. It is found that safety and well-being of tour guides and tourists is what makes most tour guides stressed out.*

Keywords: *Vietnam, tour guides, Work stress factors.*

Tóm tắt: *Hướng dẫn viên du lịch đóng vai trò then chốt trong việc giúp ngành du lịch mở rộng vì họ nâng cao trải nghiệm của khách tham quan, thúc đẩy trao đổi văn hóa và hỗ trợ nền kinh tế địa phương. Hướng dẫn viên du lịch trải qua áp lực làm việc, điều này có thể làm giảm năng suất làm việc của họ. Để đảm bảo hướng dẫn viên du lịch làm việc hiệu quả, việc nghiên cứu các yếu tố gây áp lực khi làm việc xảy ra đối với hướng dẫn viên du lịch là quan trọng. Trong bài viết, một bảng câu hỏi được sử dụng để khảo sát quan điểm của hướng dẫn viên du lịch Việt Nam về các yếu tố gây áp lực làm việc. Kết quả nghiên cứu cho thấy sự an toàn của hướng dẫn viên du lịch và du khách là điều làm cho hầu hết hướng dẫn viên du lịch cảm thấy căng thẳng.*

Từ khoá: *Việt Nam, hướng dẫn viên, căng thẳng do công việc.*

1. INTRODUCTION

According to the statistics by Vietnam National Authority of Tourism [9], the number of travel businesses and accommodation facilities for tourism increased constantly between 2019 and 2023. It is reported that in 2023, there were 37,397 tour guides in Vietnam who were issued cards, an increase of 3,709 tour guides compared to 2022 as reported by Vietnam National Authority of Tourism [9]. These figures show that tourism in Vietnam is recovering strongly and tour guides play a vital role in shaping national image and enhancing service quality.

Stress at work is considered a challenge that global citizens must cope with in their everyday life [5]. This means that employees in every field and area may experience stress at work. It is important for both employers and employees to examine this issue, because work stress has a negative impact on people's well-being and may reduce capacity of workers. Coping with stress at work should begin with exploring the factors that lead to work stress. In tourism industry, tour guides will work effectively if they can manage stress. Therefore, it is signficant to investigate Vietnamese tour guides' perceptions of work stress factors.

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2. LITERATURE REVIEW

2.1. Work stress

Work stress arises when employees have difficulty in coping with tasks, responsibilities and pressure related to their jobs [8]. Similarly, work stress occurs when employees are given tasks that are not matched to their knowledge and skills, which causes problems for employees in the the workplace [6]. Work stress is also defined as the mismatch between the job demands and the workers' capacities to meet such demands [2]. These definitions show that the mismatch between job demands and worker's capacity to deal with the job demands leads to work stress. Work stress is the response people may have when they are unable to deal with work demands and pressures [10]. The definition of World Health Organization adds a key aspect to the term "work stress', which is the response of workers. Therefore, work stress is the internal response of workers to job demands which exceed their ability to cope with those demands.

Work stress can be either positive or negative. Positive stress is the driving force behind workers performing well the tasks assigned to them. Positive stress can be used to improve overall performance and fuel achievement of employees. However, negative stress may cause ill health and diminish the quality of life [5]. Employees are likely to suffer physiological and psychological disorders which result in decreased work productivity, increased absenteeism, and organizational dysfunction [4].

2.2. Work stress factors

There are many factors that contribute to work stress. These factors comprise a career development barriers, difficult relationships with administrators and/ or coworkers, managerial bullying and harassment, isolation, role conflict, lack of autonomy, toxic working environment, excessive workload [4].

Work stress may result from work contents and work context [10]. Work contents includes job content, work load and work pace, participation and control. Work context includes career development, status and pay, the worker's role in organization, interpersonal relationships, organizational culture, work-life balance.

Work stress factors can be examined from six dimensions, including (1) Work's nature strains, (2) Legal and organizational strains, (3) Operational strains, (4) Psychological and social strains, (5) Sectoral strains, and (6) Occupational strains [7]. Each dimension consists of some factors that lead to work stress.

The current study will investigate tour guide's work stress factors by employing six dimensions of work stress factors by Nermin and Demir (2019) because the factors are grouped systematically compared to being listed as in previous studies [4, 10].

2.3. Previous studies

There are some studies on work stress factors of tour guides in foreign countries.

Tour guides have work stress factors, such as death, failure, material and spiritual difficulties, which lead to physiological and pyschological problems [3]. Stress factors can also have a negative impact on tour guides' job attitudes and job satisfaction.

The tour guides in a study by Nermin and Demir [7] reported that the most important work stress factor was legal and organization strain (excessive control, lack of parcipation in decision making, illegal tour guides, low salary) and it is followed by operational, psychological and social, sectoral, occupational and work's nature strains. The study results showed that the female and the single tour guides experienced work stress higher than the male and the married.

When work stress is reduced, vocational commitment and job satisfaction of tour guides will be strengthened [1]. Akgunduz and Eser [1] advise that tour operators and travel agency managers implement managerial practices to reduce work stress and increase job satisfaction of tour guides.

However, little research has been done to investigate work stress factors of Vietnamese tour guides. It is significant to conduct this current study.

3. METHODOLOGY

In the article, questionnaire is the main instrument for collecting data on work stress factors of Vietnamese tour guides, because it offers a fast and inexpensive means of gathering large amount of information from the sample. The questionnaire is designed using Google form and sent to participants via Email and Zalo.

The questionnaire consists of two parts. Part I collects background information of participants, including gender, marital status, age, and educational level. Part II consists of 27 close-ended question items which revolve around six dimensions that describe work stress factors [7] and there are two choices "Agree" or "Disagree" in each question item. Two open-ended question items allow participants to share their opinions on work stress factors that they experienced and the solutions that they used to reduce such factors.

4. RESULTS

There are 40 responses to the questionnaires. The results are presented in three parts, namely Participants' background information, Work stress factors of Vietnamese tour guides and Solutions to cope with work stress factors.

4.1. Participants' background information

40 Vietnamese tour guides completed the questionnaire with 10 male tour guides and 30 female counterparts. The background information of participants is presented in the table below.

Table 1. Participants' background information

	Group	Frequency	Percentage
Gender	Male	10	25%
	Female	30	75%
Marital Status	Single	35	87.5%
	Married	5	12.5%
Age	35 and less	33	82.5%
	36-45	2	5%
	46-55	0	0%
	56 and above	0	0%
Education Level	High school	1	2.5%
	Bachelor's degree	38	95%
	Master's degree	1	2.5%

The table provides the background information of participants in a study based on four demographic categories, namely gender, marital status, age and education level. The gender distribution shows 75% female and 25% male participants. In terms of marital status, 87.5% of participants are single, while 12.5% are married. Age distribution reveals that the majority of participants (82.5%) are aged 35 and below, with smaller percentages in the 36-45 (5%), 46-55 (0%), and 56 and above (2.5%) age groups. Regarding education level, the participants are categorized into high school (95%), bachelor's degree (2.5%), and master's degree (2.5%).

4.2. Work stress factors of Vietnamese tour guides

4.2.1. Work's nature strains

The first work stress factor that Vietnamese tour guides perceive is work's nature strains, which consists of 5 items, including difficult tasks, too many tasks, poor working conditions, difficult customer demands and lack of work control.

Table 2. Work's nature strains

Item	Agree (percentage)	Disagree (percentage)
1. I am stressed because of difficult tasks.	31 (77.5%)	9 (22.5%)
2. I am stressed because of too many tasks.	32 (80%)	8 (20%)
3. I am stressed because of poor working conditions.	30 (75%)	10 (25%)
4. I am stressed because of difficult customer demands.	33 (82.5%)	7 (17.5%)
5. I am stressed because of lack of work control.	20 (50%)	20 (50%)

The table reveals that a majority of individuals agree that they experience work stress due to difficult tasks (77.59%), too many tasks (80%), poor working conditions (75%),

and challenging customer demands (82.5%). However, opinions are divided on stress caused by a lack of work control, with 50% agreeing and 50% disagreeing.

4.2.2. Legal and organizational strains

The second work stress factor that Vietnamese tour guides perceive is related to legal and organizational strains, which consists of 5 items: low salary, no necessary license, breach of regulations or laws, no participation in decision making, and excessive control by organization.

Table 3. Legal and organizational strains

Item	Agree (percentage)	Disagree (percentage)
6. I am stressed because of low salary.	30 (75%)	9 (25%)
7. I am stressed because I have no license to work as a tour guide.	0 (0%)	40 (100%)
8. I am stressed because I am afraid that I will violate regulations or law when working as a tour guide.	32 (80%)	8 (20%)
9. I am stressed because I cannot participate in decision making during the tour.	31 (77.5%)	9 (22.5%)
10. I am stressed because of excessive control by organization.	21 (52.5%)	19 (47.5%)

The table describes the majority of respondents who agree that they experience stress due to factors such as low salary (75.0%), fear of violating regulations or laws (80.0%), inability to participate in decision-making during tours (77.5%), and excessive control by the organization (77.5%). Interestingly, all respondents disagree that they are stressed due to the lack of a license to work as a tour guide (100%).

4.2.3. Operational strains

The third work stress factor that Vietnamese tour guides perceive is operational strains, which comprises 6 items, including unfair treatment by organization, late payment, time pressure, transportation problems, health risks at tour, and customer health problems.

Table 4. Operation strains

Item	Agree (percentage)	Disagree (percentage)
11. I am stressed because of unfair treatment by organization.	19 (47.5%)	21 (52.5%)
12. I am stressed because of late payment.	5 (12.5%)	35 (87.5%)
13. I am stressed because of time pressure.	21 (52.5%)	19 (47.5%)
14. I am stressed because of transportation problems at tour.	34 (85%)	6 (15%)
15. I am stressed because there are risks to my health at tour.	40 (100%)	0 (0%)
16. I am stressed because of customer health problems.	36 (90%)	4 (10%)

The data reveals that the most significant work stress factor agreed upon by the respondents are risks to health during tours and customer health problems, with 100% and

90% agreement rates, respectively. Transportation problems during tours and unfair treatment by the organization also emerge as significant work stress factors with agreement rates of 85% and 52.5%, respectively. On the other hand, late payment and time pressure are less commonly agreed upon stress factors, with disagreement rates of 10% and 15%, respectively.

4.2.4. Psychological and social strains

The third work stress factor perceived by Vietnamese tour guides is associated with psychological and social strains, which includes work-family imbalance, work-social-life imbalance, little career development opportunities, long working hours, emotional exhaustion.

Table 5. Psychological and social strains

Item	Agree (percentage)	Disagree (percentage)
17. I am stress because of work-family imbalance.	32 (80%)	8 (20%)
18. I am stress because of work-social life imbalance.	30 (75%)	10 (25%)
19. I am stress because of little career development opportunities.	22 (55%)	18 (45%)
20. I am stress because of long working hours.	21 (52.5%)	19 (47.5%)
21. I am stress because of emotional exhaustion	31 (77.5%)	9 (22.5%)

The table reveals that a significant majority of individuals agree that they experience stress due to work-family imbalance (80%), long working hours (77.5%), work-social life imbalance (75%), and emotional exhaustion (52.5%). However, a notable portion of respondents also disagree with the statements related to little career development opportunities (45%) and emotional exhaustion (22.5%).

4.2.5. Sectoral strains

The next work stress factor perceived by Vietnamese tour guides is sectoral strains, which includes problems with third-party partners, customer dissatisfaction, and seasonality of tourism industry.

Table 6. Sectoral strains

Item	Agree (percentage)	Disagree (percentage)
22. I am stressed because of problems with third-party partners	18 (45%)	22 (55%)
23. I am stressed because of customer dissatisfaction.	20 (50%)	20 (50%)
24. I am stressed because of seasonality of tourism industry.	34 (85%)	6 (15%)

The table presents sectoral strains experienced by participants in the study. For item 21, 45% of respondents agree that their stress is caused by problems with third-party partners. Moving on to item 22, 50% of respondents agree they are stressed due to customer dissatisfaction. For item 23, the majority of respondents report that the seasonality of the tourism industry cause their work stress.

4.2.6. Occupational strains

The last work stress factor perceived by Vietnamese tour guides is occupational strains, which includes feeling undervalued by organization, lack of professional knowledge, competition with other tour guides.

Table 7. Occupational strains

Item	Agree (percentage)	Disagree (percentage)
25. I am stressed because I feel undervalued by organization.	30 (75%)	10 (25%)
26. I am stressed because I lack professional knowledge.	20 (50%)	20 (50%)
27. I am stressed because I have to compete with other tour guides.	21 (85%)	19 (15%)

The table illustrates occupational strains that participants experience. For item 24, 75% of respondents agree that they feel undervalued by the organization. Moving on to item 25, half of the respondents perceive their stress due to a lack of professional knowledge. Majority of respondents (85%) report that they feel stressed because of competition with other tour guides.

4.3. Solutions to cope with work stress factors

Two open-ended question items at the end of the questionnaire are "What work stress factor often occurs to you?" and "How do you cope with the most common work stress factor that occurs to you?".

Firstly, the most common work stress factor perceived by participants is that tour guides must travel a lot during tours because they must manage logistics, coordinating schedules and ensuring the smooth operation of the tour. There is no solution to cope with this factor because traveling a lot is part of being a tour guide.

Secondly, many respondents report that they experience work-family imbalance due to the unique demands inherent in their profession. Being a tour guide requires workers to work irregular hours, including weekends, holidays, and evenings to accommodate the schedules of tour groups and travel itineraries. To cope with this factor, respondents suggest that tour guides themselves must prioritize self-care by setting boundaries between work and personal life and maintaining regular communication with their families on the road.

Thirdly, it is reported that tour guides suggest a proposal in a tour company, but it has to go through a approval process that requires waiting for implementation rather than being executed immediately. This is associated with operational factor. The solution to cope with the factor is that tour guides should be empowered more from the tour company so that they can work effectively.

5. FINDINGS AND DISCUSSION

Some main findings can be drawn from the results.

Firstly, all of the participants are stressed out because of risks to their health during tours and the majority of the participants find it stressful as they must ensure customers' safety and well-being during tours. This result is in line with the study by Chuang [1].

Secondly, all of the participants report that they have no work stress when it comes to their license to work as a tour guide. This finding shows that Vietnamese tour guides are aware of cards to work as a tour guides.

Thirdly, work stress factors are various and different for Vietnamese tour guides. Many Vietnamese tour guides are stressed because of too many tasks and difficult customer demands. They find it stressful as they do not want to violate regulations or law. What make Vietnamese tour guides stressed are transportation problems, work-family imbalance and seasonality of tourism industry. These findings are consistent with previous studies [4, 7].

6. CONCLUSION

An attempt is made to investigate Vietnamese tour guides' perceptions of work stress factors by using an online questionnaire. Vietnamese tour guides often perceive that their work stress comes from risks to their health and tourists. It can be concluded that safety and well-being is the top priority from the perspective of Vietnamese tour guides. Another conclusion is that Vietnamese tour guides are well-aware of the importance of obeying law, and this explains why they are not stressed out when it comes to tour guide license. The last conclusion drawn from the findings is that tour guides understand deeply the nature of being a tour guide as they know transportation problems may occur at any time and they must suffer being far away from their family. It is noted that the findings and conclusion are applied to the participants in the study and not true to all of Vietnamese tour guides. The study hopes to shed light on the work stress of Vietnamese tour guides, so that those who interact and work with tour guides will join hands to help tour guides cope with work stress factors. This study can serve as a foundation for future research that examine solutions to help Vietnamese tour guides cope with stress factors.

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OPPORTUNITIES AND CHALLENGES
FOR SMART TOURISM DEVELOPMENT IN VIETNAM

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Abtract: *Smart tourism is an emerging trend in the tourism industry that utilizes digital technologies to enhance visitor experiences, improve management efficiency, and promote environmental protection. Vietnam, with its rich cultural heritage, diverse natural landscapes, and friendly people, possesses significant potential for smart tourism development. However, alongside numerous opportunities, Vietnam also confronts various challenges and obstacles in its pursuit of smart tourism. This research aims to assess the current state of smart tourism development in Vietnam, identify the opportunities and challenges, and synthesize the experiences of smart tourism development from other countries. Based on the analysis, the study proposes several solutions to promote smart tourism development in Vietnam. These solutions are expected to contribute to the sustainable growth of smart tourism in the country in the future.*

Keywords: *Smart tourism; Opportunities for tourism development; Vietnam tourism.*

Tóm tắt: *Du lịch thông minh là một xu hướng mới trong ngành du lịch, xu hướng này sử dụng các công nghệ số để nâng cao trải nghiệm của du khách, tăng cường hiệu quả quản lý và bảo vệ môi trường. Việt Nam là một quốc gia có tiềm năng du lịch lớn, với nhiều địa danh nổi tiếng, văn hóa đa dạng và con người thân thiện. Tuy nhiên, để phát triển du lịch thông minh, bên cạnh nhiều cơ hội, Việt Nam cũng phải đối mặt với không ít khó khăn và thách thức. Mục đích của nghiên cứu là nhằm đánh giá được thực trạng phát triển du lịch thông minh ở Việt Nam hiện nay, chỉ ra cơ hội và thách thức cho sự phát triển du lịch thông minh. Nghiên cứu cũng tiến hành tổng hợp kinh nghiệm phát triển du lịch thông minh của một số nước trên thế giới, từ đó rút ra bài học và đề xuất một số giải pháp nhằm thúc đẩy phát triển du lịch thông minh ở Việt Nam. Các giải pháp đề xuất sẽ góp phần đẩy mạnh phát triển du lịch thông minh ở Việt Nam trong thời gian tới.*

Từ khóa: *Du lịch thông minh; Cơ hội phát triển du lịch; Du lịch Việt Nam.*

1. INTRODUCTION

In the current era, as the world rapidly transforms due to the influence of the Fourth Industrial Revolution, the tourism sector cannot maintain its traditional forms. Faced with global changes and shifts in customer preferences, Vietnam - a country rich in cultural heritage and stunning natural beauty - is encountering unexpected opportunities and challenges in the development of smart tourism.

In recent times, advancements in Internet and technology have empowered tourists to alter their behavioral patterns. This shift extends beyond the mere booking of hotel rooms and flights; tourists now access a plethora of visual and auditory data detailing

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the characteristics of their chosen destinations, incorporating this information into their decision-making process. This transformative trend has not only impacted tourists but has also spurred technological advancements at the destinations themselves. Consequently, this has set the stage for the popularization of the term "smart tourism" (Kim *et al.*, 2017). Smart tourism revolves around the adoption of technologies that gather substantial data to generate innovative values, encompassing devices like smart devices, sensors, social media, and mobile technologies. This information-centric perspective takes into account the informational needs and requests of both the tourism industry and the tourists (Del Vecchio *et al.*, 2018; Li *et al.*, 2017). Therefore, imbuing smartness into tourism implies that information communication technologies and destinations can be swiftly exchanged during the decision-making process by enhancing communication among stakeholders (Buhalis and Amaranggana, 2015). Smart tourism is tourism developed on the foundation of modern scientific and technological achievements, particularly information and communication technology, with the aim of applying technology to serve the needs of tourists.

The necessity of researching the opportunities and challenges in smart tourism development in Vietnam becomes increasingly imperative, especially when witnessing the comprehensive transformation of the tourism industry. This is not merely a temporary trend but a long-term journey, presenting abundant challenges and simultaneously opening up limitless opportunities. It is crucial to understand that, to explore and leverage these opportunities effectively, a comprehensive and detailed perspective is needed regarding the factors influencing the development of smart tourism in Vietnam.

In this context, this paper aims to provide an in-depth analysis of the current tourism landscape and future prospects of Vietnam. It will meticulously examine the opportunities and challenges posed by the smart tourism model. This not only enhances our understanding of the overall picture but also establishes a foundation for crafting a sustainable and flexible development strategy for our country's tourism industry.

2. THE CURRENT STATE OF TOURISM DEVELOPMENT IN VIETNAM

Vietnam holds immense potential for tourism development, thanks to its favorable geographical location, climate, and natural conditions, including a coastline stretching over 3,000 km adorned with lush green forests and magnificent landscapes. From 2016 to 2019, Vietnamese tourism experienced robust growth, marked by a continuous increase in the number of visitors. However, by the end of February 2020, the global outbreak of COVID-19 immediately had a negative impact on tourism activities. From March to the end of 2020, Vietnam closed its doors to international tourism, and the tourism industry faced unprecedented challenges. The total number of international visitors to Vietnam in 2020 reached only 3.8 million, a 78.7% decrease compared to the previous year, with over 96% of them arriving in the first quarter of 2020. Despite successfully controlling

the spread of COVID-19 domestically, the domestic tourism sector still faced disruptions due to periodic social distancing measures during outbreaks. Tourism businesses and travel agencies struggled, with many enterprises ceasing operations, and hotels had to close their doors. The stagnation in tourism activities led to a significant drop in tourism revenue in 2020, reaching only 17.9 trillion VND, a 59.5% decrease compared to the previous year (General Statistics Office, 2020).
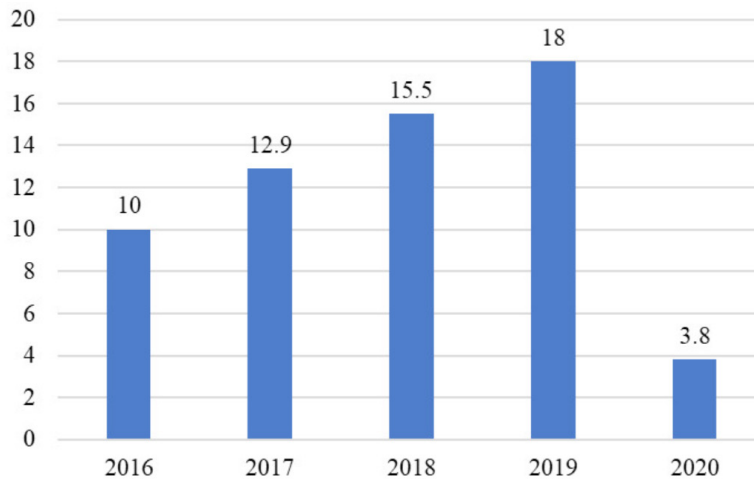
Figure 1. International visitors to Vietnam (million people)

(Source: General Statistics Office)

Due to the impact of the COVID-19 pandemic, the losses in the tourism industry in 2020 exceeded 20 billion USD, with approximately 40-60% of the tourism workforce losing their jobs or facing reduced working hours. About 95% of international travel businesses ceased their operations. The compounding challenges have forced the tourism industry to shift its focus towards exploiting and developing domestic tourism, becoming a lifesaving solution for travel businesses during the pandemic. The tourism sector has launched two Domestic Tourism Stimulus Programs; the first in May 2020 with the theme "Vietnamese people travel in Vietnam", and the second in September 2020 with the theme "Safe and attractive Vietnam tourism". These stimulus programs have received positive responses from localities, businesses, and the public. The promotion of domestic tourism has generated a new trend, spreading inspiration for exploring a safe and appealing Vietnam. It has made substantial contributions to the economic recovery process. Many domestic tourists have experienced and discovered top tourist destinations and lesser-known places in Vietnam at a reasonable cost. Entertainment facilities and shopping activities have been activated, and travel businesses have resumed operations, thereby addressing employment issues for a certain workforce. While the revival of domestic tourism may not be sufficient to boost the entire tourism industry, it serves as a means to

sustain small businesses and stimulate the local economy, mitigating the negative impacts of the pandemic on the overall economy until international tourism resumes its activities (General Statistics Office, 2020).

To overcome the challenges posed by the pandemic, following the first wave of COVID-19, the government directed a boost in domestic tourism and plans to reopen international tourism when conditions permit. On September 18, 2020, the Ministry of Culture, Sports and Tourism issued document number 3455/BVHTTDL-TCDL regarding the stimulation of domestic tourism. The implementation of the domestic tourism stimulus program, titled "Vietnamese People Travel in Vietnam," yielded remarkable results. The Vietnamese tourism community promptly introduced attractive products at what was considered an "unprecedented low" price, ensuring quality to attract domestic travelers. Collaborations among airlines, travel agencies, hotels, and destinations resulted in a more deeply discounted domestic stimulus program, drawing significant interest from domestic tourists.

However, in July, the Vietnamese tourism industry faced renewed challenges as COVID-19 resurged in communities across the country. The rapid resurgence had negative repercussions on domestic tourism. Businesses that were still recovering from the first wave found themselves in an even more challenging situation due to the second wave. Tourism stimulus packages were nearly frozen as a sudden surge in tour cancellations occurred during a period when domestic tourism had passed its peak season.

To expedite recovery after the second wave of COVID-19, the tourism industry continued to launch the second round of the domestic tourism stimulus program, emphasizing safety and attractiveness. The Vietnam National Administration of Tourism issued safety criteria for tourism and introduced the "Safe Vietnam Tourism" application. Additionally, the effective implementation of Plan No. 1749/KH-BVHTTDL in the new context focused on key aspects: (1) Theme-based domestic tourism stimulation activities, emphasizing "Safe and Attractive Vietnam Tourism." Localities and businesses could choose suitable messages reflecting the attractiveness and unique products of their destinations; (2) Targeting Vietnamese tourists and foreigners working or living in Vietnam; (3) Market promotion, introducing destinations, attracting visitors based on previous demand stimulation alliances, encouraging the formation of new demand alliances based on products suitable for sightseeing, eco-tourism, short-term resorts, health care, golf tourism, and MICE tourism; (4) Developing attractive stimulus packages in terms of pricing, program diversity, quality assurance, credibility, and branding. Implementing flexible cancellation and exchange policies to ensure traveler benefits; (5) Strictly adhering to COVID-19 prevention guidelines. Tourism businesses, areas, tourist accommodations, and service providers must ensure safety. Encouraging tourists and businesses to regularly update information on safe destinations through

mainstream media and relevant digital technology applications; (6) Intensifying communication on safe and attractive tourism in Vietnam through central, local, and business media channels to dispel concerns about traveling during the COVID-19 pandemic… (Ministry of Culture, Sports and Tourism, 2020).

Despite the substantial negative impact of the COVID-19 pandemic on the tourism industry in 2020, it has also opened up several opportunities for the sector to overcome the immediate challenges. The profound disruptions caused by two severe waves of the pandemic have led to shifts in behavior, resulting in changes in the demands of both domestic and international tourists. Although the adverse effects of the COVID-19 pandemic on the tourism sector throughout 2020 were severe, they have simultaneously created a fertile ground for the industry to navigate through the imminent challenges. The substantial changes in travel behavior induced by two significant waves of the pandemic have brought about shifts in the preferences and demands of both domestic and international travelers.

In the second half of 2022, after overcoming the COVID-19 pandemic, Vietnam initiated policies to swiftly recover the tourism industry, which had suffered severe losses due to isolation measures and travel restrictions. The tourism sector showed signs of recovery, especially with a rapid resurgence in domestic tourism. However, numerous challenges remained in attracting international visitors back to Vietnam, particularly from key markets like China, South Korea, Russia, the United States, and Europe. According to data from the National Tourism Agency, in 2022, domestic tourist arrivals reached 101.3 million, a 68.8% increase compared to the target of 60 million, surpassing the pre-COVID-19 figure of 85 million domestic tourists in 2019. The total revenue from tourism in 2022 was estimated at 495 trillion VND, exceeding the 2022 plan by over 23% and reaching 66% compared to the pre-pandemic year of 2019. Despite the vibrant domestic tourism market and being one of the first countries in Southeast Asia to reopen after the COVID-19 pandemic, Vietnam had the lowest tourism recovery rate compared to other regional nations, particularly in terms of international arrivals. International visitors to Vietnam reached 3.66 million, representing an 83% decline compared to 2019, the pre-pandemic year, and only achieving 73% of the set target (Nguyen Anh Viet, 2023).

In 2023, Vietnam set a target to welcome 8 million international visitors. However, by August 2023, the number of international arrivals reached 7.8 million, closely approaching the set goal. Capitalizing on this positive outlook, in Resolution 144/NQ-CP during the regular government meeting in August 2023, the government assigned the Ministry of Culture, Sports, and Tourism to lead and coordinate with relevant agencies and localities urgently and resolutely promote innovation in tourism promotion. They were tasked with reviewing, researching, and adjusting the target for international arrivals in 2023 to align with the actual situation, further enhancing tourism recovery

and development. By September 2023, the number of international visitors to Vietnam reached 8.9 million, surpassing the set goal. Traditionally, international tourist arrivals in Vietnam peak from October to April of the following year. Therefore, raising the target for international arrivals from 8 million to 12 to 13 million, 1.5 times the initial goal, is justified and feasible. According to the National Tourism Administration, there are four bases for increasing the target to welcome 12 to 13 million international visitors in 2023: (1) New visa exemption and electronic visa policies, with the validity of electronic visas extended from 30 to 90 days effective from August 15, 2023; (2) Vietnam's increasingly effective bilateral and multilateral foreign policies with the region and the world; (3) The cultural revival strategy, with heritage becoming unique, specialized, and appealing tourism products for international visitors; and (4) Major markets reopening and recovering, including traditional markets for Vietnam, promising a large influx of tourists. As of November 2023, international arrivals in Vietnam reached over 11.2 million, 3.8 times higher than the same period last year and equivalent to 68.9% compared to the same period in 2019 – the year before the COVID-19 pandemic, with several major holidays, is anticipated to provide a breakthrough for Vietnamese tourism to achieve new goals. Out of the 11.2 million international visitors, those arriving by air accounted for over 9.8 million, representing 87.3% of international arrivals, and a 3.7-fold increase from the previous year. Arrivals by road reached over 1.3 million, constituting 11.9% and a 4.1-fold increase. Arrivals by sea reached 87.9 thousand, accounting for 0.8% and a staggering 102.8-fold increase (General Statistics Office, 2023).
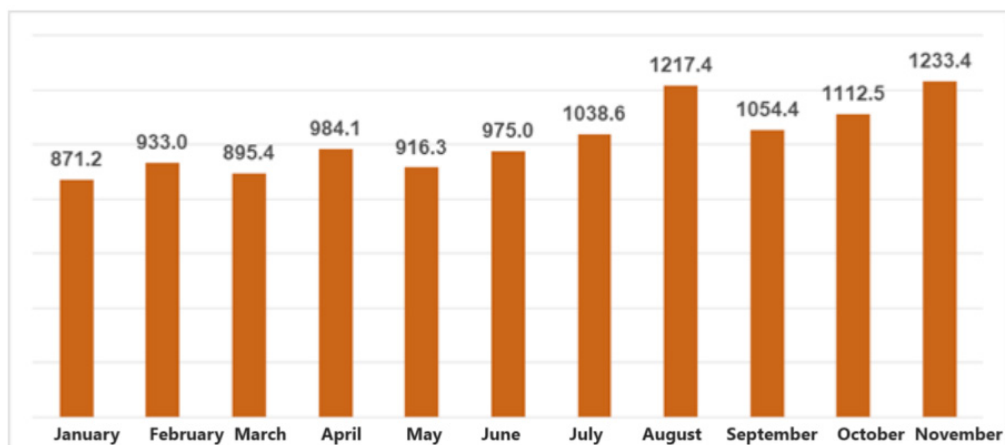

Figure 2. International visitors to Vietnam in the months of 2023 (Thousand people)

(Source: General Statistics Office)

The top 10 international tourist markets to Vietnam in 2023 have undergone changes compared to the pre-COVID-19 era. In 2019, China was Vietnam's largest international

tourist market, followed by South Korea, Japan, and Taiwan. Russia, the United Kingdom, and France were also among the countries with a significant number of visitors to Vietnam. However, the current top 10 international tourist markets for Vietnam include South Korea, China, Taiwan, the United States, Japan, Thailand, Malaysia, Cambodia, Australia, and India. Economic and political instability in Europe following the Russia-Ukraine conflict has significantly impacted travel from this region (General Statistics Office, 2023).

3. THE NECESSITY OF DEVELOPING SMART TOURISM IN VIETNAM

The development of smart tourism in Vietnam is an undeniable trend in the context of the world increasingly transitioning to a technology-based economic model. Vietnam, with its great tourism potential derived from its unique geographical location, needs to seize opportunities and face challenges to develop smart tourism. One of the most important reasons is the increasing emphasis on connectivity and convenience through technology in daily life. Modern-day travelers demand a tourism experience that goes beyond visiting scenic attractions; they seek smart, convenient, and personalized interactions. The application of information technology in tourism optimizes the traveler's experience, from booking accommodations to planning itineraries and receiving information about tourist destinations. An essential aspect of smart tourism is the ability to manage information and data to enhance the efficiency of tourism industry performance. The use of big data and artificial intelligence in tourism can help predict demand and trends, allowing tourism businesses to adjust their business strategies flexibly and respond promptly. Furthermore, the development of smart tourism brings significant benefits in promoting and marketing the country. Vietnam can leverage various communication technologies to promote its cultural heritage, history, and natural beauty. The modern and innovative approach to promotion through online platforms will attract global attention from tourists and enhance Vietnam's position on the international tourism map. Developing smart tourism in Vietnam ensures not only convenience and personalization for tourists but also serves as the key to unlocking significant opportunities for the tourism industry and promoting the national image on the international stage.

4. SMART TOURISM DEVELOPMENT EXPERIENCES IN SOME COUNTRIES

4.1. Experience of South Korea

South Korea is one of the early successful countries in the development of smart tourism. Some of South Korea's experiences in smart tourism development can be applied to Vietnam. Firstly, South Korea has utilized smart technology, digital technology, and information technology to improve and enhance the quality of tourism services, meeting the increasing demands of tourists. This helps tourists reduce costs while assisting tourism businesses and destinations in maximizing profits (Taehyee Um *et al.*, 2022).

This experience can be widely applied in various destinations in Vietnam, creating convenience for tourists during their travel experiences. The construction of smart cities and smart destinations in South Korea is also a model that countries like Vietnam can study and apply. Smart tourism contributes to facilitating online tourism, and Vietnam, being a dynamic economy in Asia with a young population and strong Internet development, is ideally positioned for investing in the development of smart tourism, following the model of smart destinations and cities in South Korea, especially in the realm of online tourism.

4.2. Experience of Singapore

Singapore's vision is to become one of the most sustainable urban destinations in the world. The Singapore Tourism Board is closely collaborating with stakeholders in the tourism industry to implement a sustainable strategy and roadmap for the destination in line with the Green Plan. Firstly, the development of both hard and soft skills for sustainable tourism is crucial. For instance, HyperDrive, the electronics brand of the US-based Sanho Corporation specializing in IT, phone accessories, and world-renowned technology with headquarters in Silicon Valley, California, has introduced the first electric go-kart racing model applied in both real-life and virtual gaming. This innovation provides an environmentally friendly and enjoyable experience for speed enthusiasts. HyperDrive is considered a unique concept in Southeast Asia and was launched in the first half of 2023. Furthermore, to support sustainable development in the tourism sector, Singapore has implemented the Sustainable Tourism Program (TSP). Specifically, tourism businesses can leverage the TSP to enhance skills and train employees in sustainability-related skills or apply solutions to make their businesses more sustainable in the long term. Another crucial aspect is investing in the local community to attract global tourists. Travelers seek authentic local experiences, such as locally sourced food and drinks, which contribute to a more balanced and environmentally friendly approach. Singapore continues to invest in local entrepreneurs and farmers, providing a safe working environment and training a skilled workforce to encourage local community development. Additionally, there is a focus on investing in and preserving cultural heritage, national monuments, and historic districts to enhance the overall experience for tourists (Smart Nation and Digital Government Office, 2022).

4.3. Experience of Japan

In Japan, the early emphasis on smart tourism implementation demonstrates the country's proactive stance in leading global tourism trends and becoming a favored destination for international travelers. Japan has also enacted various policies and specific solutions to develop smart tourism, including: Implementation of electronic visas for tourists starting from April 2020, aiming to simplify the visa application process and promote growth in Japan's tourism sector. Additionally, as of July 2020, Japan introduced

visa waivers for citizens of 68 countries and territories to visit Japan for tourism or business within a 15-day period without the need for a visa; To further promote smart tourism in Japan, the Ministry of Economy, Trade, and Industry (METI) conducted surveys both domestically and internationally to promote "Cool Japan," a strategy for promoting Japanese culture and tourism. The results are expected to be announced on YouTube and the official website after the COVID-19 period; Increased budget allocation for the tourism industry; Development of a multilingual information system (English, Chinese, Korean, Japanese), providing free Wi-Fi support, and promoting cashless transactions at major tourist destinations. Restaurants and retail stores have installed machines with multilingual introduction and translation systems. The dissemination of tourist information centers utilizing the latest technologies such as AI chatbots is also encouraged; Promotion of improvements in the search methods for accommodations and hotels through the use of smart utility software; Expansion of convenience stores in rural areas, introducing smart applications, and enhancing the digitization of tax exemption procedures to improve the overall digital environment (LI Bin & WANG Guan-yu, 2020).

5. OPPORTUNITIES AND CHALLENGES FOR THE DEVELOPMENT OF SMART TOURISM IN VIETNAM

5.1. Opportunities for the Development of Smart Tourism in Vietnam

The development of smart tourism in Vietnam presents numerous opportunities for the tourism industry. The Party and the State have outlined strong and specific strategies and policies to leverage the achievements of the Fourth Industrial Revolution (4.0), particularly in the realm of smart tourism. Vietnam's tourism sector is rapidly growing and dynamic, establishing close connections with regional and global entities in a professional and modern direction. This is a prerequisite for enhancing digital connectivity and fostering the development of smart tourism. Moreover, Vietnam's digital and telecommunications infrastructure has progressed equivalently to global standards. The global and Vietnamese tourism sectors are leading the trend in harnessing the achievements of the Fourth Industrial Revolution in various stages and processes of providing services to tourists, including accommodation facilities, travel agencies, tourism service providers, and tourist destinations. Additionally, the startup and innovation movement based on new technological platforms is thriving in Vietnam, focusing on resolving challenges that arise during the development process. The burgeoning smart tourism landscape in Vietnam not only enriches the travel experience but also contributes to the overall economic and technological advancement of the country. The comprehensive approach adopted by the Party and the State aligns with global trends and positions Vietnam as a key player in the smart tourism revolution. As the tourism industry continues to evolve in Vietnam, it is expected to further capitalize on the opportunities presented by the Fourth Industrial Revolution, driving innovation, and ensuring sustainable growth in the years to come.

5.2. Challenges for the Development of Smart Tourism in Vietnam

Despite the significant potential of smart tourism and a large customer base in Vietnam, the online travel market still faces numerous limitations. The predominant characteristics of Vietnamese tourism businesses, mainly small and medium-sized enterprises with limited capital engaged in small-scale retail operations, hinder their ability to financially invest in technology applications. Global online travel companies such as *Agoda.com, Booking.com, Traveloka.com*, and *Expedia.com* currently dominate the market, holding approximately 80% market share. In contrast, only around 10 Vietnamese companies operate in the online travel sector, including *Ivivu.com, chudu24.com, mytour.vn, tripi. vn, vntrip.vn*, among others. Although smart tourism presents a lucrative market for Vietnamese tourism businesses, it has not been fully exploited. The existing infrastructure is also a significant challenge. Information technology infrastructure (telecommunications networks, accompanying modern equipment) is unevenly distributed among different regions, with a clear disparity between urban areas and rural or mountainous regions. This poses difficulties in developing smart tourism or creating products with high-tech components. Another obstacle is the workforce. Developing smart tourism requires an intelligent workforce. However, current tourism education programs predominantly focus on traditional teaching methods, and the adaptation to technology is slow. To ensure that personnel are well-versed in technology for the tourism industry, companies often have to invest both time and resources in retraining from scratch.

6. SOLUTIONS TO PROMOTE SMART TOURISM DEVELOPMENT IN VIETNAM

Implementing smart tourism not only helps the tourism industry address numerous internal issues but also promotes sustainable development, harmonizing with culture and the environment. Some of the solutions to promote smart tourism development in Vietnam are:

- Developing a national smart tourism platform that integrates data from various sources, such as government agencies, tourism businesses, social media, and mobile devices. This platform can provide real-time information and services to tourists, such as travel planning, booking, navigation, feedback, and recommendations. It can also help tourism managers to monitor and analyze the tourism market, identify problems and opportunities, and design policies and interventions accordingly.

- Enhancing the digital infrastructure and connectivity in tourist destinations, especially in rural and remote areas. This can improve the accessibility and quality of tourism services, as well as facilitate the adoption of smart devices and applications by tourists and local residents. It can also enable the use of emerging technologies, such as artificial intelligence (AI), Internet of Things (IoT), blockchain, and cloud computing, to create innovative and personalized tourism products and solutions.

- Building the capacity and skills of tourism stakeholders, especially small and medium-sized enterprises (SMEs) and local communities. This can help them to leverage the benefits of smart tourism technologies, such as increasing productivity, reducing costs, enhancing customer satisfaction, and creating new sources of income. It can also foster a culture of innovation and collaboration among tourism actors, as well as encourage them to participate in the co-creation and co-delivery of smart tourism experiences.

- Developing a legal and regulatory framework that supports smart tourism development and ensures the protection of data privacy and security, intellectual property rights, consumer rights, and social responsibility. This can create a conducive environment for smart tourism innovation and investment, as well as address the potential risks and challenges posed by smart tourism technologies, such as cyberattacks, ethical dilemmas, digital divide, and social exclusion.

CONCLUSION

While smart tourism in Vietnam opens up promising opportunities, it also faces significant challenges. Strong government and sponsorship organization investments, particularly to support small and medium-sized enterprises, are crucial keys to optimizing the potential of the tourism industry. Focusing on improving information technology infrastructure and training a skilled workforce is essential. This will not only help tourism businesses enhance service quality but also create a favorable business environment. Simultaneously, attention to developing a smart workforce in the tourism industry can ensure sustainability and comprehensive development for Vietnam's tourism brand. This will be a crucial step toward a smart and modern tourism sector, contributing to economic development and enhancing Vietnam's international standing in the global tourism industry.

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ONLINE PRIVACY CONCERNS
AND WILLINGNESS TO SHARE BEHAVIORAL INFORMATION OF TRAVELERS

Lê Thị Huệ Linh[1]

Abstract: *The study investigates antecedents of online privacy concerns and their impact on tourists' behavioral data-sharing willingness. The study employed a quantitative research method, surveying 406 respondents. The research model was evaluated using Structural Equation Modeling (SEM). The findings reveal that privacy awareness and privacy experience affect travelers' privacy concerns. Online privacy concerns negatively impact the willingness to share information. In addition, trust and perceived benefits are found that have affected the willingness to share information. This study also offers implications for researchers and practitioners.*

Keywords: *Privacy concerns, information sharing, data sharing, behavioral information sharing, smart tourism.*

Tóm tắt: *Nghiên cứu này điều tra các tiền đề của mối lo ngại về quyền riêng tư trực tuyến và tác động của chúng đối với sự sẵn lòng chia sẻ dữ liệu hành vi của khách du lịch. Phương pháp nghiên cứu định lượng được áp dụng bằng cách khảo sát 406 người trả lời. Mô hình nghiên cứu được đánh giá bằng Mô hình phương trình cấu trúc (SEM). Các phát hiện cho thấy nhận thức về quyền riêng tư và trải nghiệm về quyền riêng tư ảnh hưởng đến mối lo ngại về quyền riêng tư của khách du lịch. Những lo ngại về quyền riêng tư trực tuyến tác động tiêu cực đến sự sẵn lòng chia sẻ thông tin. Ngoài ra, niềm tin và lợi ích nhận thức được cho là có ảnh hưởng đến sự sẵn lòng chia sẻ thông tin. Nghiên cứu này cũng cung cấp hàm ý cho các nhà nghiên cứu và thực hành.*

Từ khóa: *Mối quan ngại về quyền riêng tư, chia sẻ thông tin, chia sẻ dữ liệu, chia sẻ thông tin hành vi, du lịch thông minh.*

1. INTRODUCTION

Technological advancements include things like sensors, smart devices, augmented and virtual reality, big data, sensors, artificial intelligence and machine learning, and the Internet of Things. Radical disruptions have been introduced into the tourism industry, changing both customer and company behavior. Due to the fact that technology is frequently used to mediate interactions between tourists and providers of tourism services (e.g., online reservations prior to travel, online reviews following travel, mobile payments while traveling), businesses that specialize in offering distinctive, personalized travel experiences largely depend on gathering information about their clientele, including lifestyle, location, personal preferences, and personality traits. Due to possible privacy concerns, people who frequently travel and give information to providers of tourism services are a little hesitant.

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Information privacy concerns, also known as privacy concerns, are people's feelings that they have no control over their personal information (Dinev & Hart, 2005). "Privacy concern" has come to refer to a sense of privacy violation rather than an affective state, even though the term "concern" usually refers to an affective state (Malhotra et al., 2004; Smith et al., 1996; Son & Kim, 2008). A metric called Privacy Concerns assesses the possibility that information about a user's online activities will be collected, disseminated, and altered (Brecht et al., 2012). Moreover, privacy concern was a cognitive feature that showed the lack of affective variables in information privacy research (Anderson & Agarwal, 2011). It was also perceived as a cognitive result of weighing the benefits and drawbacks of privacy disclosure, according to the privacy calculus perspective (Dinev & Hart, 2005). Based on their point, this research regards privacy concerns as a cognitive consideration in this analysis.

Information systems research places a strong emphasis on privacy concerns (Xu, 2009). The bulk of studies took a multidimensional approach to privacy concerns, although some examined privacy concerns as a single-dimensional aspect (Dinev & Hart, 2005). The impact of varying degrees of privacy concerns on numerous dependent variables, including the intention to transact online or provide information, has been studied in information systems research (Bélanger & Crossler, 2011; Yu et al., 2020). The APCO framework of information privacy described current privacy research with privacy concerns as its core, and its antecedents and outcomes as its outcomes. Smith et al. (2011) suggested that additional research be done on the causes of privacy concerns. Furthermore, Li (2011) found multiple antecedents to privacy concerns in her systematic review of recent research findings on the subject of privacy. According to Bélanger and Crossler (2011); Miltgen and Smith (2015), these are (a) individual factors, (b) social factors, (c) organizational factors, (d) macro-environmental factors, and (e) information contingencies. Research has cross-validated some results (perceived privacy control has a negative impact on privacy concerns, for example), but the results varied amongst studies (Li, 2011). A person's privacy concerns are influenced by a range of factors, from personal traits to knowledge contingencies, though the results are inconsistent for specific reasons. It would be essential to clarify the conflicting effects of some important antecedents, such as individual awareness and experience, and to identify external variables at different phases. Therefore, further research is required to examine the implications of the antecedents of different privacy concerns.

Anuar and Gretzel (2011) claim that incentives are enhanced when it comes to tourism, suggesting that privacy concerns can be put on hold for a while. Contrarily, tourism activities often involve locations outside of the ordinary sphere and are supported by unidentified service providers, which heightens risk perceptions and, consequently, privacy concerns. To address the unique situations that arise during travel and tourism, it is therefore argued

that privacy studies are necessary in the context of tourism. In order to help tourism service providers pay attention to this issue and further improve their services, this research hopes to close the research gap. The current study investigates travelers' privacy concerns and how they affect travelers' willingness to share data with travel service providers.

The rest of the paper is structured as follows: the next section presents the theoretical basis. Section 3 discusses hypotheses and research models. Next, the section on methods and analysis of results. Finally, discussion, implications and conclusions are presented.

2. THEORETICAL BACKGROUND

Privacy Calculus Theory (PCT) (Laufer & Wolfe, 1977) describes individuals comparing the benefits and risks of disclosing personal information. Privacy concerns, perceived benefits, and information-sharing behavior are also part of this theory. Privacy concerns decrease information disclosure behavior, while perceived benefits encourage it (Xu, 2009). Sun et al. (2019) found that users' perceived benefits were positively associated with their intention to share personal information because their privacy concerns increased, and their data-sharing intention declined.

This theory also takes into account behavior related to sharing information, privacy concerns, and perceived benefits. Information disclosure behavior is encouraged by perceived benefits but is discouraged by privacy concerns (Xu et al., 2009). According to Sun et al. (2019), users' perceived benefits were positively correlated with their intention to share personal information, as evidenced by the rise in privacy concerns and decline in data-sharing intention. During privacy decision-making, people evaluate the fundamentally possible costs and benefits of each case in order to conduct a cognitive assessment of the implications of their choices, according to the PCT. Therefore, people will be more willing to share their knowledge if perceived benefits specifically outweigh costs, which is supported by this intriguing trade-off calculus study. Furthermore, the calculus of privacy is highly context-dependent; in certain circumstances, people are prepared to divulge personal information in return for particular advantages, but in other circumstances and moments, people are more inclined to take drastic measures in order to preserve their privacy (Acquisti et al., 2015).

The present study exploits PCT in the context of smart tourism. Specifically, the study investigates the antecedents of online privacy concerns and their impact on travelers' willingness to share information.

3. HYPOTHESIS DEVELOPMENT AND RESEARCH MODEL

3.1. Antecedents of Online Privacy Concerns

Privacy Awareness

One aspect of privacy concerns in online marketing is the understanding of privacy procedures (Malhotra et al., 2004), although marketing companies have frequently disregarded customers' awareness of privacy issues (Hey Tow et al., 2010). The perception

of hazards associated with privacy issues is significantly influenced by privacy awareness (Cheng et al., 2021). The degree to which a person is aware of an organization's privacy policies is referred to as privacy awareness (Malhotra et al., 2004; Phelps et al., 2000; Smith et al., 2011). In smart tourism, travelers have been required to provide information before using services, including biometric information and behavioral data. A higher level of privacy awareness makes people more aware of how important their data is. As a result, compared to people who are less aware of privacy, they will perceive greater hazards, such as the possibility of information privacy disclosure. Thus, the hypothesis is proposed:

H1: Privacy awareness positively impacts travelers' online privacy concerns.

Privacy Knowledge and Privacy Experience

Privacy Experience is the capacity to identify threats in a particular setting and accurately evaluate environmental factors that may lead to a lack of awareness about privacy, which may arise from encountering these dangers (Masur, 2018). Experienced individuals tended to express fewer privacy concerns and to specifically adopt more protective behaviors, which is generally quite significant. Previous research also suggested that visitors with more privacy experience may feel like they have more control over their data, which reduces their privacy concerns (Youn, 2009). Moreover, it has been suggested that travelers who are more knowledgeable about persuasion are likely to be more dubious of marketing and advertising tactics and be able to handle them better (Youn, 2009).

In conclusion, this research defines individual experiences and knowledge that can offer helpful insight into a company's general privacy and data protection policies, based on all of the previously stated arguments. Therefore, this study makes the assumption that travelers who interact with a range of tourism providers, who have prior privacy experience, and who are aware of privacy issues, will be more aware of and concerned about the information practices of tourism providers. Thus, the following hypothesis are proposed:

H2: Privacy experience positively impacts travelers' online privacy concerns.

H3: Privacy knowledge positively impacts travelers' online privacy concerns.

3.2. Trust

According to the literature that is currently available, trust is especially important when human-artificial intelligence (AI) partnerships are just getting started (Ostrom et al., 2019). Thus, trust should thus be considered, because the purpose of this study was to investigate visitors' willingness to share information and privacy concerns when using new technologies in smart tourism. Trust is defined as an attitude of confident expectancy in a situation where there is a possibility that one's weaknesses may be attacked (Corritore et al., 2003). According to this study, trust is defined as consumers' perceptions of a service provider's capacity to safeguard personal information against misuse and unauthorized access. Risk removal is unrealistic and requires trust because it can never be verified prior to the start of a deal. Travelers are extremely cautious about their privacy and the potential

misuse of their personal information when interacting with suppliers (Yoo et al., 2017). Suppliers who are viewed as more reliable in the tourism context will enhance travelers' disclosure of information (Morosan & DeFranco, 2015).

Travelers are less concerned about privacy when they have faith in a travel service provider, as they feel that their personal data will be secure. Therefore, it is reasonable to presume that:

H4: Trust negatively impacts travelers' online privacy concerns.

According to earlier studies, trust is the extent to which consumers believe a business is reliable in safeguarding their personal data (Malhotra et al., 2004). The literature on procedural justice in e-commerce offered two perspectives on trust: trust in the business and trust in the system that facilitates transactions (Krasnova et al., 2012). Expectations of service delivery procedural norms can be the first step toward building trust in hotels (Dinev & Hart, 2006). According to Kim et al. (2019), when trust is established, people will see sharing personal information as having more benefits and less risks. Trust Theory also indicates that trust increased personal information disclosure. Thus, this research has the following hypothesis:

H5: Trust positively impacts willingness to share information.

3.3. Perceived Benefits

This research conceptualizes people's perceptions of the benefits of personal information disclosure about tourists in terms of how beneficial these benefits are to individuals, in accordance with the Privacy Calculus Theory (Wang et al., 2016). In the event that customers believe they can obtain advantages from disclosing information in certain contexts, such as amusement (Lee et al., 2008), practicality (Milne & Gordon, 1993), individualized and customized services (Awad & Krishnan, 2006; Graeff & Harmon, 2002; Xu, Luo, et al., 2011), and financial incentives (Lee et al., 2008), they will then typically give up some of their anonymity in exchange for the possible advantages of using tourism services. Consequently, the present study puts forth the subsequent hypothesis:

H6: Travelers' perceived privacy benefits positively impact their willingness to share their information.

3.4. Online Privacy Concerns

Information sharing willingness was found to be negatively impacted by privacy concerns (Wozniak et al., 2018). Yoo et al. (2017) state that people are worried about confidential information being disclosed when Information Communication Technology (ICT) is being implemented. Due to their reliance on network infrastructure, gamified smart tourism apps raise privacy concerns because they give app operators access to user data like location and preferences. Travelers are worried about their privacy when interacting with travel agencies and the potential for misuse or disclosure of private information.

Information about an individual's search and browsing habits (e.g., cookies), preferences and interests (e.g., hotel room preference or dietary restrictions), or position and activity details (e.g., floors climbed, steps) is referred to as behavioral data. Businesses will be able to provide more targeted services by collecting behavioral data, which is why these data are so important. "Consumer-centric marketing" offers a wide range of more precise information in addition to tailored products and services that fit your preferences and needs; however, people feel as though they are being tracked by these customized solutions, which has sparked privacy concerns (Mathews-Hunt, 2016). While location-based services (LBS) offer consumers a number of advantages, like personalization and the ability to place purchases, entertainment, and content in one convenient location, they can also be dangerous.

According to Junglas et al. (2008), some customers might think that using LBS has a lot of advantages, but if privacy concerns are too great, they might decide against it. It symbolizes people's concerns about potential opportunistic actions involving their personal data (Dinev & Hart, 2006).

According to Malhotra et al. (2004), privacy concerns are defined as the degree of worry a user has about the gathering of personal data, the user's control over the data collected, and the user's awareness of how the data is used. According to Lowry et al. (2012), this kind of cognition makes people withhold and conceal personal information, which is a significant barrier to online knowledge provision and exchange. Privacy concerns are therefore frequently viewed as disparaging particular behavior. Consequently, this study predicts that travelers with more privacy concerns will be less inclined to divulge personal information.

H7: Travelers' privacy concerns negatively impact their willingness to share information.
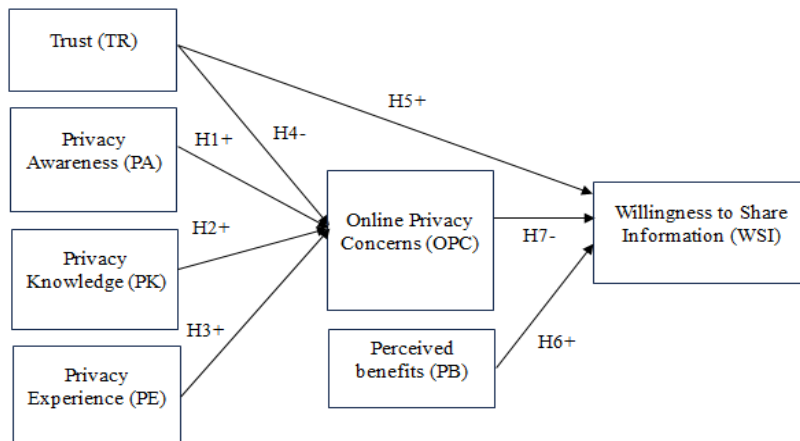
Figure 1. Proposal Model

4. METHODOLOGY

This research used the quantitative research method by surveying 413 respondents. The constructs used in this study were taken from earlier research. Privacy awareness adopted from Xu, Dinev, et al. (2011); privacy experience adopted from Li (2014); privacy knowledge adopted from Youn (2009); perceived benefits adopted from Wang et al. (2016); online privacy concern adopted from Wozniak et al. (2018); trust adopted from Benamati et al. (2017) and willingness to share information adopted from Wakefield (2013). A Likert scale with seven points is used to evaluate the observed variables.

Respondents between the ages of 18 and 65 who reside in Ho Chi Minh City and have traveled were sought out for this study. In this research, the sample was selected using a stratified random sampling technique. Of the 413 responses, 406 were valid for data analysis. Table 1 provides information on the demographic characteristics of the respondents. The structural equation modeling method was used to test the research hypotheses.

Table 1: Descriptive statistics of respondents

	Items	Frequency	Percentage (%)
Gender	Female	269	66.26
	Male	133	32.76
	Other	4	0.98
Age	18 - 24	90	22.17
	25 - 39	150	36.95
	40 - 54	103	25.37
	55 - 64	41	10.10
	> 64	22	5.42
Occupation	Student	88	21.67
	Part-time job	23	5.67
	Full-time job	235	57.88
	Unemployment	20	5.17
	Retirement	39	9.61
Monthly income (VND)	< 3 million	38	9.36
	3 → < 5 million	58	14.29
	5 → < 7 million	58	14.29
	7 → < 10 million	81	19.95
	10 → < 15 million	112	27.59
	15 → < 20 million	20	4.92
	>= 20 million	39	9.60

	Items	Frequency	Percentage (%)
People in family	1 → 3	109	26.85
	4 → 6	276	67.98
	> 6	21	5.17

5. FINDINGS

5.1. Measurement model assessment

The results of evaluating the measurement model show that the observed variables all meet the measurement requirements for the constructs (Table 2), with factor loadings ranging from 0.809 to 0.942. Cronbach's Alpha and Composite reliability (CR) of the constructs are both greater than 0.7, specifically Cronbach's Alpha from 0.874 to 0.957 and CR from 0.922 to 0.964. Therefore, the model measures the constructs with sufficient reliability. The scales of the constructs reached convergent validity with an AVE value greater than 0.5 (from 0.771 to 0.851). The ratio of HTMT between constructs is below 0.90 (Table 3), showing that the discriminant value of the scales is satisfactory. Thus, the model measures the resulting constructs with sufficient reliability, convergent validity, and discriminant validity.

Table 2: Final scale items and measurement properties

Construct Indicators	Loading Indicators	Composite Reliability	Cronbach's Alpha	Average Variance Extracted (AVE)
Trust (TR)		0.952	0.933	0.834
TR1	0.884			
TR2	0.936			
TR3	0.925			
TR4	0.906			
Privacy Awareness (PA)		0.937	0.899	0.832
PA1	0.891			
PA2	0.921			
PA3	0.925			
Privacy Experience (PE)		0.945	0.913	0.851
PE1	0.924			
PE2	0.908			
PE3	0.925			
Privacy Knowledge (PK)		0.936	0.902	0.831
PK1	0.921			
PK2	0.942			
PK3	0.870			

Construct Indicators	Loading Indicators	Composite Reliability	Cronbach's Alpha	Average Variance Extracted (AVE)
Online Privacy Concerns (OPC)		0.964	0.957	0.771
OPC1	0.809			
OPC2	0.898			
OPC3	0.867			
OPC4	0.913			
OPC5	0.923			
OPC6	0.908			
OPC7	0.832			
OPC8	0.870			
Perceived Benefits (PB)		0.935	0.896	0.828
PB1	0.879			
PB2	0.927			
PB3	0.923			
Willingness to Share Information (WSI)		0.922	0.874	0.798
WSI2	0.922			
WSI3	0.910			
WSI4	0.846			

Table 3: Discriminant Validity: HTMT Ratios

Constructs	WSI	PA	PB	PE	PK	TPC	TR
WSI							
PA	0.071						
PB	0.351	0.529					
PE	0.084	0.240	0.095				
PK	0.355	0.384	0.514	0.146			
TPC	0.113	0.528	0.409	0.407	0.216		
TR	0.470	0.260	0.591	0.099	0.485	0.060	

5.2. Structural model assessment

Table 4 results show that the constructs' VIF values range from 1.099 to 1.725 (less than 3), indicating that multicollinearity is not present in the research model (Hair et al., 2019; Hair Jr et al., 2017).

P-Values for the relationship between PA and PE with OPC are less than 0.05, supporting hypotheses H1 and H3. H2 and H4 are rejected because PK's and LOP's P-Values are 0.235 > 0.05 and 0.162 > 0.05, respectively. PA and PE, which have standardized coefficients of 0.430 and 0.278, respectively, are variables that have a

positive effect on OPC. Whereas PE has a negligible effect on OPC ($f^2 = 0.105$), PA has a moderate effect ($f^2 = 0.230$).

TR and PB, with f^2 coefficients of 0.089 and 0.033, respectively, have a marginally positive effect on WSI. H5 and H6 are thus approved. OPC lowers WSI ($f^2 = 0.036$ and a standardized coefficient of -0.185).

Table 4: Hypotheses testing

Hypothesis	Path Relationships	Original Sample	P-Values	f^2	VIF
H1: Supported	PA -> OPC	0.430	0.000	0.230	1.199
H2: Rejected	PK -> OTPC	0.062	0.235	0.004	1.364
H3: Supported	PE -> OPC	0.278	0.000	0.105	1.099
H4: Rejected	TR -> OPC	-0.075	0.162	0.006	1.299
H5: Supported	TR -> WSI	0.321	0.000	0.089	1.485
H6: Supported	PB -> WSI	0.211	0.009	0.033	1.725
H7: Supported	TPC -> WSI	-0.185	0.007	0.036	1.224

Lastly, the coefficient of determination R^2, index Q^2, and SRMR are applied to assess the research model's fit and degree of explanation. With an R^2 of 0.332 for OPC, the research model's independent variables account for 33.2% of OPC's variation. WSI's R^2 of 0.222 shows that OPC accounts for 22.2% of the variation in WSI. The path model's prediction accuracy can be considered satisfactory as the Q^2 values — namely, 0.247 for OPC and 0.169 for WSI — all exceed 0. The research model is deemed appropriate, as indicated by the SRMR value of 0.059 < 0.08.

6. DISCUSSION AND IMPLICATIONS

6.1. Discussion

First, this study further emphasizes a significant relationship was found to exist between privacy awareness, privacy experience, and travelers' privacy concerns. The findings were supported by previous studies, such as Hey Tow et al. (2010); Malhotra et al. (2004); Phelps et al. (2000); Smith et al. (2011).

Second, previous researchers suggested that privacy knowledge positively impacts privacy concerns, but in this study, privacy knowledge does not impact travelers' online privacy concerns. In addition, this research also indicates trust does not affect the online privacy concerns of tourists. The cause of inconsistency in research results may be due to different research subjects.

Third, trust and perceived benefits significantly impact travelers' willingness to share information. These results are consistent with previous studies (Ex: Ostrom et al., 2019; Yoo et al., 2017; Morosan & DeFranco, 2015; Wang et al., 2016).

Finally, online privacy concerns have a negative impact on the willingness to share information. Scholars also found similar results in prior studies. Privacy concerns were found to negatively impact the willingness to share information (Ex: Dinev and Hart (2006); Junglas et al. (2008); Mathews-Hunt (2016); Wozniak et al. (2018)).

6.2. Theoretical and Practical implications

6.2.1. Theoretical Implications

This research aims to contribute to the literature on privacy concerns and information disclosure in the Vietnam tourism context. This study examines antecedents of tourists' online privacy concerns (OPC), as well as the relationships between privacy concerns, perceived benefits, trust, and tourists' willingness to share information. Because privacy behavior is extremely context-dependent, research on these linkages, which are crucial to information disclosure, is increasing scientific knowledge and adding to the smart tourism and privacy literature.

The current study extends privacy calculus theory in the context of smart tourism. This research focuses on exploring the antecedents of privacy concerns and their impact on the willingness to share behavioral information. In addition, perceived benefits are also examined concerning information sharing.

6.2.2. Practical Implications

The impact of tourists' privacy concerns on their willingness to share information is made more apparent to tourism service providers by this research. The study's findings can give travel industry providers information to reduce tourists' privacy concerns and promote information sharing. Tourism service providers can guarantee a more personalized and enhanced customer experience while protecting tourists' privacy by using the information they share.

7. CONCLUSION

The present study has investigated the factors that influence tourists' data-sharing behaviors. This research also explores the antecedents of privacy concerns. Furthermore, these variables that affect travelers' data-sharing practices and privacy concerns have been measured in this study. Trust, privacy benefits, and privacy concerns all affect willingness to share information. Privacy concerns are influenced by privacy awareness and privacy experience. This study suggests some valuable strategies for managers of travel service providers to allay travelers' privacy concerns and encourage them to share more behavioral data, based on data analysis.

In addition, the study also has some limitations that future studies can continue to investigate. First, this study examined the impact of several factors on tourists' privacy concerns. In the future, further studies can consider the influence of other factors such as self-efficacy, perceived satisfaction, and personality characteristics. Second, future

research could examine the role of mediating and moderating variables that were not investigated in this study. Finally, individuals may have different concerns about various types of personal information. Therefore, further research in the future should categorize privacy concerns into small groups to be able to explore this topic more deeply.

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SOME TYPICAL MODELS OF HIGH-TECH TOURISM - AGRICULTURE IN VIETNAM AND THE WORLD TODAY

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Tóm tắt: *Du lịch là một ngành công nghiệp quan trọng tại nhiều quốc gia trên thế giới, bao gồm cả Việt Nam. Phát triển ngành du lịch và những lợi ích kinh tế luôn là mối quan tâm hàng đầu của một quốc gia đang phát triển như Việt Nam trong nhiều năm qua. Để đạt được những mục tiêu này, việc áp dụng công nghệ cao vào phát triển ngành du lịch là một xu hướng không thể tránh khỏi, là một phần của xu hướng toàn cầu mà quốc gia chúng ta cần học hỏi và áp dụng. Nhận thức về sự quan trọng của vấn đề này, bài viết trình bày các khái niệm chung về nông nghiệp cao cấp công nghệ - du lịch, đánh giá và phân tích một số mô hình tiêu biểu trên thế giới cũng như ở Việt Nam hiện nay, từ đó rút ra những bài học thực tế có thể áp dụng vào đất nước chúng ta ngay hôm nay.*

Từ khóa: *Nông nghiệp công nghệ cao; Du lịch nông nghiệp công nghệ cao; Du lịch Israel; Du lịch Nhật Bản; Du lịch Việt Nam.*

Abtract: *Tourism is an important industry in many countries around the world, including Vietnam. Developing tourism industry and economic benefits have always been the top concern of a developing country like Vietnam for many years. To achieve these goals, applicating high technology into the development of the tourism industry is an inevitable trend of the world that our country must learn and apply. Understanding the importance of this issue, the paper presents general concepts of high-tech agriculture – tourism, evaluating and analyzing some typical models in the world as well as Vietnam today, thereby drawing practical lessons that can be applied to our country today.*

Keywords: *High-tech agriculture; High-tech agricultural tourism; Israel tourism, Japan tourism, Vietnam tourism.*

1. INTRODUCTION

Tourism is considered a crucial industry in the socio-economic development orientation of Vietnam and many countries around the world. For developing and emerging countries with significant cultural, agricultural and natural potential such as Thailand and Vietnam, developing tourism industry is considered a smart choice to bring positive economic benefits and changes. Accordingly, it has always been the top concern of a developing country like Vietnam for many years. To achieve tourism development in the context of globalization associated with the achievements and positive impacts of the 4.0 industrial revolution, applicating high technology into the development of the tourism industry is an inevitable trend of the world that our country must learn and apply. Identifying the importance of this issue, this study attempts to present general concepts of high-tech agriculture – tourism, evaluate and analyze some typical models in the world as

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well as Vietnam today, thereby drawing practical lessons that can be applied to develop high-tech agricultural tourism in Vietnam.

2. BASIC THEORIES ON HIGH-TECH TOURISM -AGRICULTURE

2.1. Definition of high-tech agriculture

The concept of high-tech agriculture is not new in the world, but in Vietnam, it is still relatively fresh. According to its definition in the Law on High Technologies (2008), No 21/2008/QH12, issued on November 8th 2008, high technologies refers to technologies with a high level of scientific research and technological development, measured by modern scientific and technological achievements; they produce products of high quality, superior features, high added value, and environmental friendliness; they play important roles in the formation of manufacture and service industries, or the modernization of existing sectors.

According to the Department of Science and Technology (Ministry of Agriculture and Rural Development) (2022), high-tech agriculture is an agricultural system that applies new technologies to production, including: agricultural industrialization (mechanization of production processes), automation, information technology, new materials technology, biotechnology, high-yielding and high-quality crop and livestock varieties. The aim is to achieve high economic efficiency per unit area and sustainable development based on organic farming practices.

According to NextFarm (2022), high-tech agriculture is defined as an agricultural system that integrates new and advanced technologies for production, also known as high technology, with the aim of improving efficiency, achieving breakthroughs in crop yields and quality, meeting the increasing societal demands, and ensuring sustainable agricultural development.

The process of developing high-tech agriculture in the world can be summarized as follows:

Table 1. Revolutions in the development of high-tech agriculture

Facts	Main characteristics
1. The First Revolution	It was in parallel with the mechanical revolution at the beginning of the 20th century, which saw the replacement of horses with tractors, combines, and modern cotton pickers. There were significant developments in agriculture, such as plows, planters, and harvesters, and a shift from animal power to mechanical power. Machine designs kept pace with the increasing horsepower of tractors.
2. The Second Revolution	Hybrid corns were founded in the 1930s. The hybrid corn varieties, along with other agricultural practices, significantly improved the conditions for cultivation, so that genetic potential of hybrid plants have shown over the years. The plant breeding revolution had an impact on the productivity of other crops such as rice, wheat, and soybeans.

3. The Third Revolution	With the increasing availability of fertilizers, particularly nitrogen fertilizers, came a revolution in reproductive capability. This revolution began when ammunition plants from World War II were converted into fertilizer production facilities. Thanks to nitrogen fertilizers, coupled with a better understanding of soil fertility through soil testing, the growth of crops has been greatly improved. Other nutrients such as limestone, phosphorus, and potassium have also played a crucial role in unlocking the genetic potential of plants.
4. The Fourth Revolution	Starting in the 1950s, herbicides, insecticides, and fungicides were used to control weeds, insects, and diseases that harmed crops. Modern weed control methods have allowed farmers to plant crops much earlier than before. The crops can grow under more favorable temperature and moisture conditions without being competed by weeds for light, water, and nutrients.
5. The Fifth Revolution	Also known as the biotechnology revolution, it has increased the quantity and quality of food. However, it did not significantly impact crop yield until 1995. The introduction of improved seed varieties, such as oilseed rape and insect-resistant crops like Bt cotton and Bt maize, as well as herbicide-tolerant crops like soybeans, cotton, and maize, has contributed to this advancement. The use of genetically modified seeds with herbicide, insect, and disease resistance traits, gradually replacing chemical inputs, has also had positive environmental impacts.
6. The Sixth Revolution	Marked with the application of computers, software and satellites. Modern technologies have enabled the development of precision agriculture, creating a significant transformation for agriculture from a data-poor environment to a data-rich environment. Internet affects business much in agriculture.

Source: the Author (2023)

2.2. Types of high-tech agriculture

In general, high-tech agriculture contains the following types of technologies: agricultural industrialization (mechanization of production, harvesting, processing, etc.), automation, information technology, new materials technology, and biotechnology. It includes high-yield and high-quality crop varieties and livestock, as well as advanced farming practices such as precision farming and organic farming, aimed at achieving high economic efficiency per production unit. Modern 4.0 technologies currently being applied in agriculture worldwide include digitization, robotics, GPS (Global Positioning System), unmanned aerial vehicles, and satellite technology. These technologies are widely used to enhance productivity and efficiency in the agricultural sector.

2.3 High-tech agritourism

According to Vntrip (2023), rural tourism is defined as a form of tourism that takes place in rural areas, characterized by small-scale businesses, open spaces, direct

contact with nature, and immersion in rural characteristics, social and cultural heritage, and traditional village culture. It reflects environmental, economic, historical, and geographical diversity features of each rural region. In another sense, rural tourism is a chain of activities, services, and facilities provided in rural areas to exploit the values of one rural regions as a resource, meeting experiential needs of non-rural or rural residents other rural areas. The resource values in rural areas are characterized by cultural values, traditional rural lifestyle linking to agricultural production labor...

Rural tourism has common characteristics, such as organizing tourism activities in rural areas, exploiting the unique tourism values of culture, lifestyle, and traditional village customs that are closely linked to agricultural production activities in rural communities. It creates employment opportunities and has a positive impact on the lives of rural communities. Additionally, it serves as a direct bridge between production activities and the supply of agricultural products, traditional craft products of traditional villages. Rural tourism utilizes existing technical infrastructures of the rural communities, including traditional village houses, cultural structures (communal houses, temples, wells, etc.), traditional craft production facilities, and basic infrastructure (roads, electricity, water, telecommunications services) in harmony with the natural environment, cultural identity, and agricultural production activities of local communities.

Rural tourism encompasses various types, typically classified into three basic forms: community-based tourism, agritourism, and ecotourism. Among them, ecotourism is a type that relies on nature and local culture, with a focus on environmental education and contributing to conservation and sustainable development. Ecotourism involves the exploration of nature and accompanying cultural values from the past and present, promoting conservation efforts, minimizing negative impacts on the environment, and creating positive socio-economic benefits for the local community in relatively untouched natural areas.

Community-based tourism is a form developing on cultural values of the community, managed and organized by local residents, and they directly benefit from it. Community-based tourism is a model that explores untapped original features within the community, where the local community provides products and services to tourists, and is responsible for protecting tourism resources. They also share economic benefits generated by tourism development, such as job opportunities and increased income, contributing to poverty alleviation in their local area.

Agricultural tourism, also known as farm tourism or agritourism, is a type of tourism that takes place in agricultural areas where high-tech farming techniques are applied. It involves experiential activities on farms, including agricultural cultivation, enjoying farm products, and accommodation. This is the specific type of tourism that this study focuses on.

3. RESEARCH OBJECTIVE AND METHODOLOGY

It is clear that the contribution of science and technology to the development of our country's agriculture is very significant. High technology is really one of the important solutions to create breakthrough changes in agricultural production development, serving the restructure of Vietnam's agriculture. In a country of farming and animal husbandry like Vietnam, the role of the agricultural sector is more important than ever, contributing decisively to the long-term and sustainable development of the national economy.

Recognizing the importance of the issue, this paper conducts research on typical high agricultural models in the world and Vietnam; along with typical models in the world's leading agricultural powers. Through qualitative research method, the paper uses secondary data to evaluate and analyze outstanding advantages of the above models, thereby drawing practical lessons applied to Vietnam's agriculture.

4. SOME TYPICAL MODELS OF HI-TECH AGRITOURISM

High-tech agricultural tourism models have been widely implemented in developed countries around the world, such as the United States, Japan, and Australia... Although not yet popular in Vietnam, some promising initial models thave shown positive results.

4.1. Models in Vietnam

High-tech agriculture combining with experiential tourism

This model was developed by Ecofarm, a joint-stock company specializing in eco-friendly farming located in Tân Thạnh commune, Thanh Bình district, Đồng Tháp province. Ecofarm is one of the pioneering businesses to develop a high-tech agricultural tourism model. It combines showcasing the latest modern farming technologies with informative activities, promotional events, skill training, and experiential tourism, aiming to provide visitors with immersive and educational experiences.

The concept of experiential tourism, as described by Mr. Nguyễn Hồng Quang (2023), Chairman of the Board of Ecofarm, can be understood as activities that involve visiting, relaxing, entertaining, learning, and exploring a destination with the aim of appreciating, accumulating, and enhancing experiences and skills which are necessary for visitors to gain a deeper understanding of their own values, life, work, and community.

The high-tech agricultural tourism model combined with experiential tourism is being gradually implemented by Ecofarm. It focuses on creating beautiful, refreshing, and ecologically natural landscapes. The model is developed on a large scale, which spans an area of 30,000 square meters and is equipped with advanced irrigation, fertilization, and automated control systems based on Israeli technology. The cultivated crops include various types of melons, cucumbers, and ornamental plants. Some notable landscapes attract many tourists, such as honeybee farms, interactive pet gardens, flower-lined

riverside paths, island gardens in ecological ponds, flower mazes, and observation towers overlooking the Tien River… In addition to sightseeing and experiencing the surroundings, visitors can observe production activities (flower pollination, the functioning of the water supply system, automated nutrition, honeybee farming, flower propagation, disease-free plant cultivation, and melon harvesting). Moreover, if having much time, visitors can also participate in practical skill training courses such as grafting and flower arrangement, honey and pollen collection, assembling automatic irrigation systems (sprinklers, drip irrigation), and hydroponic vegetable cultivation techniques…

Besides, visitors can indulge in exploring and savoring agricultural products offered by the Ecofarm system, such as melons, Thap Muoi lotus seed milk, pomelos from Lai Vung, mangoes from Cao Lanh, fresh fruit juices, natural honey, freshwater fish dishes like carp, catfish, and snakehead fish, as well as various local vegetables including wild leafy greens like dien dien, bon bon, gunflower, and lotus stem. While enjoying these specialties, visitors can also relax and unwind by taking a boat ride along the Tien River, admiring the serene and rustic countryside scenery.

The 3 in 1 model: Agriculture – Tourism – Learning

This unique model has been built up by the Infrastructure Exploitation Center under the Hi-Tech Agricultural Zone Management Board of Ho Chi Minh City for several years. The center's 3-in-1 model stands out for its green, clean, and beautiful landscapes, as well as its advanced technical infrastructure applying high-tech solutions. These include greenhouse production systems, hydroponic vegetable farms, mushroom cultivation houses, tissue culture orchid gardens, fruit tree orchards, forestry areas, and modern laboratories…

The center has organized tours, career guidance activities, and agricultural tourism experiences at the High-Tech Agricultural Zone for students, and when possible, it has expanded to other interested participants. The Career Activity location was built and completed with a capacity of 500 guests per visit. It features an open, green, clean, and beautiful design, providing a spacious and suitable environment for tourism activities. With the combination of modern LED screen presentations and a team of knowledgeable staff, engineers, and guides ready to welcome and share interesting, and innovative information about high-tech agriculture, the High-Tech Agricultural Zone is not just a tourist destination but also a place where visitors can actively participate in various exciting agricultural activities.

So far, the Center has identified two main product groups to serve visitors:

(1) Field Trip and Learning Program: This program is organized with specific topics such as biology, engineering, science and technology… catering to students from local schools as well as other provinces. Two regular activities are: attending lectures, watching films, and participating in discussions in the auditorium, followed by visiting and exchanging experiences at the production models within the Agricultural Zone, or engaging in hands-on experiments in the laboratory for the topic 'plant cell cultivation',

as well as participating in activities related to vegetable and orchid cultivation, or agricultural harvesting.

(2) High-Tech Agricultural Tour and Experience Program: This program is designed for all individuals to learn about high-tech agriculture and invest in this field. In addition to career-oriented tour activities, visitors can also participate in various fun activities such as quizzes and practical competitions… With the program 'A Day of High-Tech Agricultural Experience,' visitors are introduced to and directly involved in hands-on activities, experiencing the process of planting, caring for and harvesting agricultural products such as vegetables, mushrooms, tomatoes, orchids, along with traditional folk games and physical activities.

4.2. Some typical models of the world's leading countries

These are unique and famous models of high-tech agriculture tourism in the world, annually attracting millions of tourists to visit.

Farms using wind energy

Skyfarm, designed in the form of a multi-story tower made by bamboo, first appeared in 2015. The tower features a hyperboloid shape, providing a spacious interior and a sturdy frame. The open structure of this model maximizes natural light for plant growth and can be adjusted on available light.

Skyfarm operates through a closed-loop system, integrating both plant cultivation and fish raising. At the top of the tower are rainwater storage tanks and a wind turbine system which is employed to generate energy for the tower operation. Below that is the area dedicated to growing green vegetables, utilizing a combination of hydroponic and aeroponic systems. The bottom of the tower houses is a large fish tank for raising common freshwater fish species.

Wind energy farms not only provide much electricity but also become new tourist destinations, attracting a large number of tourists to relax and enjoy the scenery. Skyfarm has become a romantic check-in place attracting tourists. It is vert beautiful in many angles, visitors can visit it at any time to take nice pictures.

The largest vertical farm in the world

When it comes to indoor vertical farming for clean vegetables, AeroFarms is popular in the world. It is considered the most advanced commercial farm today, with a predictive growing process that forecasts yield and harvest time. Its major advantage is the eco-friendly nature, as it doesn't cause pollution while ensuring high-quality fresh produce. The current system consists of 9 farms, producing 30 harvests and 900 tons of green vegetables annually.

Instead of using solar energy as common, AeroFarms utilizes an aeroponic system. The plants absorb intelligent light from an adjustable LED lighting system. The farm

also features a data monitoring system to track plant development, along with predictive analysis for nutrient and cultivation processes.

Vertical farming brings many benefits, mainly due to greater crop efficiency. It is in an emerging alternative to fresh produce in urban areas. Millions dollars are being invested into indoor farm operations in warehouses. AeroFarm tourist spot has attracted a great deal of tourists.

Farm in containers

Modular Farms, a renowned high-tech agricultural model from Canada, is widely recognized for its innovative approach. The cultivation system is designed indoors in the form of modular units, which consist of easily detachable and transportable containers via ships, trains, or trucks. The special insulation layers within the containers allow for year-round cultivation of fresh greens without concerning about weather conditions.

The system consists of main modules and additional modules that allow farmers to integrate or expand additional functions to their business operations. The main module serves as the foundation, operating through a closed-loop process. The supplementary modules have specialized functions such as water supply, preservation, storage…which can increase cultivation efficiency by 150%.

5. SOME EXPERIENCED LESSONS FOR VIETNAM

The development of ecotourism linking with agriculture is considered a promising, attractive, and sustainable direction. It is also an inevitable trend to ensure the sustainable development of tourism by harnessing the potential and advantages of agriculture and rural areas, gradually shifting the economic structure of rural areas towards integrated value-added activities, contributing to the acceleration of industrialization and modernization.

The high-tech agricultural tourism model brings many benefits, including creating unique and interactive experiences for tourists, promoting the economic and sustainable development of agricultural communities, as well as enhancing awareness and understanding of agriculture and local culture. The high-tech agricultural tourism model combines agricultural tourism with the use of advanced technologies such as artificial intelligence, Internet of Things (IoT), mobile communication, and geographic information systems to provide a better travel experience for tourists. In these model, high technology is applied to create interactive experiences, information, and education for tourists when they participate in agricultural activities.

5.1. Vietnam's potential for hi-tech agritourism development

Vietnam has great potential to implement high-tech agricultural tourism models due to the following advantages:

- Rich agricultural diversity: Vietnam is known for its diverse agricultural products, from rice fields and fruit orchards to coffee plantations and vegetable farms. This diversity

provides a wide range of agricultural experiences that can be incorporated into high-tech tourism activities.

- Technological advancements: Vietnam has been making significant progress in adopting and developing advanced technologies. This includes the use of artificial intelligence, IoT, and mobile communication, which can be leveraged to enhance the agricultural tourism experience and provide innovative solutions for visitors.

- Cultural heritage: Vietnam has a rich agricultural and cultural heritage that can be showcased through high-tech agricultural tourism. Visitors can learn about traditional farming practices, participate in local festivals, and experience the unique cultural traditions associated with agriculture.

- Growing interest in sustainable tourism: There is a growing global trend towards sustainable tourism, and Việt Nam has been actively promoting sustainable practices in the tourism sector. High-tech agricultural tourism can align with these principles by promoting eco-friendly farming methods, supporting local communities, and minimizing the impact on the environment.

In the era of globalization, alongside the technological revolution of Industry 4.0, high-tech agriculture has become an essential trend for many countries around the world, including Vietnam. Currently our domestic agriculture sector has not kept up with the global trend of high technology. This is primarily due to Vietnam being in the process of development and integration. Vietnam enterprises have not yet been strong enough to fully invest in comprehensive high technology, especially small and medium-sized enterprises. Hi-teach agriculture in our country is still mainly imported abroad. Therefore, it is crucial to learn from leading high-tech agricultural models worldwide and continue to leverage successful models applied in Vietnam.

5.2. Experienced lessons for Vietnam

Based on the evaluation and analysis of high-tech agricultural models mentioned above, this paper proposes some applications for our country agriculture sector as follows:

Combining high-tech agriculture with tourism

Developing tourism in general, and agricultural tourism in particular, has become an important economic sector contributing significantly to the national and local economic growth. In addition, developing agricultural tourism will promote opportunities for exchanging and showcasing achievements of our agricultural industry today. Overall, the combination of high-tech agriculture and experiential tourism models, such as Ecofarm, can be a highly effective approach to attract tourists, avoiding the limitations and monotony of previous models, and creating new value not only for tourists but also for businesses and the local communities. Moreover the 3-in-1 model, combining agriculture - tourism - education, implemented by the Infrastructure Exploitation Center under the

High-tech Agricultural Zone Management Board of Ho Chi Minh City, could be applied. These models are not overly complex and have proven successful in Vietnam, making them suitable for local areas.

Application of prominent models around the world

The lessons and experiences in developing high-tech agriculture from leading countries are highly valuable so that Vietnam and our specific localities can learn and apply them. Until now, Vietnam has successfully learned and developed the high-tech agriculture models from Japan, specifically in the cultivation of clean vegetables in greenhouses and standardized livestock farming systems. The drip irrigation method from Israel has also been applied in Vietnamese agriculture, although not yet widely popular, it has achieved certain achievements.

The lessons from Japan can be applied to our localities in terms of using modern equipment for crop caring, pest prevention, and livestock farming. Additionally, greenhouse cultivation of crops and vegetables can also be implemented. Of course, appropriate adjustments need to be made for smaller-scale agriculture with lower investment (at the provincial and local levels). Besides, Israel's online agricultural system model can be applied in Vietnam, as well as in provinces and cities, to enhance connectivity among businesses, farmers, and agricultural authorities. The drip irrigation method from Israel has already been effectively applied in some localities of Vietnam.

The use of wind energy, vertical farming, and container farming are indeed interesting models that can be applied to many regions in Vietnam, given the conditions of human resources, capital, and infrastructure. When these conditions are met, these models can be implemented effectively. Utilizing wind energy in farming helps reduce energy costs and protect the environment. Vertical farming and container farming are space-saving methods that can be deployed in urban areas or areas with limited land availability. However, the application of these models needs to be carefully considered to ensure that technical, economic, and environmental factors are adequately addressed.

The forms of farms that utilize wind energy, vertical farming, and container farming are excellent models that can be applied to many regions in Vietnam, provided that the conditions regarding human resources, capital, and infrastructure are met.

Hope that effectively applying lessons and experiences from leading countries in high-tech agritourism, as well as successful agricultural models from around the world and in Vietnam, will contribute to the sustainable development of agriculture in localities throughout Vietnam.

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ATTITUDES AND INTENTIONS TOWARDS SUSTAINABLE TOURISM AFTER THE COVID-19 PANDEMIC

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Abstract: This research is conducted with the goal of understanding the factors that influence people's intention toward sustainable tourism in the post - COVID-19 pandemic context. Using Schwartz's (1992) personal values and theory of planned behavior (TPB), this study aims to develop an applied research model in the Vietnamese context. A large-scale survey was conducted in three major cities of Vietnam with the participation of 519 people to understand the relationship between resultant self-transcendence, resultant conservation, attitude, subjective norm, perceived behavioral control and intention toward sustainable tourism. The results show that most hypotheses in the research model are acceptable with the collected data, except for the two hypotheses about the relationship between resultant conservation and perceived behavioral control toward sustainable tourism; subjective norm and intention toward sustainable tourism. Based on the research results, the authors make some recommendations to promote people's sustainable tourism intention in the post-COVID-19 pandemic context.

Keywords: COVID-19, personal values, sustainable tourism, theory of planned behavior, Vietnam.

Tóm tắt: Bài viết này được thực hiện với mục tiêu tìm hiểu các yếu tố ảnh hưởng đến ý định của người dân đối với du lịch bền vững trong bối cảnh hậu đại dịch COVID-19. Sử dụng các giá trị cá nhân và lý thuyết hành vi có kế hoạch (TPB) của Schwartz (1992), nghiên cứu này nhằm mục đích phát triển một mô hình nghiên cứu ứng dụng trong bối cảnh Việt Nam. Một cuộc khảo sát quy mô lớn được thực hiện tại ba thành phố lớn của Việt Nam với sự tham gia của 519 người để tìm hiểu mối quan hệ giữa tính tự siêu việt, kết quả bảo tồn, thái độ, chuẩn mực chủ quan, nhận thức kiểm soát hành vi và ý định hướng tới du lịch bền vững. Kết quả cho thấy hầu hết các giả thuyết trong mô hình nghiên cứu đều chấp nhận được với số liệu thu thập được, ngoại trừ hai giả thuyết về mối quan hệ giữa kết quả bảo tồn và nhận thức kiểm soát hành vi đối với du lịch bền vững; chuẩn mực chủ quan và ý định hướng tới du lịch bền vững. Dựa trên kết quả nghiên cứu, các tác giả đưa ra một số khuyến nghị nhằm thúc đẩy ý định du lịch bền vững của người dân trong bối cảnh hậu COVID-19.

Từ khóa: COVID-19, giá trị cá nhân, du lịch bền vững, lý thuyết hành vi có kế hoạch, Việt Nam.

1. INTRODUCTION

The relationship between tourism and the environment has attracted increasing attention from different sectors, including hospitality and tourism (Stefănicaa & Butnaru, 2015), because environmental quality management (e.g. fresh air) can play an important role in enhancing destination competitiveness (Wang et al., 2018). Tourism is considered one of the key industries generating wealth, social benefits and jobs in many developing and developed economies. Over the years, many developing country governments have

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realized that tourism must be environmentally sustainable along with being economically and socially beneficial (Macleod & Todnem, 2007). Sustainable tourism is understood as "perpetually linked to the conservation of ecosystems, the promotion of human well-being, inter- and inter-generational equity and public participation in decision-making" (Bramwell, 2015). Some researchers state that "sustainable tourism" is a strategy in the tourism industry to minimize negative impacts on the natural, cultural and social environment (Som et al., 2010). UNWTO (2004) have defined sustainable tourism as "the development of tourism activities with an appropriate balance between these environmental, economic and social culture to ensure its long-term sustainability" It must fulfill current tourist and destination needs while providing opportunities for further development in the future, as well as maintaining heritage integrity, ecological integrity, biodiversity and ecosystems.

Behavioral intention is one of the important factors influencing the choice of tourist destinations. Research on behavioral intentions remains an important research area in tourism because positive intentions translate into tourist loyalty (Prayag et al., 2013). Most studies on travel intention have not focused on the relationship between attitude and travel intention, and at the same time, the influence of attitude on choosing a sustainable tourism destination has not been thoroughly researched (Mohaidin et al., 2017).

COVID-19 has changed the world forever in every aspect imaginable and has had a devastating impact on every individual and every industry (Chang et al., 2020). Along with the loss of income and livelihoods, the crisis makes pre-existing inequalities and insecurity worse for vulnerable local communities. These consequences cause varying degrees of impact around the world. It is imperative that we carry out initiatives, bringing products that support and develop local communities, reduce overtourism, preserve culture and protect the environment. Therefore, countries and regions need to carefully plan sustainable tourism to bring benefits to local communities, respect local culture, and conserve natural resources and natural resources. Direct benefits are brought to the local community. All levels, sectors, enterprises, and localities must try harder, be more flexible, more creative, change ways of thinking, and take new approaches in handling specific issues, close to Vietnamese conditions and the current world situation, in which it is necessary to provide services that tourists need, not just what Vietnam has available, and one of them is sustainable tourism.

These efforts will attract great attention from 84% of Vietnamese people who want to have authentic experiences, bearing the cultural characteristics of the place they are going to (Linh, 2021). Now, more than ever, responsible, sustainable tourism plays a vital role in bringing cultures together and supporting communities that depend on tourism.

In fact, sustainable tourism has tried (for many years) to position itself as the solution to the negative aspects associated with tourism in its development and the criticism it regularly

receives (Sharpley, 2020). The tourism industry is very sensitive to major shocks such as the COVID-19 pandemic (Chang et al., 2020). In the context of COVID-19, tourism is one of the industries most heavily affected. Most people around the world have been constantly traveling or dining out. In other words, tourism is especially vulnerable to anti-pandemic measures due to movement restrictions and social distancing. In this context, sustainable tourism can find great opportunities for development (Higgins-Desbiolles, 2019).

To demonstrate this, a 2020 study by Booking.com conducted with 29,000 people in 30 countries, including Vietnam, showed that a commitment to sustainability in the daily lives of tourists is also consistent with their intentions for future travel. Accordingly, 100% of Vietnamese people responded that next year, they want to stay in places committed to sustainable tourism; 88% of Vietnamese people want to reduce general waste, 86% want to reduce energy consumption; 81% of Vietnamese people want to use more environmentally friendly forms of transportation such as walking, cycling or public transportation instead of taxis or car rental; 84% of Vietnamese people want to have authentic experiences, featuring local cultural characteristics; 93% of Vietnamese people believe that raising cultural awareness is the same as preserving heritage. According to the company's 2021 Sustainable Tourism Report, up to 97% of Vietnamese people believe sustainable tourism is extremely important, and 88% see the pandemic as a catalyst for them to pursue a lifestyle more sustainable in the future. 100% of Vietnamese people surveyed said that next year, they want to stay at establishments committed to sustainable tourism. Understanding this psychology, this is a more appropriate time than ever for us to focus on sustainable planning - a must for enterprises in the tourism industry.

Research on sustainable tourism is largely based on data collected from Westerners visiting destinations in Western countries (Steg et al., 2014). There is little research on how people in East Asian countries (such as Vietnam) develop motivation to visit environmentally friendly destinations (Ashraf et al., 2020). According to research results published by the Vietnam Tourism Development Research Institute, the COVID-19 epidemic has affected the travel habits of Vietnamese people, 64% of Vietnamese people agree to avoid famous destinations to not put pressure on already crowded places.

Theory of planned behavior (TPB) (Ajzen, 1991) is considered a powerful tool in predicting human pro-environmental intentions and behaviors. Previous studies have used TPB in different contexts such as intention to choose green hotels (Chen & Tung, 2014), visit an environmentally responsible museum (Han & Hyun, 2017). However, the application of TPB when researching sustainable tourism is still limited. According to value theory, each individual has a set of values that convey what is important to him or her. Values are defined as desirable and situationally appropriate goals that serve as guiding principles in

an individual's life (Schwartz, 1992). Schwartz values have been successfully applied in determining pro-environmental intentions and behavior in various contexts.

Recent studies have posited that values shape consumers' pro-environmental behavior through green awareness (Barbarossa et al., 2017). Ye et al. (2018) and Ashraf et al. (2020) proposed and applied the Schwartz value to research in the tourism context. Pro-environmental behavior such as sustainable tourism results from the interaction between knowledge, behavioral constraints/opportunities, and individual values and motivations, which represent social structural variables.

Therefore, this study was conducted with the following objectives. Firstly, based on a theoretical model by integrating variables according to the personal value framework and TPB to carefully examine the factors that influence Vietnamese people's attitude and intention toward sustainable tourism. Secondly, based on the research results, recommendations are made to promote Vietnamese people's intention toward sustainable tourism.

2. HYPOTHESES DEVELOPMENT

Ajzen & Fishbein (2005) suggested that a person's value preferences may determine the relative influence of personal attitude on intention formation. Ajzen & Fishbein (2005) assert that individual differences, such as personal values, can influence all three premises of the TPB framework. Ye et al. (2018) demonstrated a direct link between Schwartz' values of resultant self-transcendence, resultant conservation and attitude, subjective norm, perceived behavioral control. Based on the above observation, we hypothesize as follows:

H1. Resultant self-transcendence (RST) is positively associated with a) attitude (AT), (b) subjective norm (SN), and (c) perceived behavioral control (PBC) toward sustainable tourism.

H2. Resultant conservation (RC) is positively associated with a) attitude (AT), (b) subjective norm (SN), and (c) perceived behavioral control (PBC) toward sustainable tourism.

Several studies have identified the association between TPB factors and found the importance of these variables in explaining individuals' behavioral intentions (Chen & Peng, 2012; Han & Hyun, 2017; Wang et al., 2018). Chen & Peng (2012) demonstrated that individuals' attitude, subjective norm and perceived behavioral control increase their willingness to stay at green hotels when participating in tourism activities. Han and Hyun (2017) identified the important role of tourism attitude, subjective norm and perceived behavioral control in determining intention to visit environmentally friendly museums. Wang et al. (2018) affirmed that attitude, subjective norm and perceived behavioral control have a positive influence on environmentally responsible behavior (Wang et al., 2018). Therefore, we hypothesize the following:

H3. (a) attitudes, (b) subjective norm, and (c) perceived behavioral control are positively associated with intention toward sustainable tourism.

3. METHODS

The research process is divided into 3 stages: qualitative research (in-depth interviews), preliminary quantitative research and official quantitative research.

In the first phase, in-depth interviews with 10 Vietnamese people were conducted in January 2023. Each in-depth interview lasted for 30 minutes, then recorded and coded. Studying the results of in-depth research, the authors determined the official research model and designed a large-scale questionnaire.

In the second stage, the questionnaire was tested with 30 Vietnamese people to test the clarity and reliability of each question and scale.

In the third stage, the survey was sent directly to respondents from schools (high schools and universities), supermarkets and enterprises. After contacting and receiving lists from representatives of these functional organizations, the magicians randomly select respondents to ensure objectivity. The survey was conducted in February 2023 in three major cities, representing three regions of Vietnam: Hanoi, Da Nang and Ho Chi Minh. After screening, there were 519 valid questionnaires used for this study.

The construct items were designed and adapted from previous research. The three-item scale by Maichum et al. (2017) was adapted for intention. For attitude, the authors adapted from Verma & Chandra (2018) with four-item scale. The authors adapted Verma & Chandra (2018)'s three-item scale to measure subjective norm. The three-item scale by Ajzen (1991) was used for perceived behavioral control. The six-item scale by Schwartz (1992) was adapted for resultant self-transcendence and resultant conservation. Respondents were asked to rate the indicators on a Likert scale, from 1 to 5.

4. RESULTS

Partial least squares (PLS) structural equation analysis was performed to explore the determinants of sustainable travel intention. Using SPSS 26.0 and Smart-PLS 4.0, we tested the measurement and structural model.

Confirmatory factor analysis (CFA) was performed to demonstrate whether the authors' decision factor framework satisfactorily fits the data collected. As suggested by Fornell & Larcker (1981), internal consistency was tested using Cronbach's alpha and composite reliability. As shown in Table 1, the lowest value of Cronbach's alpha is 0.878 and composite reliability is 0.907, which are all higher than the lowest recommended value of 0.7, so confirm the reliability and internal consistency.

Table 1. Results of the confirmatory factor analysis

Construct and items	Outer loading	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
IN1	0.929	0.895	0.935	0.827
IN2	0.886			
IN3	0.912			
AT1	0.902	0.922	0.945	0.810
AT2	0.904			
AT3	0.901			
AT4	0.893			
SN1	0.929	0.900	0.938	0.834
SN2	0.893			
SN3	0.916			
RST1	0.811	0.878	0.907	0.620
RST2	0.789			
RST3	0.780			
RST4	0.777			
RST5	0.774			
RST6	0.793			
RC1	0.798	0.882	0.910	0.627
RC2	0.777			
RC3	0.777			
RC4	0.804			
RC5	0.792			
RC6	0.803			

The convergent validity and discriminant validity of the collected data were examined. Convergent validity refers to the degree to which two or more measures of constructs should theoretically be related to each other. It was assessed using item loadings and average variance extracted (AVE) from the latent variables (Fornell & Larcker, 1981). From Table 1, the item loadings of all constructs range from 0.774 to 0.929, much higher than the recommended standard value of 0.7. AVE scores ranged from 0.620 to 0.834 and both were above the recommended threshold of 0.5. These results indicate that all measures have sufficiently high convergent validity.

Discriminant validity refers to the extent to which two or more construct measures should theoretically be unrelated (Paulraj et al., 2008). The results in Table 2 show that the square root of the AVE for each latent construct is greater than its correlation value with other constructs, thus supporting discriminant validity (Paulraj et al., 2008). The authors concluded that the measurement model has sufficient reliability, convergent validity, and discriminant validity.

Table 2. Means, standard deviations, and correlations

Constructs	Mean	Std. Deviation	AT	IN	PBC	RC	RST	
AT	3.6035	0.95536	**0.900**					
IN	3.5690	0.76542	0.272	**0.909**				
PBC	3.6473	0.93403	0.142	0.324	**0.900**			
RC	3.5756	1.04059	0.171	0.020	0.049	**0.792**		
RST	3.5908	1.03748	0.183	0.038	0.173	0.088	**0.787**	
SN	3.7495	0.77224	0.103	0.127	0.088	0.169	0.108	**0.913**

The path analyzes of the model are shown in Figure 1. Path coefficients were calculated in the structural model analysis using PLS (Chin et al., 2003). According to the results, as presented in Table 3 and Figure 1, the constructs of personal value theory and TPB are related to each other, except for the relationship between resultant conservation and perceived behavioral control toward sustainable tourism; subjective norm and intention toward sustainable tourism (p value > 0.05). Therefore, H1a, H1b, H1c, H2a, H2b, H3a, H3c are supported, but hypotheses H2c, H3b are rejected.

Table 3. Results of structural model evaluation and hypotheses testing

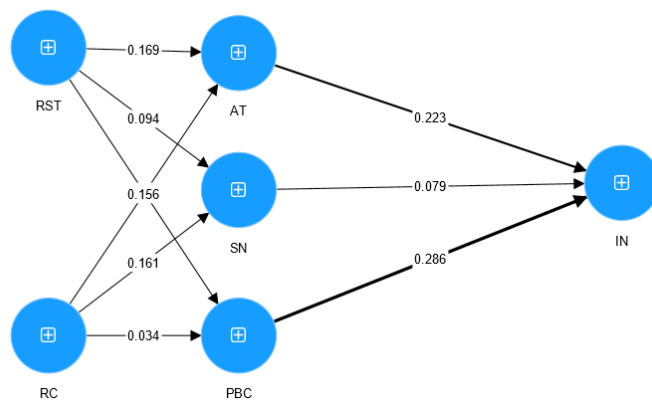| Hypotheses	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T-statistics (|O/ STDEV|)	P values
H1a	0.169	0.172	0.041	4.143	0.000
H1b	0.094	0.095	0.040	2.370	0.018
H1c	0.170	0.174	0.039	4.344	0.000
H2a	0.156	0.159	0.039	4.012	0.000
H2b	0.161	0.164	0.041	3.936	0.000
H2c	0.034	0.035	0.041	0.824	0.410
H3a	0.223	0.223	0.041	5.405	0.000
H3b	0.079	0.079	0.041	1.933	0.053
H3c	0.286	0.286	0.041	6.998	0.000

Figure 1. The results of the path analysis

5. DISCUSSION AND CONCLUSION

5.1. Summary of main research results

Based on the personal value theory of Schwartz (1992) and TPB (Ajzen, 1991), the authors identified factors that influence intention toward sustainable tourism of Vietnamese people.

First, both resultant self-transcendence and conservation significantly influences TPB factors of attitude and subjective norm. This is in complete agreement with classical approaches that suggest that consumer social support and self-interested behavior coexist (Miller et al., 2015). This study also confirms previous assumptions that behavioral environmental advocacy results from the interaction between personal values and consumers' socio-structural and psychosocial factors (Follows & Jobber, 2000). Personal values improved the predictive ability of the TPB (Bonne et al., 2007). Therefore, we affirm that the Vietnamese people have two values of self-transcendence and conservation cares more about society and nature. They prefer the welfare of society to their own. When comparing the resultant self-transcendence and conservation values of Vietnamese people, resultant self-transcendence has a stronger impact on their attitude, resultant conservation has a stronger impact on their subjective norm, which shows that they care pay more attention to security, compliance and traditional values.

Second, our findings demonstrate that attitude and perceived behavioral control have a positive impact on people's intention toward sustainable tourism. The most notable result that emerged from the data was that subjective norm had no impact on intention (p value = 0.053). This result agrees with the results of Wang et al. (2016) in which they found an insignificant relationship between Chinese consumers' subjective norm and product remanufacturing intention.

5.2. Implications

After the COVID-19 pandemic, in Vietnam as well as a number of other countries, people have changed their views on tourism. They are acutely aware of the damage to natural resources that will affect their living environment, so they tend to consume green, as well as sustainable tourism.

The concept of sustainable tourism is built on the concept of reducing the negative impact of tourism on natural and cultural resources. This requires state management agencies, enterprises and people to be responsible and sensitive to the natural, social and cultural factors of the destination (Mohaidin et al., 2017). Several types of tourism activities, such as heritage tourism, eco-tourism, rural tourism, agri- tourism and many others, emphasizing responsible tourism have been created and are encouragement (Omar, 2013). Sustainable tourism research should be determined through a participatory approach involving parties including state management agencies, enterprises and people intending to

travel. Therefore, it is necessary to promote attitudes and intentions towards sustainable tourism through training activities, communication programs, and experiences of state management agencies and enterprises. Specific proposals are as follows:

- Organize self-value orientation courses and build a healthy lifestyle for individuals

- Organize communication programs that emphasize the environmental value of each individual's life and highlight the harmful effects of conventional tourism like the harmful effects of the recent COVID-19

- Organize programs calling on people to practice environmental protection, from small actions such as picking up trash at tourist places, preserving natural landscapes, respecting cultural values...

- Organize a free sustainable tourism experience program, before charging fees to influence awareness, implementation ability and value for each individual

People today expect tourism businesses to provide more eco - friendly and sustainable travel options, be it accommodation, transportation, tours or accompanying activities. The global crisis has piqued people's interest and excitement in sustainable tourism. Industry stakeholders can work together to create new ways to measure, evaluate and promote sustainability in tourism, maintaining safe protocols for travelers while minimizing the use of plastic use and waste management. This not only involves developing policies for humans but also requires considering animal welfare programs at facilities that demonstrate respect for the health and welfare of animals, including species in nature and under human care.

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DEVELOPING SMART TOURISM IN HANOI: OPPORTUNITIES AND CHALLENGES

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Tóm tắt: *Du lịch thông minh đang trở nên phổ biến trên toàn thế giới. Tại Việt Nam, đặc biệt là thủ đô Hà Nội, thành phố thông minh chắc chắn là một xu hướng cần thiết và cấp bách. Do đó, nghiên cứu này được tiến hành để khám phá các cơ hội và thách thức liên quan đến việc triển khai du lịch thông minh ở Hà Nội, từ đó góp phần xây dựng các chiến lược phát triển du lịch của thành phố. Bằng việc áp dụng nghiên cứu thứ cấp, chúng tôi khám phá những lợi ích tiềm năng của du lịch thông minh đối với Hà Nội, bao gồm trải nghiệm du khách được nâng cao, quản lý tài nguyên được cải thiện và tăng trưởng kinh tế. Tuy nhiên, nghiên cứu cũng xác định được những thách thức đáng kể, ví dụ như cơ sở hạ tầng không đầy đủ, hạn chế về kiến thức số của các bên liên quan và các mối lo ngại về quyền riêng tư tiềm ẩn. Qua đó, nghiên cứu nhấn mạnh các cơ hội trong việc phát triển du lịch thông minh tại Hà Nội để có thể mở ra tiềm năng to lớn của du lịch và củng cố vị thế của mình là điểm đến du lịch thịnh vượng và đổi mới.*

Từ khoá: *Du lịch thông minh; Dữ liệu thứ cấp; Du lịch thông minh tại Hà Nội*

Abtract: *As smart tourism gains global traction, Vietnam, and specifically Hanoi, faces an urgent need to evolve into a smart city with intelligent tourist destinations. This research delves into the opportunities and challenges surrounding the implementation of smart tourism in Hanoi, aiming to inform strategies for its successful development. Employing secondary research through academic literature reviews, we explore the potential benefits of smart tourism for Hanoi, including enhanced visitor experiences, improved resource management, and increased economic growth. However, the research also identifies significant challenges, such as inadequate infrastructure, limited digital literacy among stakeholders, and potential privacy concerns. Recognizing the need for Hanoi to actively embrace smart tourism, the study concludes by emphasizing the importance of identifying and capitalizing on opportunities while effectively addressing the existing and potential challenges. Through proactive planning and strategic implementation, Hanoi can unlock the immense potential of smart tourism and solidify its position as a thriving and innovative tourist destination.*

Keywords: *Smart tourism; Secondary research; Smart tourism in Hanoi.*

1. INTRODUCTION

In recent years, the tourism industry has witnessed a global surge in the adoption of smart technologies. This trend, known as smart tourism, leverages advancements in information and communication technology (ICT) to enhance the visitor experience. From interactive maps and virtual reality tours to mobile applications for booking

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attractions and navigating cities, smart tourism offers a wealth of benefits for both tourists and destinations.

Hanoi, the captivating capital of Vietnam, is also embracing this digital transformation. The city is actively developing a smart tourism ecosystem, aiming to improve visitor information access, streamline travel logistics, and personalize experiences. Initiatives include the rollout of free Wi-Fi hotspots, the creation of a digital map system, and the development of mobile applications like "Visit Hanoi." Moreover, smart tourism development aligns with broader urban development goals, such as enhancing digital connectivity and promoting innovation in the city.

However, despite the growing interest in smart tourism, there remains a gap in understanding how to effectively develop and implement smart tourism initiatives in the context of Hanoi. While some studies have explored the benefits of smart tourism and highlighted successful case studies from other destinations, there is a lack of research specifically addressing the opportunities and challenges unique to Hanoi.

This research aims to bridge the gap by providing a comprehensive review of existing literature on smart tourism and identifying research gaps relevant to Hanoi. By synthesizing findings from published studies, this paper will suggest a range of practical solutions through examining opportunities and challenges to smart tourism development strategies in Hanoi effectively.

2. LITERATURE REVIEW

2.1. Understanding of smart tourism

According to Lopez de Avila (2015, n.p.), a smart tourism destination is an innovative travel destination that is constructed on a cutting-edge technological infrastructure that ensures the sustainable development of tourist areas. It is also accessible to all, making it easier for visitors to interact with and integrate into their surroundings, improving the quality of the visitor experience at the destination and the quality of life for locals. According to Gretzel *et al.* (2015), smart tourism is defined as "tourism sponsored by integrated efforts at a destination to gather, combine, and utilize data derived from social media, government/organizational sources, physical infrastructure, and human bodies/ minds in combination with the application of cutting-edge technologies to convert that data into business value propositions and on-site experiences with a clear focus on efficiency, sustainability, and experience enhancement."

Gretzel *et al.* (2015) outline the components and layers of smart tourism. Several elements and levels of "smart" are involved in smart tourism: (1) Smart Destinations, which are specialized instances of smart cities where ICTs are integrated into the physical infrastructure; (2) Smart Experience, which focuses on technology-mediated tourism experiences and how users can engage with them through personalization, context

awareness, and real-time monitoring; and (3) Smart Business, which is the intricate network of businesses that develops and facilitates the sharing of tourism resources and the co-creation of tourism experiences.

2.2. Advantages of smart tourism

Leveraging advancements in information and communication technologies (ICTs), smart tourism offers a multitude of advantages for a diverse range of stakeholders within a destination (Gretzel *et al.*, 2018; Li *et al.*, 2018). Tourists themselves experience a significant transformation in their journeys, benefitting from personalized recommendations through intelligent algorithms, real-time information access via mobile applications, and seamless navigation tools that enhance overall satisfaction (Gretzel *et al.*, 2018). Tourism businesses, such as hotels and restaurants, can leverage smart platforms to optimize operational efficiency, target marketing efforts with greater precision, and gain valuable customer insights through data analytics (Li *et al.*, 2018). General businesses within tourist areas can flourish by participating in digital marketplaces and loyalty programs, attracting visitors and contributing to a more vibrant and dynamic economic ecosystem (Höpken *et al.*, 2017). Governments are empowered by smart tourism solutions, as data-driven decision-making facilitates resource management and the promotion of sustainable practices that ensure the longevity of the destination. Residents can experience an improved quality of life through advancements in infrastructure, cultural preservation initiatives fostered by smart technologies that promote responsible tourism behavior, and a potential reduction in negative externalities associated with tourism (Ataman, 2018). Finally, ICT companies play a crucial role in the development and implementation of these smart solutions, driving innovation within the tourism sector and capturing new market opportunities (Phillips, 2000).

3. CURRENT SITUATIONS OF SMART TOURISM IN HANOI

Currently, research on smart tourism is limited, with an emphasis on "smart cities" or "smart destinations". Smart tourism research often focuses on three key characteristics: smart tourist location, smart experience, and smart business environment.

3.1. Smart tourism destination

The emergence of smart destinations is considered a focal issue in the development trend of smart tourism. In Hanoi, significant efforts have been made to establish smart destinations for local tourism development. The critical aspect of smart destinations lies in the integration of information and communication technologies into physical infrastructure. Currently, the Hanoi People's Committee is collaborating with the Telecommunications Group to implement the Smart Tourism Project aimed at providing intelligent solutions on the information technology platform to enhance convenience for tourists, strengthen state management efficiency, and expand business opportunities for enterprises. Many historical sites and craft villages have

successfully applied technology to develop smart tourism products. For example, the Temple of Literature - National University, Thang Long Imperial Citadel, Hoa Lo Prison, and Bat Trang Ceramic Village have successfully applied automated narration systems and launched destination information lookup websites. The Temple of Literature - National University has built a 3D library, allowing tourists to use multiple languages to search for information about the site. In Bat Trang commune (Gia Lam district), digital maps of cultural heritage sites and non-material heritage, tourism, and commercial services have also been developed. Some utilities such as maps, navigation, bus stops, and travel guides have been put into use. 100% of international tourists and 68.6% of domestic tourists are aware of Hanoi tourism destinations through information from the internet.

Moreover, Hanoi has invested significantly in developing tourism with a general information portal for the capital's tourism with the domain https://sodulich.hanoi.gov. vn or the smartphone application: Visit Hanoi, available on iOS and Android operating systems. The Department of Tourism is continuing to collaborate with partners to develop an application called Myhanoi on the App Store and Google Store. The smart tourism application on mobile devices called "MyHanoi" will integrate digital maps of the capital's tourism, helping tourists actively search for useful information throughout their journey, from basic information lookup, ongoing and upcoming events, flight schedules, trains, buses, etc., to connecting tourists with destinations, restaurants, hotels, supermarkets, shopping centers, etc. The application also supports alerts about traffic congestion around tourist areas, automatic security alerts, epidemic warning areas, etc., making MyHanoi a reliable virtual travel assistant for tourists. Currently, the Hanoi Department of Tourism is leading the construction of a digital map of Hanoi tourism using GIS technology and developing common data management software.

3.2. Smart experience

Not only building smart destinations but also enhancing the provision of smart experiences for tourists is crucial for the development of smart tourism. When tourists experience smart tourism services, they actively contribute to creating effective and meaningful travel experiences. Tourists using digital devices, such as smartphones, to access the information infrastructure provided at destinations increase the value of their experiences. They can easily share their opinions and reviews on social media platforms, travel forums, websites, or even their personal pages. Social media platforms like Facebook, TikTok, etc., related to travel serve as useful reference channels for travelers in preparing their trips.

For example, on Facebook, there are many pages, groups, or communities about tourism in Hanoi, such as the fan page "Review Du lịch Hà Nội" (Review Hanoi Tourism) or "Kinh nghiệm du lịch Hà Nội" (Experience Hanoi Tourism), aiming to share experiences when visiting the capital. When visiting Bat Trang pottery village, a tourist shared their

experience: "We wanted to explore the ancient village on our own rather than taking a guided tour. It only took about ten minutes to use the app on our phone, and we knew which attractions to visit and what products to buy. We had some interesting experiences in the pottery village." Similarly, at the Temple of Literature - Quoc Tu Giam, to enhance the visitor experience, tourists will be provided with multi-functional smart tourism cards integrating functions related to tourism, health, banking, commerce, transportation, education, etc. These cards support tourists in making online payments, and experiencing convenient and safe sightseeing, especially when using services at heritage sites such as audio guides, souvenir shopping, parking, etc.

In addition, the public Wi-Fi system has also been upgraded in pedestrian spaces around Sword Lake and prominent tourist destinations. The smart tourism mobile application called "myHanoi" will be integrated with the digital map of the capital's tourism, helping tourists actively search for useful information throughout their journey, from basic information, ongoing and upcoming events, flight and train schedules, to connecting tourists with destinations, restaurants, hotels, supermarkets, shopping centers, etc. This demonstrates that Hanoi is actively providing many services and facilities for customers. It can be said that technology is one of the factors that bring positive experiences to tourists.

3.3. Smart business ecosystem

The term "smart business ecosystem" refers to a complex business ecosystem that creates and supports the exchange of tourism resources and co-creative tourism experiences. The business components of smart tourism are characterized by interconnected stakeholders operating flexibly, digitizing core business processes, and organizational agility. According to tourism experts, a smart tourism ecosystem is the intelligent collaboration of entities including government agencies, businesses, tourists, and local residents participating in tourism to achieve the high and sustainable growth goals of the industry. The smart tourism business ecosystem fosters strong relationships in an integrated environment based on specific activities and business networks.

Government agencies: The Hanoi Department of Tourism is currently making efforts to integrate information technology into its activities. The Hanoi Tourism electronic information portal, available in both Vietnamese and English at sodulich. hanoi.gov.vn and tourism.hanoi.gov.vn, along with social media accounts on Facebook, YouTube, Twitter, etc., has become an important and effective channel for promoting the capital's tourist destinations. The Hanoi Department of Tourism has digitized the city's tourism map to facilitate easy access and search for destinations for tourism businesses and tourists. On these information platforms, visitors can easily access and verify information about 12 tourist areas and destinations, 44 heritage sites, 12 craft villages, 14 eco-tourism resorts, 4 agricultural tourism sites, 26

sports, recreational, and entertainment tourism spots, 3,494 lodging establishments, 20 restaurants, 24 commercial centers and shops meeting tourist service standards, 1,084 international travel agencies, 48 domestic travel agencies, 35 transportation companies, and connect to an online database of 25,538 tour guides nationwide (including 5,342 tour guides licensed by the Hanoi Department of Tourism). The information provided on the website is also a basis for tourists to verify information about businesses, and lodging establishments, both domestic and international, enabling them to search for partners. Additionally, the website provides descriptive articles at standardized sites with thousands of destinations translated into various languages. This serves as a handbook for tour guides, ensuring accuracy in history and providing complete information according to scientific records, and serves as a basis for the implementation of handheld audio guides at tourist destinations within the capital.

Tourism businesses in Hanoi are also actively embracing technology to keep up with new business trends and meet diverse tourist demands. Many businesses are innovating to become smart businesses, successfully applying digital technology in the development of Hanoi tourism. According to statistics from the Vietnam National Administration of Tourism in 2019, nearly 100% of tourism businesses have their own websites, and most business activities are conducted online: marketing, product promotion, market expansion research, customer consultation, care, and execution of transactions, purchases, sales, payments, etc.

Consumers: In recent years, the internet user trend in Vietnam has been consistently increasing. According to a survey by Vnnetwork as of January 2021, there were about 68.72 million out of 97.8 million internet users (accounting for 70.3% of the population). According to a survey by market research company Q&Me, 88% of Vietnamese tourists search for information on the Internet, with 35% regularly using the Internet to search for travel information. Data from Google Trends in 2019 also shows that searches for "tourism" have tripled in recent years, with search information usually consisting of tourist destinations, restaurants, hotels, and travel experiences from other travelers. Tourists often use smartphones to search for information and perform procedures such as booking/checkout, ordering food, or paying bills. Overall, the smart business ecosystem in tourism in Hanoi is making significant strides in integrating smart technology into industry activities.

4. OPPORTUNITIES FOR DEVELOPING SMART TOURISM IN HANOI

4.1. The shift in tourists' preferences for experiencing and seeking tourism information

According to Vietnam's Search for Tomorrow - Year in Search 2020 report released by Google, 83% of consumers utilize online channels to research products before making a

purchase. Specifically, for products and services in the tourism industry, 78% of consumers seek information online. With this shift towards online research for travel experiences and information, only information and communication technology applications can adequately address tourists' needs. Google's 2020 report indicates a growing trend of consumers seeking personalized search content to fulfill their information requirements about products. In addition to basic trip details like accommodation and transportation, tourists also look for information about amenities, services, and destination-specific experiential activities. This trend has become more pronounced amidst the COVID-19 pandemic, further emphasizing the importance of technological applications in meeting evolving tourism demands. As a result, travelers increasingly rely on technological applications such as virtual reality tourism and online tourism to explore tourist attractions in various formats.

4.2. The advancements in digital infrastructure yielding numerous achievements

Digital infrastructure serves as the cornerstone in establishing a digital government and advancing the digital economy, including tourism. Therefore, telecommunications infrastructure needs to transition into digital infrastructure. According to the Ministry of Information and Communications, Vietnam's immediate objective is to develop 5G networks and equipment, master cloud computing infrastructure with "Make in Vietnam" technology, and to expedite the digital transformation process comprehensively and securely. With prioritized policies and developmental initiatives from the Party and Government, Vietnam's digital technology infrastructure has been invested in and has achieved certain milestones. By mid-January 2021, Vietnam completely transitioned internet addresses from IPv4 to IPv6 protocol. By mid-June 2021, 44 provinces and cities had issued IPv6 transition plans, covering about 70% of localities nationwide (Vietnam Internet Network Information Center - VNNIC, 2021). With its superior technology and security, IPv6 is the default protocol in 5G networks and the Internet of Things (IoT); it is a digital resource that aids in developing Internet networks, infrastructure, and digital services. Currently, Vietnam has 34 million IPv6 users, accounting for 46%. As of March 2021, Vietnam ranked second in the ASEAN region, fourth in Asia, and tenth globally in IPv6 adoption (Asia-Pacific Network Information Center - APNIC).

Additionally, Vietnam is one of the pioneering countries worldwide to successfully trial 5G technology - a technology capable of transmitting data much faster than 3G-4G. According to Minister of Information and Communications Nguyen Manh Hung, in 2020, Vietnam became the fifth country globally to master 5G technology, producing 5G infrastructure equipment and 5G phones. Furthermore, alongside 5G technology, cloud computing-based services are considered fundamental in the digital transformation process, as all data needs to be stored and connected to the cloud. The utility of the cloud enables individuals and enterprises to reduce usage costs and easily access data. Therefore, with investment and development efforts, Vietnam's cloud computing

market has reached approximately 3,200 billion VND. Currently, Vietnam has about 27 cloud computing data centers operated by 11 domestic enterprises, with over 270,000 connected servers nationwide (Vietnam Government Portal, 2021).

Hanoi has always been at the forefront of the country when it comes to the integration of digital platforms, social media, and information technology applications into the city's tourism and sightseeing activities. Examples of these include the Tourism Information Portal, digital maps, and applications for smart devices that allow visitors to search for information and learn about Hanoi's tourism offering.

Free Wi-Fi has been established at several tourist attractions located in the city's core areas. Every business has made the switch to digital for managing work and creating new products. Through a variety of applications, visitors may buy sightseeing tickets, pay for services remotely, utilize automated narrators, and use 3D technology to explore historical locations.

These favorable conditions will propel the overall development of the digital economy and specifically foster smart tourism development in Vietnam in the near future.

4.3. More engagement of tourism and technology organizations in the digital transformation process

The application of science and technology also facilitates tourism businesses' access to customers worldwide, helping to maximize revenue for the business while optimizing costs, time, and manpower. Recognizing the benefits that science and technology bring to business operations, many tourism enterprises have been proactively researching and applying scientific and technological achievements to streamline business costs, and create outstanding values for customers, thereby improving service quality and business efficiency. Consequently, an increasing number of information technology companies are focusing on researching and developing applications to serve the tourism industry.

4.4. The favorable conditions of the policy framework fostering the development of smart tourism

Industry 4.0 has had and continues to have a strong impact on the economy, culture, and society, which is evident in Directive No. 16/CT-TTg of the Prime Minister dated May 4, 2017, stating that tourism is one of the prioritized economic sectors for digital transformation strategy and the application of information technology to promote smart tourism in Vietnam. Resolution No. 08-NQ/TW of the Politburo on the development of tourism into a spearhead economic sector by 2030 also clearly expresses the aspiration to develop and elevate Vietnam's tourism to a level commensurate with its existing tourism potential. To enhance the application of science and technology in tourism, the Government has approved the "Comprehensive Plan for the Application of Information Technology in the Tourism Sector for the period 2018-2020, with a vision to 2025" in Decision No. 1671/QD-TTg dated November 30, 2018, contributing to realizing the goal of developing tourism into the country's spearhead economic sector.

It can be said that the current policy framework of Vietnam has created relatively favorable conditions, providing a solid legal basis for the implementation and development of smart tourism in Hanoi in the near future.

5. CHALLENGES AND SOLUTIONS TO SMART TOURISM DEVELOPMENT IN HANOI

5.1. Challenges for developing smart tourism

Lack of qualified smart tourism human resources: One of the challenges in the development of smart tourism is the limited resources of tourism businesses in Vietnam in general and in Hanoi in particular. The quality and quantity of tourism human resources have not kept pace with the rapid development of tourism in the capital city. Additionally, the workforce of tourism businesses in Hanoi currently only meets the basic requirements for information technology application, and their ability to adapt to new modern technologies is still lacking. Presently, the training of human resources in tourism schools primarily focuses on specialized training. For tourism businesses to have personnel knowledgeable about technology to operate smart tourism, it requires extensive and costly long-term training.

Lack of synchronization in the information system of stakeholders in tourism activities: In Hanoi, the lack of synchronization in the information system of stakeholders in tourism activities poses significant challenges to the city's tourism sector. Despite being home to diverse cultural attractions, natural landscapes, and historical sites, the tourism sector faces issues stemming from inconsistent promotion efforts, fragmented service information, limited community engagement, and ineffective collaboration among key stakeholders. Tourists may encounter discrepancies in promotional messaging and service quality due to inconsistent approaches from tourism product suppliers and government tourism management agencies. Additionally, the lack of community involvement in tourism planning and decision-making processes hinders efforts to foster sustainable tourism practices. Without synchronized information sharing and collaboration among stakeholders, Hanoi's tourism sector may struggle to fully capitalize on its potential for growth and development. Addressing these synchronization challenges is crucial for enhancing the competitiveness, sustainability, and overall visitor experience in Hanoi and Vietnam.

Tourism organizations' limited resources: With smart tourism, there is a large potential customer base, but the online tourism market in Vietnam in general and in Hanoi in particular still faces many limitations. Most tourism companies in Hanoi are small to medium-sized, with low competitiveness and have not yet developed strong international brand tourism companies. It is difficult to compete with foreign companies in terms of finance and experience in e-commerce, online marketing communication, etc.

Lack of comprehensive smart tourism development processes: In recent times, specific regulations and guidelines for implementing and developing smart tourism in

Vietnam in general, and Hanoi in particular, have not been uniform, lacking scientific basis, legal framework, and especially the absence of an effective "smart tourism model." Consequently, the implementation of smart tourism development still faces many difficulties and lacks consistency.

5.2. Solutions for developing smart tourism

Developing high-quality smart tourism resources: The capacity to use information technology in the workplace distinguishes the traditional tourist worker from the smart tourism workforce. To develop a high-quality smart tourism workforce in the context of Industry 4.0, with the goal of developing smart tourism in Vietnam in the coming years, training institutions must focus on increasing technology awareness and the ability of learners to apply information technology during the training process. This will help to improve the preparedness of human resource infrastructure in smart tourism development.

Developing cloud computing technology: To build tight and coordinated linkages on a digital platform among important institutions in the tourist sector, all stakeholders must have access to a shared information system that is routinely updated. Cloud computing technology provides a framework for storing shared data systems for smart tourism development. As a result, developing cloud computing technology is presently a major priority for synchronizing the data information systems of all organizations participating in smart tourist operations.

Creating a favorable mechanism for tourism businesses to participate in digital transformation: The government and state management agencies in tourism must develop and issue specific and detailed documents to provide direction for the industry and tourism enterprises to implement smart tourism, such as a smart tourism development strategy with an appropriate roadmap, institutional policies related to the application of science and technology in general, information technology and communication in particular, the establishment and implementation of e-government.

Enhancing digital transformation in the tourism business: Digital transformation in the tourism sector refers to the smart growth of tourism via the use of digital technology in business operations to please visitors and improve company business efficiency. Tourism firms should actively digitize their operations. Innovate advertising activities and promotions using digital technology gadgets. The majority of today's tourist enterprises are modest to medium-sized. As a result, the capital required for digital transformation and the application of information technology and communication advances in producing tourism products and services to improve the quality of the visitor experience is a significant problem. This necessitates procedures that promote and invest heavily in the development of scientific and technological applications in the tourist industry.

Boosting applied science and technology in the tourism sector: State and tourism management authorities must emphasize policies and stimulate research and the use of

science and technology in industry operations. Technology categories should be prioritized in the development of smart tourism. Improve cooperation with foreign countries in science and technology, learn from developed countries' experiences in cooperating and transferring modern technologies, and strengthen coordination among research institutes and universities at home and abroad in tourism to address scientific and technological tasks related to the development of smart tourism.

6. CONCLUSION

To transform tourism into a leading sector of the nation's economy and achieve sustainable development goals, the development of smart tourism is an inevitable trend and a top priority for the city of Hanoi to focus on. However, the implementation of smart tourism in Hanoi faces with numerous challenges. Based on an analysis of the current state of smart tourism development, and the identification of both opportunities and threats encountered in the process of developing smart tourism models in Hanoi, this paper offers several potential solutions. It is hoped that these proposed solutions can aid tourism enterprises and policymakers in researching and implementing smart tourism models, ultimately benefiting all stakeholders involved in the tourism sector.

While this paper provides valuable insights into the development of smart tourism in Hanoi, Vietnam, it is not without limitations. Firstly, the research primarily focuses on identifying current challenges and opportunities in smart tourism development without delving deeply into the specific strategies or initiatives that could address these issues. Additionally, the study relies heavily on secondary data sources, which may limit the depth of analysis and overlook nuances that could be captured through primary research methods such as surveys or interviews with key stakeholders. Furthermore, the scope of the paper is confined to the context of Hanoi, which may not fully represent the diverse landscape of smart tourism development across Vietnam.

For future research, it is recommended to conduct more in-depth investigations into the specific technological solutions and policy interventions that could facilitate the advancement of smart tourism in Hanoi. This could involve exploring case studies of successful smart tourism initiatives in other cities or countries and assessing their applicability to the Hanoi context. Additionally, conducting primary research to gather insights from key stakeholders in Hanoi would provide a more comprehensive understanding of their needs, challenges, and preferences regarding smart tourism. Moreover, expanding the geographical scope of the research to include other regions in Vietnam would enable a comparative analysis and identification of region-specific factors influencing smart tourism development. Overall, future research endeavors should aim to provide actionable recommendations and practical guidance for policymakers, businesses, and other stakeholders involved in advancing smart tourism in Hanoi and beyond.

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SPORTS TOURISM - A NEW DIRECTION FOR SUSTAINABLE TOURISM: RESEARCH ON THE PARAGLIDING FESTIVAL IN MU CANG CHAI, YEN BAI

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Abstract: In recent years, Mu Cang Chai, Yen Bai has become famous for its paragliding festival. The new model, tourism combined with sports, not only brings new experiences to tourists but also creates a brand for the locality. The study uses secondary data to clarify the development of Mu Cang Chai tourism brand through the paragliding festival. In addition, the study uses a consumer behavior model with primary data to identify factors that influence tourist behavior when deciding to travel to Mu Cang Chai and participate in the paragliding festival. Results show that there are three main factors affecting tourist behavior: price, service quality, and advertisement.

Keywords: Sports tourism, sustainable tourism, local brand development.

Tóm tắt: Những năm gần đây, Mù Cang Chải, Yên Bái nổi tiếng với lễ hội dù lượn. Mô hình du lịch mới kết hợp tham quan du lịch và thể thao không chỉ mang đến những trải nghiệm mới cho du khách mà còn tạo nên thương hiệu cho địa phương. Nghiên cứu sử dụng số liệu thứ cấp để làm rõ sự phát triển thương hiệu du lịch Mù Cang Chải thông qua lễ hội dù lượn. Ngoài ra, nghiên cứu sử dụng mô hình hành vi người tiêu dùng với dữ liệu sơ cấp để xác định các yếu tố ảnh hưởng đến hành vi của khách du lịch khi quyết định đến du lịch Mù Cang Chải và tham gia lễ hội dù lượn. Kết quả cho thấy có ba yếu tố chính ảnh hưởng đến hành vi của khách du lịch: giá cả, chất lượng dịch vụ và quảng cáo.

Từ khóa: Du lịch thể thao, du lịch bền vững, phát triển thương hiệu điểm đến.

1. INTRODUCTION

Tourism is an important economic sector that creates income and jobs for many people. The tourism industry creates millions of direct and indirect jobs and many opportunities for local businesses to grow. Tourism solves not only economic problems but also cultural, social, and environmental issues. Through cultural exchange, tourism plays an essential role in promoting understanding and respect for cultural diversity. Tourism uses social capital to generate profits. Therefore, sustainable tourism development is to solve long-term economic problems.

Mu Cang Chai is a highland district in the west of Yen Bai province, 180 km from Yen Bai city and more than 300 km from Hanoi, the capital. Mu Cang Chai has many

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unique features of nature and local culture. This place has long mountain slopes, with an average height of about 300 m to 450 m, deep valleys and many rivers and streams. One of the outstanding highlights of Mu Cang Chai's nature is the terraced fields. Culturally, the local population is mainly Mong people, accounting for more than 90%. Therefore, the culture here has a strong Mong ethnic identity.

Mu Cang Chai is a poor district of Yen Bai province. The economy is mainly agricultural. Currently, Mu Cang Chai's economy is shifting from agriculture to tourism. With its potential, the locality is developing attractive tourism products with local characteristics. In 2007, the terraced fields of three communes La Pan Tan, Che Cu Nha, De Xu Phinh were ranked as national landscapes by the Ministry of Culture, Sports and Tourism of Vietnam (2007). Mu Cang Chai terraced fields have officially been ranked among the top most colorful destinations in the world, voted by the travel magazine CN Traveler (Caitlin Morton, 2023).

Mu Cang Chai paragliding festival is an important annual local event. The festival was held for the first time in 2013, on the occasion of the ripening rice season, usually in September. Since 2017, Mu Cang Chai district has organized an additional event "Flying over the pouring water season" in May. The festival is held for three days. This is an event that combines sports, culture, and tourism. The festival aims to introduce and promote the natural and cultural beauty of Mu Cang Chai, while attracting a large number of tourists. Festival activities often take place at Khau Pha Pass - a pass known as the "Four Great Passes" of the Northwest region of Vietnam. "it is rated by pilots as one of the four beautiful flying spots in the country" and is the most beautiful flying spot among the 10 most beautiful flying spots in the world." (Yen Bai portal, 2017)

The main activities of the paragliding festival include professional and amateur paragliding competitions, attracting the participation of domestic and international pilots. Visitors can enjoy wonderful performances performed by pilots such as acrobatics, aerial shaping, and parachuting from a height of 2000 m. In addition, tourists can sign up to participate in paragliding, guided by experienced pilots, to fully enjoy the majestic beauty of the mountains. Besides paragliding activities, tourists can also experience cultural and artistic activities during the festival. Additionally, visitors have the opportunity to enjoy local cuisines, which are the specialties of the Northwest mountains..

In Vietnam, sports tourism has been popular in recent years. The trend of tourism associated with sports activities is considered one of the solutions to enhance destination image, thereby creating distinctive tourism products. Currently, there are many studies on developing tourism brands, but little research has mentioned the use of sports to enhance the experience of tourists in Vietnam. This study evaluates the effectiveness of sports

tourism by analyzing the case of Mu Cang Chai paragliding festival. Through customer behavior regarding participation in paragliding festivals, the study learns about the value of destnation brands, evaluated by the sports community. Thereby, the research gives more comments about the use of sports tourism to develop sustainable tourism.

2. LITERATURE REVIEW

Research on tourism branding has long been an attractive topic for many researchers and policymakers. Research on tourism branding ranges from clarifying the concept of tourism branding to factors affecting the destination image and tourism branding.

According to the American Marketing Association (AMA), a brand is "a name, term, sign, symbol or design, or their combination, intended to identify the goods or services of seller or group of sellers and differentiate them from the goods or services of competitors". Brands aim to differentiate products from other competitors (Rio Book, 2018). Other definitions state that branding does not stop at creating a name, or symbol for a product, but how a name (or other brand elements) creates positive links in consumers' minds about a product, making them like and buy a product, helping a product achieve expected indicators of revenue and profit (Pham Lan Huong, 2014).

Developing reputed destination brand is a sustainable tourism strategy. According to Kotler and Gertner (2002), destination brand can affect the attitudes of customers and investors toward the products and services. Sustainable tourism maintains harmony between the living environment and service business activities, creating a friendly experience for tourists (WTO, 2005). From those good experiences, tourists are motivated to return (Nepal, 2019; Lee et al., 2020). On the other hand, green and sustainable tourism trends are more and more popular, tourists are increasingly interested in green values when choosing destinations and tourism services (Kautish and Sharma, 2019). This is the driving force for businesses and investors to build green tourism brands, catching up customer demand on green tourism (Alipour et al, 2019).

Sports tourism is an activity associated with a trip in which individuals temporarily leave their place of residence to participate in sports activities, sightseeing, or viewing attractions (Gibson, 2017). Sports tourism not only promotes local culture but also facilitates economic development (Yang et al., 2020). Socially, sports tourism can help communities increase their local image (Getz et al., 2016; Morgan et al., 2011). This leads to attracting more visitors, promoting tourism development, and promoting the community destination (Pouder et al., 2018). However, sports tourism can also lead to changes in moral and social norms in communities (Hemmonsbey et al., 2020).

Economically, sports support the local tourism economy. Tourism managers consider sports tourism as a strategy to extend travel time and minimize seasonality (Higham et al., 2002; Higham, 2013). The economic benefits of sports tourism come from attracting not only tourists but also investors (Perić, 2018). Sports tourism creates new job opportunities,

increases people's income, and promotes local economic development (González-García et al., 2022). In addition, sports tourism can also promote innovation, urban growth, and the development of new services (Gaudette et al., 2017).

Besides, sporting events can help enhance the destination image (Mohan, 2010; Waller et al., 2014; Popa et al., 2017). When a sporting event is held, it helps promote that destination and attract the attention of visitors. In contrast, the impact of destinations on the image of sporting events has not been studied much. However, related studies show that individual cognitive about the destination, such as beliefs or knowledge about the destination, play a more important role than emotional factors in creating positive image of the event (Hallmann and Breuer, 2011).

3. METHODOLOGY

The research uses a combination of qualitative and quantitative methods. Both primary data and secondary data are used in the research.

Secondary data on the number of tourists and tourism revenue of Yen Bai province and Mu Cang Chai district are obtained from official local news sources: Yen Bai Newspaper, Yen Bai Television, Tourism Yen Bai News; and official government sources: Ministry of Industry and Trade, Communist Party of Vietnam Electronic Newspaper and independent research organizations Vietnam Chamber of Commerce and Industry (VCCI).

In addition, other secondary data is taken from the Google trends page, a Google data statistics page, showing the number of searches over time and by specific keywords. We use the keyword "dù lượn" (meaning "paragliding" in Vietnamese), checking the number of searches within the last 5 years, and the keyword "du lịch Mù Cang Chải" (meaning "Mu Cang Chai tourism" in Vietnamese), within 1 year to learn about tourism trends and tourism seasonal phenomenon through online search.

The research team uses a structured questionnaire to conduct surveys and interviews who are paragliding players. The questionnaire uses a 5-level Likert scale as the assessment standard: satisfied attitudes are point 4 and point 5; neutral attitude is point 3; and dissatisfied attitudes are point 1 and point 2. The interviews use open-ended questions to solicit comments from tourists about tourism businesses, local leaders, and tourism service staff. Furthermore, through interviews, the research team gain a deeper understanding of the current state of tourists' experiences regarding customer service experiences as well as the dissatisfaction they have encountered, their desires, aspirations, and participation in tourism.

We use Kotler and Fox's consumer behavior model to measure consumer behavior, which includes the following stages:

- Awareness: The first stage of the purchasing process, when consumers are aware of the problem and need for a good.

- Searching for information: Consumers are able to know about products through information sources (personal information, public information, commercial advertisements, or personal experience).

- Evaluating options: Consumers use the information they have to evaluate options for the final decision.

- Buying decision: After evaluating the options, consumers choose the products they think are best. They decide: Where, how many, what type do they buy?

- Post-purchase behavior: Consumer behavior regarding whether or not to re-use the product in the future.

Based on Kotler and Fox's consumer behavior model, we propose a model to analyze factors affecting tourists' decision to choose to experience paragliding at Mu Cang Chai as follows:

- Five independent variables: Identity of a paragliding brand, Advertisement, Price, Customer service, and Service quality.

- One dependent variable: Consumer behavior

The variables are measured by observed variables, described in Table 1. The research model is described in Figure 1.

Table 1: Table describing variables and observed variables

Variable	Observed variable	Explanation
Identify	Iden1	Familiar with the sport of paragliding
	Iden2	Interested in paragliding activities in Mu Cang Chai
	Iden3	Recognize the construction of local tourism brand based on paragliding in Mu Cang Chai
Advertisement	Adver1	The images and content of the advertisement are fully provided
	Adver2	The advertisement is appropriately designed
	Adver3	The advertisement is impressive and easy to recognize
Price	Price1	The price is suitable for the customer's current income
	Price2	The price is stable over a long period
	Price3	The price is competitive
	Price4	The price is appropriate for the service that the customer receives
	Price5	The price for a paragliding service experience is reasonable
Customer Service	CusSer1	The guide is enthusiastic, cheerful, and polite
	CusSer2	Convenient payment
	CusSer3	Support time, quick resolution of inquiries and complaints
	CusSer4	Many payment services are provided

	CusSer5	There are many attractive programs and events with many incentives for many people
	CusSer6	There is clear flight insurance
Service quality	SerQua1	Feel the height and speed when flying
	SerQua2	Feeling challenged and nervous when paragliding
	SerQua3	The technique and experience of the paraglider
	SerQua4	Other recreational activities in the area
Behavior	Behav1	Feel happy after experiencing paragliding in Mu Cang Chai
	Behav2	Will choose Mu Cang Chai as the top choice for paragliding
	Behav3	Ready to introduce paragliding in Mu Cang Chai to others
	Behav4	Will choose Mu Cang Chai to experience paragliding when introduced by others
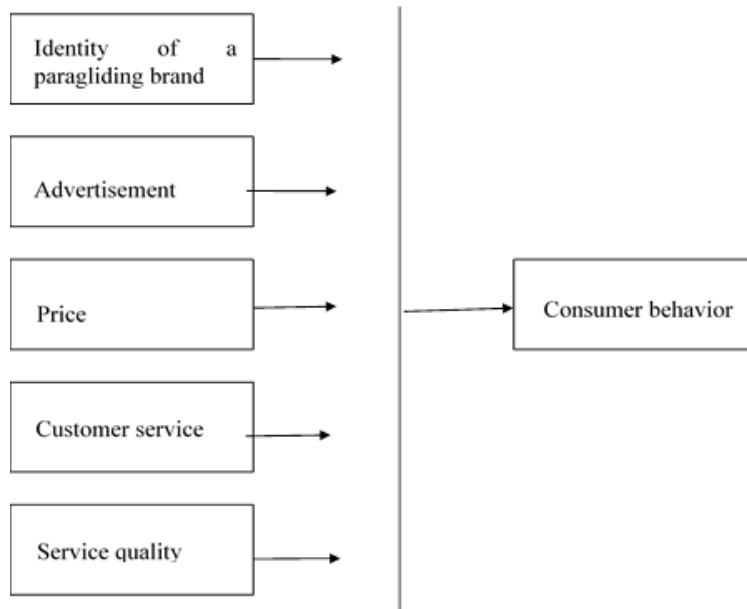
Figure 1: The research model

The interviewees were members of the paragliding community. Therefore, they knew about the Mu Cang Chai paragliding festival and other paragliding activities in general. Primary data is collected offline and online. We use a questionnaire to offline survey at the paragliding training ground in Yen So commune, Hoai Duc district, Hanoi City, where the paragliding community often gathers to practice and meet offline. We collected 60 survey samples. On the other hand, this questionnaire is posted on social networks, collecting 120 online survey samples. The total number of samples collected is 180, meeting the sample size requirements to implement the model according to Linus Yamane's formula (Tepping, 1968).

4. RESULT AND DISCUSSION

4.1. Tourism situation of Yen Bai province and Mu Cang Chai

Based on secondary data obtained from local and central government official sources, we can see the development of tourism in Yen Bai province. Table 2 provides detailed statistics on the number of visitors to Yen Bai and revenue from tourism in the province. Figure 1 visually depicts the growth rate of Yen Bai tourism according to the number of arrivals and tourism revenue. From 2018 onwards, tourism in Yen Bai province has grown rapidly, always over 10%/year in number of visitors and over 20%/year in revenue. In special cases such as the Covid period, in 2021, the province still maintained a positive growth rate, and in 2022 it rebounded strongly after a period of suppression due to the pandemic (specifically, a 100% increase in the number of visitors, and 124.5% increase in revenue). This confirms the attraction of Yen Bai tourism and the correctness of developing the tourism economic policy of the local government.
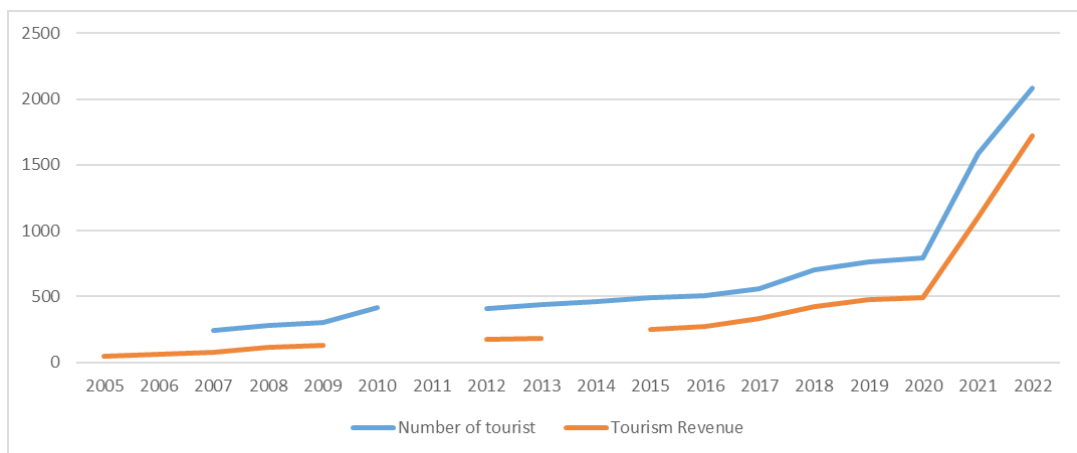
Figure 2. The development of Yen Bai tourism

Table 2. Data on Yen Bai tourism development

Year	Number of tourist (thousand people)	Growth Rate	Tourism Revenue (billion VND)	Growth Rate	Information Source
2005	130		41.8		Yen Bai Online
2006	170	30.7%	45	7.6%	Yen Bai Online
2007			64.48		
2008	240.5		75.64	17.3%	Yen Bai Online
2009	280	16.4%	117.1	54.8%	Vietnam Communist Party News.
2010	300	7%	126	7.6%	Vietnam Communist Party News.
2011	414	38%			Yen Bai Online

2012	…	…	…	…	
2013	405		172		Yen Bai Online
2014	440	8.6	178		Yen Bai Online
2015	460	4.5%			Yen Bai TV
2016	490	8.7%	251.6		Yen Bai Tourism
2017	507	3.4%	270.5	7.5%	Yen Bai Tourism
2018	560	10.4%	333	23.1%	Vietnam Business Forum
2019	700	25%	420	26.1%	Yen Bai Tourism
2020	760	13.3%	475	13.1%	Yen Bai Tourism
2021	793.7	4.4%	490	3.2%	Yen Bai Tourism
2022	1588	100%	1100	124.5%	Yen Bai Tourism
2023	2088	31.4%	1721	56.5%	Vietnam Economic News

Regarding Mu Cang Chai tourism, we do not find many statistics on the number of visitors and its tourism revenue. Currently, only information about 2022 and 2023 has been found and is summarized in Table 3. This shows that tourism in Mu Cang Chai has only received attention in recent years. Furthermore, we calculate the contribution of Mu Cang Chai to the tourism economy of Yen Bai province. Table 4 presents the results of these proportions. It shows that Mu Cang Chai contributes from 20% to 25% of revenue and the number of visitors to Yen Bai province. Although it started recently, Mu Cang Chai's tourism economy has shown its attractiveness and great development potential.

Table 3. Data on Mu Cang Chai tourism

Year	Number of tourist (thousand people)	Growth Rate	Tourism Revenue (billion VND)	Growth Rate	Information Source
2022	350		270		Vietnam Economic News
2023	365	4.3%	355.8	31.8%	Yen Bai Tourism

Table 4: Contribution of Mu Cang Chai in the tourism economy of Yen Bai province

Year	Number of tourist (thousand people)			Tourism Revenue (billion VND)		
	Mu Cang Chai district	Yen Bai province	Proportion	Mu Cang Chai district	Yen Bai province	Proportion
2022	350	1588	22%	270	1100	25%
2023	365	2088	17%	355.8	1721	21%

Paragliding represents a significant contribution to creating a Mu Cang Chai tourism highlight. According to statistics from the Google Trends page, when mentioning the keyword "dù lượn" (a Vietnamese translation of "paragliding") in the past five years, Yen Bai is the leading region in the country (see Figure 4). Paragliding is a new sport in

Vietnam. Figure 4 shows that there are only 7 provinces in Vietnam of interest, of which Yen Bai and Da Nang are superior.
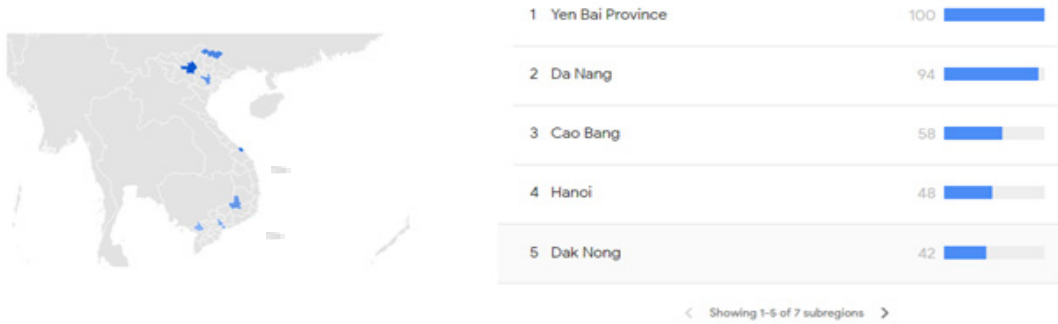
Figure 3: Level of interest in the keyword "paragliding" by region in the past 5 years

When checking data on the trend of "du lịch Mù Cang Chải (a Vietnamese translation of "Mu Cang Chai tourism") in the past year (2023), we see specific travel times. Figure 5 shows that "Mu Cang Chai tourism" has three major seasons: late January, early May, and early September, the peak time. Paragliding festivals are held in early May and early September, coinciding with tourist peak season. It can be concluded that the paragliding festival is one of the highlights of Mu Cang Chai tourism.
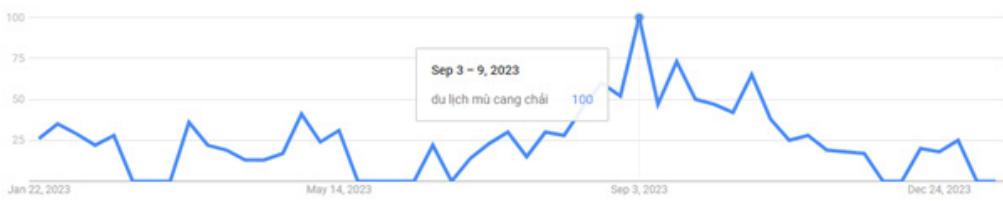
Figure 4: Level of interest in the keyword "Mu Cang Chai tourism" over time in the past year

4.2. Description of observed samples

180 participants respond to the survey, both online and offline. Table 5 describes information about the sample set based on the following criteria: age, gender, occupation, and income. Among them, the ratio of men and women is quite equal (58.3% and 41.7%, respectively). Age ranges mainly from 18 to 40 years old. The professions of the sample set are diverse. Business people account for the highest proportion, 28.3%. The income level of the respondents is also widely distributed, from less than 5 million VND to over 50 million VND.

Table 5: Descriptive statistics of the collected sample set

Criterion	Quantity	Ratio (%)	Criterion	Quantity	Ratio (%)
1. Gender			**4. Income**		
Male	105	58.3%	Under 5 million	25	13.9%

Female	75	41.7%	5 to 7 million	10	5.6%
2. Age			7 to 10 million	24	13.3%
Under 18	2	1.1%	10 to 20 million	50	27.8%
From 18 - 22	29	16.1%	20 to 30 million	44	24.4%
From 22 - 25	44	24.4%	30 to 40 million	10	5.6%
From 25 - 30	68	37.8%	40 to 50 million	10	5.6%
From 30 - 40	26	14.4%	Above 50 million	7	3.9%
From 40 - 50	11	6.1%			
3. Occupation					
Student	33	18.3%			
Teacher	17	9.4%			
Worker	5	2.8%			
Office staff	34	18.9%			
Business	51	28.3%			
Other	40	22.2%			

Table 6 shows the statistical parameters of the observed variables: mean value, standard deviation, and variance. From those results, we make the following comments:

Analyzing the statistical parameters of the observed variables, the mean values of Iden1, Iden2, and Iden3 are approximately 4. Thus, respondents agree that they are familiar with paragliding, interested in paragliding activities in Mu Cang Chai, and agree that building a local tourism brand based on sports activities such as paragliding in Mu Cang Chai is necessary.

For the price variable, the mean value of Adver1 and Adver3 are approximately equal to 3. These show that respondents have a neutral opinion on: Images provide sufficient information, and advertising content is impressive and easily recognizable. The mean value of Adver2 is approximately 4, so respondents agree with the opinion that the advertisement is designed appropriately.

Regarding the price variable, the mean value of the variables Price1, Price4, and Price5 are approximately equal to 2. Hence, respondents do not agree with the opinion that the price of paragliding in Mu Cang Chai is suitable for their current income. They do not agree that the price is suitable for the service received and they think that the experience paragliding service at Mu Cang Chai is not worth the money they spent. The mean value of Price2 and Price3 is approximately 3, indicating that customers are neutral with the opinion that prices are stable in the long term and competitive.

All observed variables of the customer service variable have mean values approximately equal to 4 and 4.5. It indicates that respondents agree that customer service is good. Customer service factors include warm tour guides, cheerful and polite attitude,

smooth payment process, supporting agency, quick resolution of complaints, many available payment methods, many attractive programs and events, and flight insurance.

We also obtained similar results for the service quality variable, the mean value of SerQua1, SerQua2, SerQua3, and SerQua4 are approximately equal to 4. Respondents agree that they like the high and fast movement when flying, and the feeling of challenge when paragliding. They also appreciate the skills and experience of the parachutists. Besides, they agree that there are many other activities in the festival area.

For consumer behavior variables, the mean values of Behav1, Behav2, Behav3, and Behav4 are approximately 4. Respondents agreed that they felt very happy after experiencing paragliding in Mu Cang Chai. They think they will choose Mu Cang Chai as their top choice for paragliding. They are willing to recommend paragliding in Mu Cang Chai to others and they will choose Mu Cang Chai to experience paragliding when introduced by others.

Table 6: Descriptive statistics of observed variables

Variable	Observed variable	Average value	Standard deviation	Variance
Identify	Iden1	4.256	0.7631	0.582
	Iden2	4.417	0.7314	0.535
	Iden3	4.189	0.7895	0.623
Advertisement	Adver1	3.089	1.0264	1.054
	Adver2	3.789	0.8969	0.804
	Adver3	3.317	1.0165	1.033
Price	Price1	2.139	0.7822	0.612
	Price2	2.572	0.7402	0.548
	Price3	2.772	0.731	0.534
	Price4	2.233	0.7917	0.627
	Price5	2.294	0.7223	0.522
Customer Service	CusSer1	4.189	0.6751	0.456
	CusSer2	4.428	0.7625	0.581
	CusSer3	4.317	0.7283	0.53
	CusSer4	4.017	0.8014	0.642
	CusSer5	4.372	0.5888	0.347
	CusSer6	4.389	0.6634	0.44
Service quality	SerQua1	4.194	0.6351	0.403
	SerQua2	4.106	0.7585	0.575
	SerQua3	3.678	0.8026	0.644
	SerQua4	3.506	0.6727	0.452

	Behav1	3.972	0.9655	0.932
Behavior	Behav2	4.167	0.8357	0.698
	Behav3	4.267	0.7952	0.632
	Behav4	4.033	0.7973	0.636

4.3. Model and model testing

The independent variables have Cronbach's Alpha coefficient greater than 0.6. Specifically, the Identify variable is 0.661; the Advertisement variable is 0.685; the Price variable is 0.805; the Customer Service variable is 0.628; the Service Quality variable is 0.661; and the Behavior variable is 0.709. The total correlation coefficient of all observed variables is greater than 0.3, from 0.492 to 0.793. As a result, all variables are accepted. This shows that the scale is sufficiently reliable and the observed variables meet the requirements.

The KMO coefficient is 0.649, satisfactory. The Barlett test model is satisfactory. Hence, the observed variables are suitable for performing Exploratory Factor Analysis (EFA).

After performing EFA, the variables Iden2, Iden3, Adver3, Price3, CusSer1, CusSer2, CusSer3, SerQua3, SerQua6 are eliminated. The remaining observed variables are combined into four new independent variables, specifically:

- Independent variable (1) Price (Price), including Price1, Price2, Price4, and Price5.

- Independent variable (2) Service quality (SerQua), including SerQua1, SerQua2, and SerQua4.

- Independent variable (3) Advertisement (Adver), including Adver1 and Adver2.

- Independent variable (4) Identity (Iden), including Iden1, CusSer4, and CusSer5.

The dependent variable, Behavior (Behav), includes four observed variables included in the analysis. The results show that the factor analysis is appropriate with the KMO coefficient is 0.738, and the Bartlett test reaching statistical significance Sig.=0.000 (<0.05). The factor loading = 2.145 > 1. The total extracted variance is 63.637%, meaning the factor explains 63.637% of the variation of the observed variable. Therefore, keep all observed variables.

The linear regression model is adjusted as follows:

$$Behav = \beta_0 + \beta_1 * Price + \beta_2 * SerQua + \beta_3 * Adver + \beta_4 * Iden$$

In which: β_k is the regression coefficient.

To test the regression model, we set the hypothesis: H0: $R^2 = 0$. The F test is used to test the hypothesis.

Assessing the suitability of the model through the R Square and Durbin-Watson test, we obtain the result $R^2 = 0.613 > 0.5$. We conclude that the expected significance of the regression model is good. The result of adjusted $R^2 = 0.590$ shows that the independent variable included in the regression analysis affects 59.0% of the variation of the dependent variable. The Durbin-Watson coefficient value = 1.914, within the range of 1.5 to 2.5, so the results do not violate the assumption of first-order serial autocorrelation.

To conduct a regression analysis, we evaluate whether the regression coefficient of each independent variable is significant in the model or not based on a t-test with hypothesis H0: Regression coefficient of independent variable $X_i = 0$. We get the results:

- Sig of variables Price, SerQua, Adver < 0.05: Reject hypothesis H0, meaning the regression coefficients of these variables are statistically significant, each of the above variables has an impact on the dependent variable.

- Sig of the Iden variable > 0.05: Accept the hypothesis H0, meaning the regression coefficient is 0, and the variable has no impact on the dependent variable.

We obtain that the values of the VIF index are all smaller than 10. There is no multicollinearity phenomenon between variables.

Finally, we obtain a model of factors affecting customer decisions:

$$\textbf{Behav} = 0.360 * \textbf{SerQua} + 0.112 * \textbf{Adver} - 0.102 * \textbf{Price}$$

The above equation shows that among the independent variables that impact and influence customer decisions, the variable "Service Quality" has the highest weight of 0.360, meaning this variable most influences customer decisions. Next is "Advertisement" with a weight of 0.112. The least influential variable is "Price" with a weight of 0.102.

5. CONCLUSION

Through the secondary data, we show the breakthrough growth in the tourism industry of Yen Bai province in general and Mu Cang Chai district in particular. Mu Cang Chai, from a poor district, has become an attractive tourist destination, contributing more than 20% of the province's tourism revenue. This demonstrates the attractiveness, and potential of the locality and the proper management of the local government in developing the tourism economy.

The paragliding festival makes Mu Cang Chai a famous paragliding destination in the country and the region. By combining tourism and sports, Mu Cang Chai creates new, competitive products in the tourism market. Sports tourism is still very new to the market. Other localities can learn more from Mu Cang Chai in developing sports tourism, creating more interesting tourism products for consumers, and building a sustainable local tourism economy.

Quantitative research on factors affecting consumer travel behavior in Mu Cang Chai. After editing the model, three factors directly impact consumer behavior: Price, service quality, and advertising. The model explains 59% of the variation in the dependent variable.

The research has many limitations. First, secondary data comes from many different sources, which cannot guarantee systematicity. Therefore, the data only shows relative trends and does not guarantee year-by-year accuracy for specific evaluation, analysis, and comparison. Second, the research model has many observed variables that are removed when performing EFA analysis. This shows that the design of observed variables is not effective. Besides, the model can only explain 59% of the variation in the dependent variable. Therefore, it is necessary to improve the model to achieve higher efficiency.

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DEVELOPING SUSTAINABLE TOURISM IN VIETNAM'S INTERNATIONAL INTEGRATION FROM THE EXPERIENCE OF DEVELOPING COUNTRIES

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Abtract: Currently, the trend of countries around the world is focusing on promoting economic development in industries and services. Tourism is considered one of the leading economic sectors, always growing at a high speed, attracting many countries to participate because of the great socio-economic benefits it brings. However, tourism is currently facing an increasing number of challenges and obstacles that could hinder recovery as well as future development, including changes in consumer behavior leading to unpredictable travel patterns. In the process of developing tourism, we need sustainable tourism that is good for the country now and sustainable for a long time to come. That is why sustainable tourism is an important part of the United Nations' sustainable development and the Strategic Orientation for Sustainable Development in Vietnam. Along with that trend, based on the experience of developing countries, Vietnam is also developing towards sustainable tourism. Within the scope of this article, the author group researched and learned about sustainable tourism, the experience of sustainable tourism development in some developing countries, the current situation, and lessons learned for Vietnam in developing sustainable tourism development.

Keywords: Developing countries; Lessons for Vietnam; Sustainable Tourism; World experience.

Tóm tắt: Hiện nay, xu hướng các nước trên thế giới đang tập trung đẩy mạnh phát triển kinh tế vào các ngành công nghiệp và dịch vụ. Trong đó du lịch được xem là một trong những ngành kinh tế hàng đầu, luôn tăng trưởng với tốc độ cao, thu hút được nhiều quốc gia tham gia vì những lợi ích to lớn về kinh tế - xã hội mà nó đem lại. Tuy nhiên, du lịch hiện đang phải đối mặt với ngày càng nhiều thách thức, trở ngại có thể cản trở quá trình phục hồi cũng như phát triển trong tương lai, bao gồm cả những thay đổi trong hành vi của người tiêu dùng dẫn đến các mô hình du lịch không thể đoán trước. Trong quá trình phát triển du lịch, chúng ta cần một nền du lịch bền vững (DLBV), tốt cho đất nước lúc này và còn bền vững dài lâu mai sau. Chính vì vậy mà DLBV là một phần quan trọng của phát triển bền vững của Liên hợp quốc và của Định hướng Chiến lược phát triển bền vững ở Việt Nam. Cùng với xu hướng đó, trên cơ sở kinh nghiệm các nước đang phát triển, Việt Nam cũng đang phát triển theo hướng du lịch bền vững. Trong phạm vi bài viết này, nhóm tác giả đã nghiên cứu, tìm hiểu về DLBV, kinh nghiệm phát triển DLBV của một số nước đang phát triển, thực trạng và bài học kinh nghiệm cho Việt Nam trong phát triển DLBV.

Từ khóa: Các nước đang phát triển; Du lịch bền vững; Kinh nghiệm thế giới; Bài học cho Việt Nam.

1. INTRODUCTION

Entering the 21ˢᵗ century, sustainable development is one of the world's millennium goals and also the top goal for Vietnam's development. Sustainable development is a

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basic principle in the country's development strategy in general and our country's tourism industry in particular. Tourism is one of the major industries globally, with a rapidly growing market and an increasingly important position in the world economy. Sustainable tourism is a growing trend in the tourism industry in many countries around the world. Documents of the 13th Party Congress determined: "Rapid and sustainable development relies mainly on science and technology, innovation and digital transformation", "Linking cultural development with tourism development, making tourism become a key economic sector, while protecting and preserving cultural resources for future generations" [6, 2021, pp.214, 145-146]. Vietnam's tourism development strategy for 2020 with a vision to 2030 emphasizes the view: "Sustainable tourism development is closely linked to preserving and promoting national cultural values; preserving the landscape and protecting the environment; ensuring security, national defense, social order, and safety" [3]. That is also the basis for us to develop sustainable tourism, ensuring that tourism is a key economic sector and that by 2030, Vietnam will become a country with a developed tourism industry.

2. THEORETICAL BASIS AND RESEARCH METHODS

2.1 Overview of sustainable tourism

The term sustainable tourism first appeared in 1996 and was defined by the World Tourism and Travel Council (WTTC): "as meeting current needs of tourists and tourist areas while ensuring the ability to meet the needs of future generations of tourism. Accordingly, the policy of tourism development does not negatively impact the human environment and human living environment [9, 2019].

Research by L.Hens [11,1998] states that "*Sustainable tourism requires managing all types of resources in a way that meets economic, social and aesthetic needs while maintaining cultural identity, fundamental ecological processes, biodiversity, and life support system*s."

In Vietnam, sustainable tourism has been specifically stipulated in Article 3 of the 2017 Vietnam Tourism Law: "*Sustainable tourism development is tourism development that simultaneously meets socio-economic requirements*" of society and the environment, ensuring harmony of interests of entities participating in tourism activities, without harming the ability to meet future tourism needs. The focus on sustainable tourism development shows that Vietnam's tourism industry is following the development trend of the world's tourism industry.

In short, sustainable tourism is tourism that minimizes costs and maximizes the benefits of tourism for the natural environment and local communities and can be implemented in the long term without adverse effects to the resources on which it depends.

    * *Standards for sustainable tourism development*

The set of standards was established to provide general knowledge about tourism and is the minimum standard that tourism businesses need to achieve. These standards apply to the entire travel industry. This set of standards includes the following 4 main topics [10, 2016].

Effective sustainable management: Legal compliance management system; Fully inform and report on its sustainable policies and activities to relevant parties; Customer satisfaction; Accurate advertising. For construction and infrastructure projects: all planning, design, construction, renovation, operation, or demolition must comply with zoning regulations and laws for the project. Respecting the capacity and integrity of the surrounding natural and cultural environment, use materials according to sustainable principles, appropriate to the locality;…

Maximize economic and social benefits for local communities and minimize harmful impacts: Support local and community infrastructure development initiatives; Use local labor; Prioritize local suppliers of goods and services; Support local businesses in developing and selling sustainable products and services based on the natural, historical and cultural characteristics of the area; Implement a policy against commercial, sexual or other exploitation or abuse, especially of children, adolescents, women, ethnic minorities or other vulnerable groups; Create job opportunities for people, including management levels, without discrimination on gender, race, religion,...

Maximize benefits to cultural heritage and minimize harmful impacts: Comply with national and international regulations and locally approved guidelines for the management and promotion of visitation to minority communities and culturally or historically sensitive areas, first to minimize harmful impacts, then to maximize local benefits and visitor satisfaction; Appreciate and incorporate local cultural elements (both traditional and modern) into activities, design, decoration, cuisine, respecting the intellectual property rights of the local community; Participate in the protection, conservation, and restoration of monuments, areas and traditions of historical, archaeological, cultural and spiritual value, while not hindering access by local people; ...

Maximize benefits for the environment and minimize harmful impacts: Conserve resources (water conservation, energy conservation,...); Reduce pollution from sources such as greenhouses, wastewater, transportation, and toxic waste,...; Conserve biodiversity, ecosystems, and landscapes.

According to the Global Sustainable Tourism Council, all of these standards must be fully and widely applied in sustainable tourism. In specific cases where a certain standard is not applied, an explanation must be given. However, there may also be cases where a certain standard does not apply to a specific tourism product due to local laws, and environmental, social, economic, or cultural conditions [10, 2016]. Because each tourist destination has its own culture, environment, and customs, and each country has its laws,

the above general criteria should be applied by local conditions; Depending on the country and each locality, there will be additional criteria to suit actual conditions.

2.2 Research Methods

In this article, the authors use the method of researching and analyzing documents. The method of collecting and processing qualitative information is a method of obtaining qualitative information from research related to the article. Based on previously published data and research results, the authors synthesize the experiences of sustainable tourism development of several developing countries: Taiwan, Thailand, and India, and through practice. Going on field trips to several locations and tourist centers in Vietnam to directly experience and have an objective, honest view to see the current state of sustainable tourism development in Vietnam and thereby bring out solutions.

3. EXPERIENCE IN SUSTAINABLE TOURISM DEVELOPMENT IN SOME DEVELOPING COUNTRIES

3.1 Developing sustainable tourism in Taiwan

In Taiwan, since joining the World Trade Organization (WTO), many products have been competing with traditional export markets such as Japan. Farmers began expanding into a new income-generating sector by converting their productive land to tourism and recreational farming. Rural leisure tourism has become a new form of agricultural management in Taiwan that has helped farmers overcome immediate difficulties due to small-scale production. The two main goals for this type are to serve the entertainment needs of the community and increase income for farmers.

To ensure that people and businesses can profit from this model, the Taiwan Resort Farm Development Association was established in 1998 to maintain rural culture and combine natural resources agricultural resources resort tourism, and education, this association has become a bridge between producers, business people, government, education, and tourism. Through many years of joint operations, it can be said that this industry has had a successful combination. It has not only provided an ideal environment for eco-tourism, promoting the healthy food and organic food industry but also created a unique culture for the development of rural craft villages and continued to develop for future generations.

According to the Council of Agriculture of Taiwan (COA), about 2,000 hectares of land have officially been converted to farms and more than 180 recreational farms have been established. This industry has contributed to attracting growth in the tourism industry, especially in creating agricultural products as gifts for tourists to help increase industry profits. The development of "product stores" to showcase the technology, design, and features of typical local products. Every year, Taiwan's agricultural department organizes agricultural commodity fairs to introduce improved products and packaging. According to COA, the output value of these stores including wine, high-quality rice, bamboo

products, and high-value products from livestock and seafood will reach about NT$12.3 billion. (about 7,195.5 billion VND) in 2012. Furthermore, 4,500 job opportunities will be created by the industry in 4 years.

Taiwan's rural entertainment tourism types include major types such as resort experiences, entertainment experiences, flavor experiences, and discovering new insights [2, 2017].

3.2 Thailand strives to promote sustainable tourism trends

In recent times, Thailand has made efforts to deploy many strategies and measures to promote the tourism industry to become more responsible and sustainable, not only generating income but also helping to preserve the environmental landscape, and nature as well as maintaining the traditional lifestyle of local people.

For many years, to cope with increasingly serious challenges from climate change, the Thai Government has made efforts to integrate climate change issues and policies into its economic development strategy. As an industry that plays an important role in the development of the Thai economy, the tourism industry is not left out.

Along with post-pandemic recovery efforts, Thai tourism is promoting the concept of sustainable tourism to ensure a balance between economic goals and protecting nature and the environment, striving to achieve commitments made by the Government. The Thai government proposed at the 26th United Nations Conference on Climate Change (COP26) held in 2021. Accordingly, Thailand will achieve carbon neutrality by 2050 and reduce greenhouse gas emissions (GHG) to zero by 2065.

In recent times, the Thai tourism industry has implemented many strategies and measures to achieve this goal of sustainable tourism development. One of them is the "Low Carbon Destination" tourism model, first applied on Koh Mak island in Trat province.

To deal with these risks, 10 years ago, the Designated Areas for Sustainable Tourism Authority (DASTA) began applying the "Low Carbon Destination" tourism concept to promote and support Community and local parties develop a sustainable tourism platform. With the active cooperation of the local community on the island, on September 25, 2012, the Koh Mak Low Carbon Destination Declaration was signed to cooperate in making Koh Mak a model for tourism. Environmental friendliness. With the application of the Bio-Circular-Green (BCG) economic model, this island will become a tourist destination that not only generates income for the people but is still well-managed and ensures the clean and beautiful environment. and maintain the traditional lifestyle of local people.

In 2022, the Thai Ministry of Tourism and Sports announced a national campaign to promote Koh Mak as a model of sustainable tourism, not only as a "Low Carbon Destination" but also as a business model. Circular economy uses innovations to deploy and bring benefits to all parties involved in this activity.

In addition to efforts to develop "Low Carbon Destinations" tourism, the Thai tourism industry also implements many measures to maintain the quality of natural tourist attractions such as closing some locations for periods. Change travel schedules by seasonal patterns and use weather forecasts to plan arrangements for various travel activities, such as culinary, medical, and wellness or cultural events.

The Thai government has also established a policy to manage national parks and natural tourism sites for sustainability and environmental protection, with participation from many sectors of society. At the same time, it also creates a big push for the low-carbon tourism industry towards sustainable development, becoming the new direction of Thailand's tourism industry [7, 2023].

3.3 Experience in creating sustainable tourism in India

As the G20 Chair in 2023, India has launched a new tool in collaboration with the World Tourism Organization (UNWTO) to promote the tourism sector in implementing the 17 Sustainable Development Goals of the United Nations (SDGs).

Tourism becomes the focus of sustainable development: UNWTO together with the Group of leading developed and emerging economies in the world (G20) develops a roadmap to make tourism a central pillar of the 2030 Agenda on Sustainable Development. Before the G20 Leaders' Summit took place, the Indian Ministry of Tourism worked with UNWTO to complete the G20 Tourism Information Sheet and Sustainable Development Goals. This tool contributes to promoting the development and implementation of tourism policies and initiatives towards a good and sustainable future for all by 2030.

Among the 17 global sustainable goals are poverty eradication, hunger eradication, quality education, gender equality, clean water and sanitation, clean and sustainable energy, ensuring healthy lives, jobs and economic growth, industry, innovation, and infrastructure...

Trend of responsible adventure tourism: In recent years, adventure tourism has been one of the prominent trends in the Indian tourism industry. According to Outlook India, responsible adventure tourism models in India can become typical examples of implementing the United Nations Sustainable Development Goals.

After the G20 Leaders Summit, India is expected to welcome about 15 million international visitors (inbound) by 2024 for adventure tourism alone, with revenue expected to reach 30 million USD. With a large market size and strong growth potential over the years, the Indian Tourism industry has determined that adventure tourism is not only a niche market for tourism but can also become a major market. A pioneering school, serving as a model for other types of tourism in its approach to sustainability and development. The vision of tourism managers in this country is to create 140 million jobs by 2030, with revenue reaching 56 billion USD, with an annual industry growth rate of 20%. With the "Make in India" initiative, the government ensures that 60% - 90% of revenue must go to local communities, to strengthen their economic position.

Worth mentioning, India Tourism 2018 celebrated the importance of adventure travel, aiming to make India among the top 10 global destinations by the end of the decade. Through measures to strengthen infrastructure and establish high safety standards, India can unleash the enormous potential of its diverse terrain and rich cultural heritage, from the Himalayas to the north to the lagoon system and canals of Kerala in the south, from the desert in the west to the long coastline in the east, the amazing wildlife parks in the Northeast,... India offers many destinations and diverse adventure activities, with a large number of tourists and followers around the world.

However, adventure tourism often takes place in ecologically sensitive areas, so the influx of uncontrolled and irresponsible tourists puts significant pressure on the ecosystem—and the local community. Therefore, balancing the desire to experience adventure with responsible environmental protection activities is an important task in the context of this genre's rapid development. In addition, adventure activities such as mountain climbing, paragliding, river rafting, and zip-lining often have many potential risks, so ensuring the safety of participants is very important for the participants—sustainability of this type. In 2018, the Indian Ministry of Tourism and the Association of Adventure Tour Operators of India (ATOAI) launched the "India Adventure Travel Guide" which has been approved by the Association of Tour Operators. Adventure Tourism India (ATOAI) aims to provide Standard Operating Procedures to the community of adventure service providers [5, 2023].

4. SUSTAINABLE TOURISM DEVELOPMENT IN VIETNAM TODAY MEETS INTEGRATION REQUIREMENTS - CURRENT SITUATION AND LESSONS LEARNED FOR VIETNAM

4.1 Current status of sustainable tourism development in Vietnam

Currently, following the general trend of world tourism, Vietnam's tourism industry is also developing in the direction of sustainable tourism, with the principle of exploiting and using resources reasonably, limiting excessive use of resources and waste minimization, tourism development must be associated with preserving diversity, development must be consistent with the socio-economic whole, sharing benefits with local communities, and encouraging the participation of local community into tourism activities. Many localities in Vietnam have become destinations that attract domestic and foreign tourists, improving Vietnam's image and position on the world tourism map, and gradually building a destination brand in tourism.

As of May 11, 2023, international visitors to Vietnam have reached more than 11.2 million people, 3.8 times higher than the same period last year and equal to 68.9% compared to the same period in 2019 - the year before the COVID-19 epidemic occurred.. December has many major holidays that promise to create a breakthrough for Vietnamese tourism to achieve new goals. Of the total of more than 11.2 million international visitors to Vietnam in 11 months of this year, visitors arriving by air reached more than 9.8 million,

accounting for 87.3% of the number of international visitors to Vietnam and tripled. ,7 times the same period last year; by road reached more than 1.3 million people, accounting for 11.9% and 4.1 times higher; by sea reached 87.9 thousand arrivals, accounting for 0.8% and 102.8 times higher.

The top 10 international tourist markets to Vietnam in 2023 also have changed compared to before the COVID-19 epidemic. In 2019, China is Vietnam's largest international tourist market, followed by South Korea, Japan, and Taiwan; Russia, England, and France are also countries with the highest number of visitors to Vietnam. However, the 10 largest international tourist markets of Vietnam today include Korea, China, Taiwan, the United States, Japan, Thailand, Malaysia, Cambodia, Australia, and India. The unstable economic and political situation in Europe after the war between Russia and Ukraine has greatly affected the travel of this region's customer group.
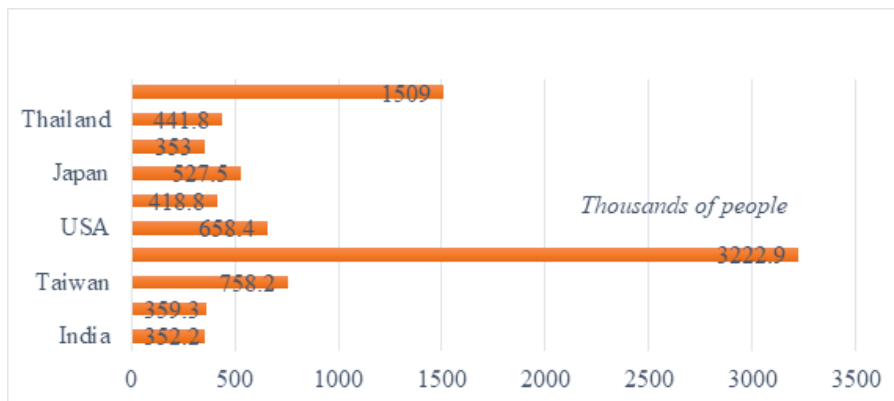
Figure 1. 10 international markets with the number of visitors to Vietnam at most 11 May 2023

(*Source: General Statistics Office*)

To achieve such encouraging achievements, from the beginning of 2023, the entire tourism industry has synchronously and effectively implemented many tourism recovery and development policies, at the same time localities and businesses have also actively deployed many tourism products, cultural and sports activities to stimulate tourism demand [8, 2023].

Service revenue increases sharply during the 2023 summer tourist peak season.

June and July are the peak months of the summer tourist season, so revenue from accommodation, food, and travel services increases compared to previous months. In July 2023 alone, revenue from accommodation, catering, and travel services nationwide is estimated to reach 60 trillion VND, up 4.9% over the previous month and up 5.7% over the same period last year. In the first 7 months of 2023, revenue from accommodation, catering, and travel services reached 395.8 trillion VND, up 17.7% over the same period last year, of which accommodation, and catering services increased by 16.3% and travel tourism increased by 53.6%.

Figure 2: Revenue from accommodation, catering, and travel services months of 2023

(*Source: General Statistics Office*)

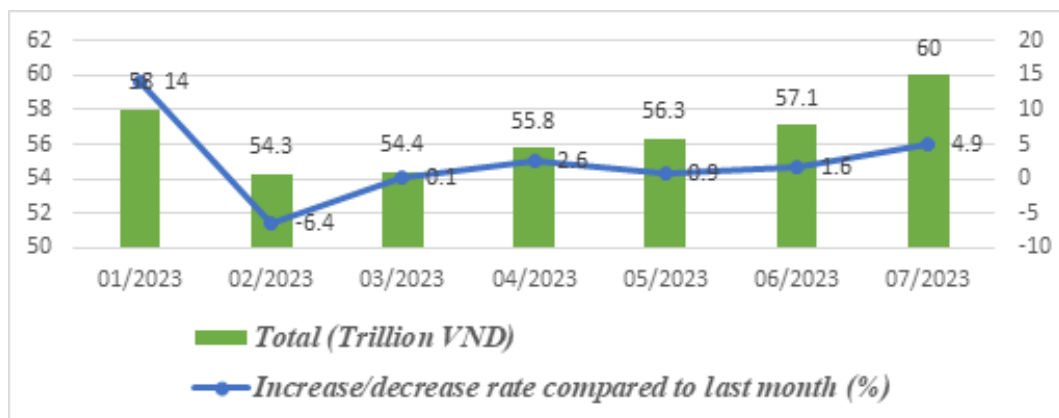Revenue from service and tourism activities increased due to the number of domestic and international tourists continuously increasing during the peak season. International visitors to Vietnam in July 2023 are estimated to reach more than 1 million people, up 6.5% over the previous month and 2.9 times higher than the same period last year; In the first 7 months of 2023, international visitors to our country are estimated to reach more than 6.6 million people, an increase of 6.9 times. Thus, after only 7 months, Vietnam's tourism industry has reached 83% of the yearly plan to welcome international visitors. international tourism peaks at the end of the year.

Domestic visitors in July 2023 are estimated to reach 12.5 million, including 8.3 million staying guests. The total number of domestic visitors in 7 months of this year is estimated at 76.5 million; Total revenue from tourists is estimated at 416.6 trillion VND [4].

However, Vietnam's tourism industry still faces significant challenges.

Firstly, although certain results have been achieved in investing in building and perfecting the tourism infrastructure system in a more synchronous and modern direction, the road, aviation, and wharf traffic systems are still lacking... the country is still considered underdeveloped, lacking safety standards and ease of access for tourists to be able to move quickly, safely and conveniently. Transportation costs and transportation costs are still high. The telecommunications information system has not been widely developed, quality is limited while service prices are much higher than other countries in the region.

Second, legal regulations on tourism management are incomplete and there are still many inadequacies in tourism investment and business activities. Awareness of businesses and people about sustainable tourism development is still limited. Most of Vietnam's tourism businesses are small, with limited service quality assurance, low management capacity, and weak international competitiveness. While the Vietnamese legal system is not yet complete, many business establishments have not yet established a reputation

and are doing business in a predatory manner. In many places, activities take place spontaneously, and chaotically, and even cause inconvenience to guests. Some negative incidents affect the image of Vietnamese tourism.

Third, the quality of tourism products. The level of linkage between tourism products is still very limited. The consequence is that tourism services focus mainly on exploiting tourism resources, causing overcrowding. In addition, the tourism industry's human resources are poorly trained, weak in professional qualifications, and foreign languages, and lack experience and understanding of sustainable tourism; Management and service teams with high professional qualifications in tourism business establishments in the fields of hotels, restaurants, resorts, and entertainment facilities are lacking and unsatisfactory to meet the strong development needs of the tourism sector.

4.2. Lessons Learned

Based on the experience of developing sustainable tourism in some developing countries and from the current practice of developing sustainable tourism in Vietnam, to develop sustainably and effectively, in the coming time, Vietnamese tourism needs to implement solutions as follows.

First, improve the effectiveness and efficiency of State management tools for protecting the environment and resources, ensuring sustainable tourism development

Organize and implement well the propaganda of laws and policies on sustainable tourism development to investors, tourists, and all people in the tourist area. The State needs to strictly manage the licensing and operations of tourism businesses, the organization, and participation in tourism activities, cultural and tourism events; Strengthen inspection and examination of the use and protection of natural resources and the environment; Strictly implement regulations on surveys and environmental impact assessments when investing in tourism projects...

Strictly control and take measures to limit the impact of economic activities in other fields (construction, transportation, industry, agriculture...) on the environment in tourist areas and destinations. Research and determine the limits of pressure from tourism activities on resources and the environment; Regularly monitor and check resource use, and avoid overuse, which causes the risk of exhaustion, decline, or serious degradation.

Complete the system of rules, regulations, and regulations on environmental protection in tourist areas and destinations. Develop tourist management regulations, festival rules, codes of conduct..., propagate them so that tourists respect and have cultural attitudes toward humanistic tourism resources; At the same time, raise awareness of preserving traditional cultural values, social environment, and traditions of the community when participating in tourism activities. Urging and regularly monitoring establishments to fully implement environmental protection regulations and regulations in tourism activities.

Second, enhance resource allocation and attract investment capital for sustainable tourism development.

Conduct an investigation and overall assessment of the current status of national tourism products, thereby building a tourism development plan that closely follows market needs, diversifying products to meet increasing requirements-diversity, and richness of tourists.

Focus on investing in developing transport infrastructure systems, electricity, water, environment, post and telecommunications, and infrastructure of industries and fields directly related to tourism development such as banking, finance and credit, health,... to enhance tourists' accessibility to destinations, while creating a link in the tourism resource chain as well as a link between tourism and other industries. In particular, it is necessary to promote investment promotion activities in large infrastructure projects and key national tourism projects. Encourage tourism development investment projects to have specific commitments to protect, embellish, and develop tourism resources. Develop investment incentive regulations in specific tourist areas and destinations; create more favorable conditions in terms of administrative procedures, business establishment licensing, and business and investment licensing; Accelerate site clearance progress.

Raise awareness of tourism businesses in implementing and participating in tourism product quality standards. Build a product development linkage mechanism between the tourism industry and related industries. Raise awareness and promote the role of the community in tourism product development, especially diversifying and exploiting unique local tourism products. Diversify forms of capital mobilization, focusing on attracting capital from small and medium enterprises and residential communities for investment in tourism development.

Third, train and develop quality human resources to meet the requirements of sustainable tourism development.

Establish a database system on national tourism human resources to fully assess the quantity and quality of human resources in the tourism industry; Survey, evaluate, and forecast tourism human resource needs in both the immediate and long term; Develop and organize the implementation of planning and plans for human resource development in the tourism industry by the general planning, development requirements and goals and orientations of tourism development.

Regularly organize training and retraining activities for human resources in the tourism industry to meet the development requirements of the industry, focusing on training and developing a team of experts in each specialized field of tourism activities, especially sustainable tourism development; improve the quality of officials and civil servants in state management of tourism at all levels; Close combination of theoretical and practical training;

In particular, emphasize educational content on natural resource and environmental protection in the program system of all levels of tourism training.

Fourth, develop the market, promote promotion of sustainable tourism.

Immediately deploy the development of strategies, programs, and long-term and annual plans on tourism promotion, especially environmentally friendly types of tourism, cruise tourism, and spiritual tourism, heritage tourism... and promote association activities to improve overall efficiency in promotion and advertising.

Promote cooperation programs with international organizations to expand tourism promotion activities. Invest adequate funding for tourism promotion and advertising; Expand socialization of tourism promotion, encourage businesses to be more active and proactive in promoting their businesses, and contribute to promoting the image of national tourism while providing training. Guide, propagate, and educate responsibility and honesty in promotional activities; Strictly inspect promotional content and strictly handle violations in tourism promotion activities to ensure the reputation of the Vietnamese tourism brand.

Fifth, build a local brand based on inherent cultural foundations.

Currently, around the world, tens of thousands of cities and regions are undergoing strong competition to attract tourists and investors. Therefore, any locality with a strong brand will attract a lot of attention from investors and tourists and thereby gain results and benefits such as economic prosperity, steady growth and cultural diversity. Local brands can be associated with traditional products of that locality such as cuisine, costumes, and arts...; It can also be a symbol created by the locality during the restructuring process, to convey a new message. Therefore, a successfully built local brand can help tourists identify that locality easily.

5. CONCLUSION

For the tourism industry, sustainable development associated with environmental protection, and preserving and promoting cultural heritage values has been a requirement. Resolution No. 08-NQ/TW, dated January 16, 2017, of the Politburo, on "Developing tourism to become a key economic sector" emphasized the viewpoint of sustainable tourism development; preserving and promoting cultural heritage and fine traditional values of the nation; protecting the environment and nature...; At the same time, one of the key tasks in tourism development is to focus on developing attractive sea and island tourism products, cultural tourism, spiritual tourism, ecotourism, and community tourism. In the current context, to quickly recover and accelerate effective sustainable tourism development requires ministries, branches, localities, and businesses to maximize what has been done, valuable experiences or lessons, and lessons learned. Our very different characteristics come up. Tourism development must be considered a common responsibility of the entire political system, all levels, sectors, localities, and the entire society under the leadership and

strict direction of Party committees at all levels, with unified management of the State... only then can Vietnam develop and integrate with the region and the world.

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INTEGRATING TECHNOLOGY CONDITIONS FOR DEVELOPING SMART TOURISM AT DESTINATIONS IN THE NORTHWEST OF VIETNAM

Lê Quang Huy[1], Cao Thị Thanh[2]

Abstract: *This research delves into the integration of technology in advancing smart tourism in Vietnam's Northwest region, encompassing Yen Bai, Lao Cai, and Ha Giang provinces. Adopting a qualitative research method, the study gathered insights through interviews with tourists, tourism organization managers, and local government authorities to identify key themes involving the integration of technology in tourism. These themes encompass information access and navigation, multimedia experience enhancement, social sharing, convenience, virtual reality for remote exploration and environmental sustainability, among others. The research results revel a significant potential for smart technology to enhance the tourism experience, streamline service accessibility, and promote sustainable tourism practices. Furthermore, the study proposes actionable solutions including the development of digital infrastructure, the integration of augmented and virtual reality at tourist attractions, education initiatives for local communities and tourist on digital tool utilization, and comprehensive digital marketing strategies. This research contributes to the existing knowledge by providing a comprehensive understanding of the multifaceted impact of smart devices on tourism development and offering a strategic framework for leveraging technology to achieve sustainable and economically beneficial growth in Vietnam's Northwest region's tourism sector.*

Keywords: *Integrating technology, Smart tourism, North West region.*

Tóm tắt: *Nghiên cứu này tìm hiểu về điều kiện tích hợp công nghệ trong phát triển du lịch thông minh ở vùng Tây Bắc Việt Nam, bao gồm các tỉnh Yên Bái, Lào Cai và Hà Giang. Áp dụng phương pháp nghiên cứu định tính, nghiên cứu đã thu thập những hiểu biết sâu sắc thông qua các cuộc phỏng vấn với 30 khách du lịch, 10 nhà quản lý tổ chức du lịch và 10 nhà quản lý của chính quyền địa phương để xác định các chủ đề chính liên quan đến việc tích hợp công nghệ trong du lịch. Các chủ đề này bao gồm truy cập và điều hướng thông tin, nâng cao trải nghiệm đa phương tiện, chia sẻ xã hội, sự tiện lợi, thực tế ảo để khám phá từ xa và tính bền vững của môi trường, cùng nhiều chủ đề khác. Kết quả nghiên cứu cho thấy tiềm năng đáng kể của các công nghệ thông minh trong việc nâng cao trải nghiệm du lịch, hợp lý hóa khả năng tiếp cận dịch vụ và thúc đẩy các hoạt động du lịch bền vững. Hơn nữa, nghiên cứu còn đề xuất các giải pháp khả thi bao gồm phát triển cơ sở hạ tầng kỹ thuật số, tích hợp thực tế ảo và tăng cường tại các điểm du lịch, sáng kiến giáo dục cho cộng đồng địa phương và khách du lịch về cách sử dụng công cụ kỹ thuật số và chiến lược tiếp thị số toàn diện. Nghiên cứu này đóng góp vào nền tảng kiến thức hiện có bằng cách cung cấp sự hiểu biết toàn diện về tác động nhiều mặt của các công nghệ thông minh đối với phát triển du lịch và đưa ra khung chiến lược tận dụng công nghệ nhằm đạt được sự tăng trưởng bền vững và có lợi về kinh tế trong ngành du lịch vùng Tây Bắc Việt Nam.*

Từ khoá: *Tích hợp công nghệ, du lịch thông minh, Tây Bắc.*

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1. INTRODUCTION

In the evolving landscape of global tourism, the integration of smart technologies into tourism development has emerged as a pivotal strategy for enhancing visitor experiences, operational efficiency, and sustainable growth. The concept of smart tourism capitalizes on the advent of information and communication technologies (ICT) to create enriched, seamless, and personalized tourist experiences. This paradigm shift towards smart tourism is particularly relevant in the context of Vietnam's Northwest provinces-Yen Bai, Lao Cai, and Ha Giang-regions renowned for their breathtaking landscapes, rich cultural heritage, and burgeoning tourism potential. Despite their allure, these areas face unique challenges, including infrastructural limitations, digital divides, and the need for sustainable development models that preserve their natural and cultural assets while fostering economic growth. The current body of literature on smart tourism provides valuable insights into the benefits and applications of smart technologies in tourism. However, there remains a significant gap in understanding the specific conditions and frameworks required to effectively integrate these technologies within the unique contexts of emerging tourism destinations like Vietnam's Northwest provinces. This research seeks to address this gap by exploring the technological, infrastructural, and regulatory prerequisites for the successful adoption of smart tourism practices in these regions. This study is particularly significant given the rapid pace of technological advancement and the increasing reliance on digital solutions in the tourism sector. It not only contributes to the theoretical understanding of smart tourism development but also offers practical recommendations for stakeholders, including policymakers, tourism operators, and local communities, on harnessing smart technologies to enhance tourism experiences, promote sustainable development, and drive economic growth. By focusing on the Northwest provinces of Vietnam, this research underscores the importance of contextualized strategies that consider the geographical, cultural, and infrastructural specificities of each destination, thereby providing a nuanced approach to the development of smart tourism. In doing so, this research aims to make a dual contribution to both theory and practice. Theoretically, it enriches the academic discourse on smart tourism by providing a comprehensive analysis of the conditions necessary for its implementation in specific regional contexts. Practically, it offers a strategic blueprint for the effective integration of smart technologies in tourism, highlighting the role of collaborative efforts, policy support, and technological infrastructure in achieving sustainable tourism development. Through this investigation, the study aspires to pave the way for future research and implementation strategies that leverage the transformative potential of smart technologies to enhance the competitiveness and sustainability of tourism destinations worldwide.

2. THEORETICAL BASIS AND RESEARCH LITERATURE REVIEW

2.1. Smart tourism

According to the UNWTO (2015), tourism was defined "a social, cultural, and economic phenomenon that entails the movement of people to countries or places outside their usual environment for personal, business, or professional purpose". Given that tourism relies heavily on knowledge and is intertwined with information and communication technologies, the adoption of the "smart" concept in tourism has become unavoidable (Koo et al., 2015). Recognizing the potential of advanced technologies and the necessity to adapt businesses to rapid technological changes, companies within the tourism sector have initiated the implementation of smart concepts to enhance business practices and establish a sustainable competitive advantage (Ozgunes & Bozok, 2017). The incorporation of smart technologies into the operations of tourism organizations not only transformed the tourist experience but also facilitated the development of more inventive business models. The emergence of smart tourism is a consequence of the integration and infiltration of intelligent technology into the tourism sector. Innovations resulting from this integration primarily pertain to the smart hotel management system, the smart ticketing system, the smart remote video monitoring system, the smart tour guide system, and the smart travel agency system.

Yoo et al (2017) found particular characteristics of smart tourism in their previous research. Firstly, tourists can navigate using smart devices, with smart tourism transforming them into informed and engaged contributors to the creation of a tourism product. Moreover, smart tourism advocates for the adoption of a multi-channel approach as a bridge connecting the real and virtual spaces. Additionally, it offers tourists the opportunity to interact with the local population or other travellers. Beyond these aspects, smart tourism encompasses other features (Hunter et al., 2015). It facilitates the quicker availability of tourism products to tourists through e-commerce, enhances the accessibility of tourism destinations via GPS navigation, makes information more interactive, introduces new resources, and enhances the appeal of destinations through their online representation on websites or social media. Besides offering tourists a unique experience, smart tourism yields business benefits, introducing a novel approach to managing tourist trends, delivering improved tourist services, implementing innovative promotion models, and accessing open databases (Gretzel et al., 2016). There is a note that smart tourism is a relatively recent and evolving concept, several identifiable challenges are faced in its development. Among the most crucial challenges is the reliance of tourists' experiences on technology. This essentially means that the quality of the experience is contingent on whether tourists use smart devices capable of running applications that facilitate the delivery of smart services. Additionally, a significant issue pertains to ensuring access to power sources for smart devices, ensuring that their batteries last long enough to connect

tourists to their destinations. Another concern is the experience of tourists who do not possess the appropriate smart devices or prefer to enjoy their travel without relying on such technology. The challenge often relates to the investments required to establish the necessary infrastructure for the development of smart tourism. The issue of investments is intertwined with the control of the data usage system, specifically addressing the protection and confidentiality of data concerning citizens and tourists.

2.2. Smart tourism destination

Buhalis (2000) defined a tourism destination as a chosen area by visitors that includes all essential facilities which are accommodation, restaurants, and entertainment. Buhalis (2000) also stated that successful tourism destinations can be categorized using the 6As framework: (1) Attractions, (2) Accessibility, (3) Amenities, (4) Available packages, (5) Activities, (6) Ancillary services. Maintaining each of these 6A is crucial for destinations to remain advantage competitive in the industry. However, in the era of consumer co-creation, traditional approaches seem become outdated. In order to ultimately enhance destination competitiveness, destinations must recognize the need to interconnect all stakeholders to facilitate a dynamic co-creation process. Neuhofer et al (2012) mentioned that in the context of intensifying competition among tourism destinations, the significance of utilizing information and communication technologies has become increasingly crucial. Recently, there has been a notable rise in the emphasis on inter-disciplinary integration, structural innovation, as well as partnerships and cooperation. This shift is particularly pronounced as tourism destinations confront heightened competition among themselves. Moreover, Jovicic (2019) stated that the digital era's most noteworthy aspect is its provision of accessible information to all stakeholders. Presently, successfully assessing the geographical characteristics of destinations is nearly inconceivable without leveraging digital technologies that facilitate collaboration among the public, private and consumer sectors.

Furthermore, there are two key factors that were included in the definition of smart tourism: smart technology and smart destination (Savic et al, 2018). According to Gretzel et al (2015), smart tourism was defined as a cutting-edge tourist destination, established with advanced technological infrastructure ensuring the sustainable growth of tourism regions, accessible to everyone, facilitating visitors' engagement with and assimilation into their environment, enhancing the overall experience at the destination, and contributing to an improved quality of life for residents. Enabling Smart Tourism in destinations involves dynamically connecting stakeholders through a technological platform where information regarding tourism activities can be instantly exchanged. This unified platform includes numerous entry points accessible via various end-user devices, enabling the development of real-time tourism experiences and improving the effectiveness of managing tourism resources at both micro and macro levels across the destination (Buhalis and Amaranggana, 2013). The ultimate aim is to employ existing

technological tools and methods to facilitate the collaborative creation of value, enjoyment, and experiences for tourists, as well as generating wealth, profit, and advantages for both stakeholders and the destination.

Upon conducting a comparative overview, depending on the conditions and temporal context of this research, the author respectfully seeks permission to investigate three specific contents as follows: smart device application system, and elements of destination. The development in smart devices is undoubtedly an important elements of technology which fulfil the needs of tourists, such as accessing information and staying connected with their families and friends while traveling (Dickinson et al., 2016). These devices, including smartphones and wearables, enhance the overall travel experience by providing real-time access to information, navigation assistance, and personalized recommendations. For tourists, smart devices enable seamless exploration, allowing them to effortlessly discover attractions, access digital guides, and capture memorable moments. Concurrently, for destination management, smart devices facilitate data collection, enabling the analysis of visitor trends and preferences, subsequently informing strategic decision-making processes. The integration of smart devices in the tourism ecosystem not only augments convenience for travellers but also contributes to the efficiency and adaptability of destinations in meeting the dynamic needs of the modern tourism landscape. The application system consists of smart applications and services that offer tourists a lot of facilities during the planning and implementation phases of travel and afterward. Searching information, booking hotels, purchasing tickets, and providing lists of attractions, restaurants, or unique experiences are allowed to users. These systems act as catalysts for enhanced engagement and interaction between tourists and the destination, facilitating efficient communication and fostering a dynamic, immersive experience. Moreover, for destination managers, application systems offer valuable insights into visitor preferences, enabling data-driven decision-making for resource optimization and improved service delivery. In order to implement these functions, internet service is extremely significant. Leveraging internet service enables tourists to explore tourism destinations through data collection and reporting services by using their smart devices (Buhalis & Amaranggana, 2015).

The elements of destination, which includes policy, regulation, and marketing, actively support the integration of technology in order to create sustainable smart tourism. Policy and regulation play a paramount role in the development of smart tourism, serving as the guiding framework that shapes the integration of technology within destinations. Well-crafted policies provide a structured approach to the implementation of smart initiatives, ensuring ethical, secure, and sustainable practices. Clear regulations help safeguard the privacy of tourists, establish standards for technology adoption, and foster a conducive environment for innovation. Moreover, smart tourism policies contribute to the harmonious collaboration between public and

private sectors, promoting a shared vision for technological integration. By addressing issues such as data protection, cybersecurity, and responsible technology use, robust policy frameworks not only enhance the resilience of smart tourism but also instil confidence among stakeholders. Effective marketing strategies play a crucial role in showcasing the benefits and possibilities that technological advancements bring to the tourism experience. They communicate the value of smart technologies, encouraging both tourists and stakeholders to embrace and invest in innovative solutions. Through targeted campaigns, destinations can amplify their tech-driven offerings, attract a diverse range of visitors, and position themselves as cutting-edge and dynamic travel destinations. Additionally, strategic marketing efforts contribute to building a positive perception of technology integration, assuaging concerns and fostering a sense of confidence among tourists and local communities. Ultimately, the synergy between technology and marketing is essential for driving the successful evolution of destinations into smart tourism hubs, ensuring that the transformative potential of technology is effectively communicated and embraced by all stakeholders.

3. DATA AND RESEARCH METHODS

To conduct research on the integrating technology conditions for the development of smart tourism at destinations in the Northwest region of Vietnam, the authors used a qualitative research method, involving 11 interview questions aimed at tourists, managers working in the tourism enterprises, and local government authorities in the tourism sector. The purpose was to clarify the necessary integrating technology conditions for the development of smart tourism in Northwest Vietnam, including the provinces of Yen Bai, Lao Cai, and Ha Giang. The questions were designed to identify the current state of conditions such as Smart devices, Application systems, and Destination Elements in evaluating the importance of digital technology in the context of rapidly advancing global and Vietnamese technology. The interview questions focused on responses from 50 people, including 30 tourists, 10 business managers, and 10 local government representatives from the areas of Lào Cai, Yên Bái, and Hà Giang. The interviews were conducted in environments suitable for qualitative interviews, and the results were fully and faithfully recorded. The information was meticulously documented for research purposes.

4. RESEARCH RESULTS

4.1. Descriptive statistics of the research sample

The questionnaires for tourists, business managers, and local government agencies were divided into two parts. The first part collected basic information from participants, while the second part gathered extended opinions about the three main elements: Smart devices, Application systems, and Destination Elements. Participants were encouraged to provide extended comments, evaluations, and innovative ideas about integrating

technology conditions to develop smart tourism in the Northwest region. The questionnaires were in Vietnamese, adhering to translation principles. The results of the first part of the interview are presented in table 1 - Demographic statistics.

Table 1: Demographic statistics sample

Category and Classification		Number of respondents	Percentage (%)
Gender	Male	25	50%
	Female	25	50%
Age	18- 25 years old	17	34%
	26- 35 years old	25	50%
	36- 45 years old	4	8%
	Over 46 years old	4	8%
Survey Area	Yen Bai	16	32%
	Lao Cai	18	36%
	Ha Giang	16	32%
Occupation	Tourists in Yen Bai	10	20%
	Tourists in Lao Cai	10	20%
	Tourists in Ha Giang	10	20%
	Tourism Organizations in Yen Bai	3	6%
	Tourism Organizations in Lao Cai	4	8%
	Tourism Organizations in Ha Giang	3	6%
	Local Government Authorities in Yen Bai	3	6%
	Local Government Authorities in Lao Cai	4	8%
	Local Government Authorities in Ha Giang	3	6%

Source: Authors own source

The interview results from representatives of the three Northwest provinces showed a gender balance with an equal ratio of 50% male and 50% female, ensuring diversity and harmony in perspectives on the application of digital technology in smart tourism development. Age distribution leaned towards younger people, with the largest group being those aged 26-35 years (50%), due to the nature of their work and the trend of youth in the tourism sector. This was followed by the 18-25 age group (34%), primarily tourists. The 36-45 and over 46 age groups were less represented, each accounting for 8%. Geographically, the interviews were evenly conducted across the famous tourist areas of Yen Bai, Lao Cai, and Ha Giang, with participation rates ranging from 32% to 36%, providing a comprehensive and authentic view of each area. Professionally, the interviews mainly gathered views from 60% tourists, supplemented by perspectives from local tourism businesses and local government agencies (40%). This demographic distribution indicates a focus on the perspectives of younger people in the tourism field, with comprehensive geographical distribution and a balanced combination of viewpoints from different stakeholders in the tourism industry.

4.2. Statistical analysis of interview results

Based on the interview results, the factors influencing and integrating "Smart devices" for the development of smart tourism in the Northwest region of Vietnam were compiled into the following specific themes: information access and navigation; experience enhancement through multimedia; social sharing and community building; convenience and service accessibility; virtual reality for remote exploration; environmental consideration; market and service development; economic development and investment; cultural impact and identity; sustainability; infrastructure development. The first six themes identified in tourist responses reflect a comprehensive and multifaceted view of technology's role in enhancing the tourism experience. Information access and navigation highlight how technology provides tourists with real-time information and easy navigation, enhancing their autonomy in exploring destinations. Experience enhancement through multimedia shows the importance of digital content in enriching the tourism experience, with high-quality images, videos, and interactive platforms offering more attractive and engaging ways to explore and appreciate attractions. Social sharing and community building emphasize the importance of social media and online platforms in facilitating experience sharing, fostering a sense of community among tourists, and contributing to destination promotion. Convenience and service accessibility demonstrate technology's impact in streamlining tourism logistics, from online booking to digital payments, simplifying the overall tourism process. Virtual reality for remote exploration highlights the creative use of VR technology in providing virtual tours, allowing potential and unable tourists to explore destinations remotely. Finally, environmental concern reflects the growing awareness of tourists and service providers about the importance of sustainable tourism activities, where technology is leveraged to promote and support environmentally friendly tourism practices. Overall, these themes illustrate a technologically enhanced tourism landscape, where convenience, connectivity, community, and sustainability are focal points. Responses from tourism organization managers and local government authorities on integrating smart devices in developing smart tourism in the Northwest region emphasize a multifaceted approach through the last five themes. Market and service development show a high focus on leveraging smart devices to innovate and enhance tourism services, adapting them to meet evolving market needs and improving the overall tourism experience. This theme underscores the importance of maintaining adaptability and competitiveness in a technologically advancing tourism landscape. Economic development and investment reflect the perception of smart tourism as a significant economic catalyst, where integrating smart devices is expected to attract investment, boost economic activities, and create new employment opportunities. Cultural impact and identity emerge as a key theme, emphasizing the need to balance technology use with preserving the rich cultural heritage of the region, ensuring that the

uniqueness of local traditions is maintained and promoted even as technology reshapes the tourism experience. Sustainability points towards an environmentally conscious approach, where smart devices are seen as tools to promote environmentally friendly tourism activities, support resource management, and minimize the ecological footprint of tourism. Additionally, infrastructure development emphasizes the necessity of building strong physical and digital infrastructure to support the widespread adoption of smart devices in tourism, ensuring that technological advancements are effectively leveraged to enhance accessibility and service quality. Overall, these themes paint a comprehensive picture of how smart devices are viewed as key in driving sustainable, culturally sensitive, and economically vibrant smart tourism in the Northwest region of Vietnam.

Regarding the "Application System" element in the development of smart tourism in Vietnam's Northwest region, the research team has identified several key themes: digital inequality and accessibility; the interplay between technological evolution and traditional practices; community empowerment and education; balancing economic growth with sustainable practices; privacy and trust in the digital era; and the importance of collaboration for comprehensive development. In this region, the progress of smart tourism is greatly influenced by the status of internet connectivity, presenting both challenges and opportunities. Tourist feedback suggests that the region is grappling with uneven internet connectivity, particularly in remote, mountainous areas, due to geographical and infrastructural constraints. This uneven connectivity poses challenges for tourists in accessing online information and services and limits the digital market access for local businesses. However, enhancing internet connectivity opens substantial opportunities for improving the tourism experience and expanding the online presence of businesses, which in turn can drive economic growth and create jobs. Ensuring cybersecurity and data privacy is also essential in this context. The role of technology in transforming tourism in this area is irrefutable. Innovative applications such as "*Du Lịch Lào Cai*" (Lao Cai Tourism) and "Hướng dẫn du lịch Tây Bắc" (Northwest Tourism Guide) provide comprehensive details about tourist destinations, and experiences like the "Fansipan 360 VR" app offer unique virtual tours. This technology enhances smoother interactive communication, streamlines the online booking and payment processes, and offers up-to-date information, enriching the tourist experience. However, feedback from managers in the tourism industry and state regulatory agencies reveals a mixed reaction within the local community to these technological changes. Some recognize the advantages of technology in enhancing tourism and economic development, while others lack understanding or awareness of these benefits, primarily due to educational and financial constraints. Nonetheless, a trend towards increasing use and acceptance of technology is observed, especially in the domain of tourism promotion. This underscores the need for education and awareness programs to bridge this knowledge gap. Regarding data privacy in smart applications, efforts are being made to bolster data security, ensuring

transparency and control for users, and establishing clear privacy policies with options for consent. Educating users and conducting regular security audits are crucial to maintain the integrity of these applications, in conjunction with collaboration with data regulatory authorities. Nevertheless, there is still a gap in understanding and implementation of these measures, and managers point to the necessity for more proactive and structured strategies. In summary, the Northwest region is presented with a significant opportunity to advance its smart tourism. Through strategic improvements in internet services and the application of technology, the region can significantly enhance the tourism experience while addressing crucial data privacy issues. To achieve this, a comprehensive strategy is needed, including investments in internet infrastructure, the development and integration of user-friendly, multilingual technological applications, educational and training programs for local communities and businesses, as well as robust data security measures. Collaboration among stakeholders is key, along with facilitative policies and incentives. Ultimately, ensuring sustainable and holistic development, balancing technological advancement with the preservation of culture and environment, is crucial for the region to become a leading smart tourism destination.

Concerning the "Destination Elements" factor, the authors identified the following key themes after gathering responses: the lack of clarity and awareness regarding tourism policies; the necessity for collaborative efforts; simplifying regulatory processes; integrating technology into marketing; making use of digital platforms; and using interactive marketing tools. In Vietnam's Northwest region, the advancement of smart tourism faces challenges in effectively disseminating and understanding government tourism policies. There appears to be a knowledge gap or a lack of awareness among involved parties about current policies or guidelines related to smart tourism. This situation necessitates a collaborative approach involving government agencies and stakeholders in the tourism sector to devise a clear and structured plan for the development of smart tourism in this area. The integration of cutting-edge technologies such as Virtual Reality (VR), Augmented Reality (AR), AI-enhanced mobile applications, and digital marketing tools is central to the region's strategy for attracting tourists. This strategy focuses on providing interactive and engaging experiences. However, it is crucial to balance these technological advancements with the preservation of the region's cultural and natural heritage, to ensure the sustainable development of tourism. These themes have been primarily brought up by managers, while most tourists have not yet shown significant interest in the policies for developing smart tourism in the Northwest region of Vietnam.

5. SOLUTIONS AND RECOMMENDATIONS

On the basis of the research results above, the authors propose solutions revolving around three elements: Smart Devices, Application Systems, and Elements of Destination,

to robustly develop smart tourism in three key areas of Northwest Vietnam: Yen Bai, Lao Cai, and Ha Giang.

Building a strong digital infrastructure, the foundation of smart tourism is a robust digital infrastructure. This involves expanding high-speed internet access, especially in remote and culturally significant areas that attract numerous tourists for exploration. Collaboration between government agencies and private entities can facilitate this expansion. Installing fiber optic cables and setting up free Wi-Fi access points at key tourist destinations will significantly improve connectivity. Working with telecommunications companies, the area can enhance its 4G/5G coverage, ensuring seamless and widespread internet access. These improvements benefit not only tourists but also support local communities and businesses in leveraging digital platforms for economic activities.

Integrating AR and VR at tourist attractions, implementing these two technologies can revolutionize tourists' experiences, offering deep, interactive insights into the region's culture, history, and natural beauty. Developing AR and VR experiences for major tourist spots allows visitors to explore these locations uniquely and attractively. These experiences could include virtual tours to inaccessible areas, historical recreations, and educational content about the region's heritage, making the visit much more appealing to tourists.

Educating local residents and tourists, educating both locals and tourists on using digital tools is crucial for the success of smart tourism. Organizing workshops and training programs for businesses and local communities can help them effectively use digital tools for tourism, including social media marketing, digital payments, and online customer service, among others. For tourists, information campaigns about available digital tools like mobile apps, online booking platforms, and digital maps are essential. These campaigns could include guides on effectively using these tools to enhance their travel experience.

Specific plan for digital marketing, a comprehensive digital marketing strategy is vital to attract tourists to the Northwest region. This includes online advertising goals using social media channels like Facebook, Instagram, Tiktok, and Thread; search engine tools, designed to reach potential tourists through personalized ads based on their preferences and previous travel history. Marketing content should focus on developing appealing materials that highlight the region's attractions, culture, and unique experiences, which can be distributed across various channels like blogs, videos, and social media posts. Collaborating with Key Opinion Leaders (KOLs) and Key Opinion Consumers (KOCs) in the travel sector can further enhance this strategy, leveraging their follower base to introduce the attractions of the Northwest region.

Publicizing policies and regulations, the announcement and wide implementation of policies and regulations are necessary. Creating clear, comprehensive documents and distributing them across various channels, including official announcements, direct communication, and social media, is essential. Local networks and community leaders play a significant role in broader dissemination. Digital support mechanisms like help desks, QR code hotlines, and online feedback channels ensure continuous participation and address stakeholders' concerns.

6. CONCLUSION

In conclusion, the integrating technology conditions for development of smart tourism in Vietnam's Northwest region, encompassing Yen Bai, Lao Cai, and Ha Giang provinces, necessitates a holistic and multi-pronged approach. The foundation for this development is the creation of a strong digital infrastructure, crucial for enhancing connectivity in remote and tourist-centric areas. This includes expanding high-speed internet access and enhancing mobile network coverage, a task that calls for effective collaboration between government and private entities. The integration of cutting-edge technologies like AR and VR at key tourist attractions is instrumental in revolutionizing the tourism experience, offering immersive, interactive explorations of the region's rich cultural and historical tapestry. Equally important is the education of local communities and tourists on the effective use of digital tools. This initiative not only empowers locals to harness digital opportunities for economic growth but also enriches the tourist experience through enhanced access to information and services. Complementing these efforts, a well-crafted digital marketing strategy is vital. By leveraging social media, search engine marketing, and collaborations with influencers, the region can effectively showcase its unique offerings and attract a wider tourist base. Furthermore, the implementation of smart tourism in the Northwest region must be underpinned by clear and well-publicized policies and regulations. This involves not only the creation of comprehensive policy documents but also their effective dissemination through multiple channels to ensure stakeholder awareness and compliance. Involving local networks and community leaders in these efforts is crucial for achieving broader reach and deeper impact. In summary, the strategic integration of digital infrastructure, innovative technologies, educational initiatives, and targeted marketing, coupled with clear policy frameworks, forms the cornerstone of developing smart tourism in Northwest Vietnam. This approach promises not only to enhance the tourist experience but also to spur economic development, preserve cultural heritage, and foster sustainable tourism practices in the region. As such, it represents a forward-looking blueprint for other regions aiming to harness the benefits of technology in the tourism sector.

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HERITAGE TOURIST'S EXPERIENCE WITH AUDIO GUIDE: THE CASE OF HUE CITY

Nguyễn Hoàng Tuệ Quang[1], Bùi Thị Tám[2], Lê Hà Minh Nhật[2]

Abtract: *Heritage tourism is a vital economic driver for various tourist destinations. To attract more tourists, heritage site managers here are keen on integrating technological applications that can improve the tourist experience, such as audio guides. However, empirical research on heritage tourists' experience with audio guide applications is scarce. Using the city of Hue as a case study, 18 in-depth semi-structured interviews with domestic and international tourists were conducted to explore their experiences with the audio guide system at the Complex of Hue Monuments, one of Vietnam's most famous world heritage. The thematic analysis was performed with interview data to identify the nature of tourist's experiences. Findings reveal that tourists have positive experiences using audio guides in the heritage site context, which makes them feel more satisfied with the trip. The study also discovered issues that hinder tourists from experiencing the audio guide system during their visit. Therefore, some suggestions for the heritage sites to be more improved with the audio guide technology have been developed.*

Keywords: *Tourist's experience; heritage site; audio guide; Hue City*

Tóm tắt: *Du lịch di sản là một nhân tố quan trọng để phát triển kinh tế tại nhiều điểm đến trên thế giới. Để thu hút nhiều khách du lịch hơn, các nhà quản lý di sản đã rất quan tâm đến việc tích hợp các ứng dụng công nghệ nhằm nâng cao trải nghiệm du lịch, một trong số đó là công nghệ thuyết minh tự động. Tuy nhiên, có rất ít nghiên cứu về chủ đề trải nghiệm của khách du lịch di sản với công nghệ thuyết minh tự động. Lựa chọn thực nghiệm tại điểm đến Huế, 18 cuộc phỏng vấn sâu bán cấu trúc với khách du lịch trong nước và quốc tế đã được thực hiện để khám phá trải nghiệm của họ với hệ thống thuyết minh tự động tại Đại Nội Huế, một trong những di sản thế giới nổi tiếng nhất của Việt Nam. Kỹ thuật phân tích theo chủ đề được thực hiện với dữ liệu phỏng vấn để xác định các thành phần cốt lõi trong trải nghiệm với công nghệ của khách du lịch. Kết quả phân tích cho thấy khách du lịch di sản có những trải nghiệm tích cực khi sử dụng thuyết minh tự động, và điều này khiến họ cảm thấy hài lòng hơn với chuyến đi. Nghiên cứu này cũng phát hiện ra những vấn đề ảnh hưởng đến trải nghiệm của khách du lịch với công nghệ thuyết minh tự động. Do đó, một số gợi ý để các cải thiện chất lượng của dịch vụ thuyết minh tự động được giới thiệu.*

Từ khóa: *Trải nghiệm của du khách; di sản; thuyết minh tự động; Thành phố Huế.*

1. INTRODUCTION

Technology plays an essential role in developing the tourism and hospitality industries (Lee, 2017). In the past decades, tourism destinations have used new technologies in various aspects, from tourist management to enhancing their positive experiences (Neuhofer & Buhalis, 2014). An example of such technology is an audio guide, which is utilized in numerous

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tourist spots across the globe. The conventional approach to interpretation activities primarily emphasizes educational and conservation objectives. However, by implementing the audio guide system, tourists can enhance their experience by gaining additional entertainment and experiencing value during their exploration (Reino *et al.*, 2007). According to Kang and Gretzel (2012), this technology is effective in increasing tourists' awareness, knowledge acquisition, and trip satisfaction. Thus, with the audio guide system, the transmission of heritage values has significantly changed from the old, unattractive forms of mere exhibition.

Contrary to technologies like augmented reality or virtual reality, an audio guide (AG) enables users to explore their surroundings without diverting their visual focus from the actual environment (Kwok *et al.*, 2019). Hence, while all the applications above serve as instruments for facilitating the exploration of destinations, the significance of tourists' experiences with AG technology will vary significantly. Previous research had primarily concentrated on elucidating the conditions and advantages while neglecting to address tourists' experiences using AG technology (Liao & Bartie, 2022). Particularly within heritage tourism, this is a research gap that many previous studies still need to address. Meanwhile, many destinations worldwide, including Vietnam, are prioritizing the promotion of heritage tourism items to better cater to the demands of this particular tourism industry. Therefore, this study aims to elucidate the experience of tourists with the AG system at heritage sites and its influence on their journeys.

2. LITERATURE REVIEW

2.1. Overview of AG technology

According to Barnett (2023), the AG is the activity of guiding visitors at a location based on sound. Depending on the product designer's perspective, the content of AG may include only recorded words or music and other effects. In Vietnam, the AG application is defined as delivering content through personal mobile devices, supporting or replacing the direct introduction by interpreters to exhibition visitors (Department of Cultural Heritage, 2018). Compared to other explanation technologies, such as projection screens, the AG technology brings advantages when helping visitors listen to the recorded speech and directly observe the artifacts (Kwok *et al.*, 2019).

Today, it is easy to find the AG applications in museums and other history-related tourist attractions (Barnett, 2023). Many devices can provide audio content, including music players and even special audio devices used only for trips. With the AG application, visitors can actively visit and learn about monuments without needing a tour guide (Micha & Economou, 2005). In addition, visitors can also rent handheld AG devices (Micha & Economou, 2005). These mobile personal devices come in many designs, styles, and functions, collectively known as DPAs (Digital Personal Assistants) (Micha & Economou, 2005). Lately, with technological advances, this technology has also appeared in the form of designed applications for smartphone systems such as Android and iOS.

2.2. AG application in the Vietnam tourism industry

The AG was first applied in Vietnam in 2012 at the Vietnam Literature Museum in two languages, namely Vietnamese and English. After that, in 2016, the National Museum of History began applying the AG system to introduce the permanent display system to serve visitors. The historical, cultural, and artistic content of displayed artifacts is recorded and installed into an AG system to give visitors a better understanding.

With the success of applying AG in the museum field, other attractions are also gradually proactively accessing this tool. In Ho Chi Minh City, since 2018, the Ton Duc Thang Museum has applied AG technology in the Childhood of President Ton Duc Thang room as a tool to tell stories to visitors. This application creates convenience for domestic and international tourists while visiting the museum. The local government at Hoi An also chose the AG application to bring new experiences to tourists when visiting the ancient town. The AG system is deployed at four attractions, including the Chua Cau Relic, the Museum of Trade Ceramics, the Sa Huynh Cultural Museum, and the Hoi An Museum. International students have many advantages in learning and researching the history and culture of the land and people of Hoi An.

In Thua Thien Hue province, since 2019, the AG service has been deployed at five attractions: Hue Citadel, the Tomb of King Tu Duc, King Minh Mang, Kinh Khai Dinh, and Thien Mu Pagoda. As for the Citadel, due to its immensity and the fact that it encompasses several sophisticated architectural works, leaning on the aim and duration of visiting, there will be three AG packages specifically for each group of tourists.

3. RESEARCH METHODS

This research was undertaken in Hue City, a famous historical and cultural heritage destination in the Central region of Vietnam, to investigate the nature of the experience of AG technology and its impact on heritage tourists' trips. Since 2019, the AG service has been implemented at five heritage attractions in Hue City. This service functions concurrently and does not generate conflicts with the traditional interpreting products by tour guides and staff at the heritage site.

The semi-structured in-depth interview method was chosen to collect relevant research information. Data collection occurs in two distinct sessions, each spanning a duration of seven days, coinciding with the Lunar New Year and the timeframe around April 30 and May 1, 2023. These periods are recognized as important national holidays, with various tourist promotions. Consequently, individuals are inclined to travel and explore cultural and heritage attractions to a greater extent than other times of the year. The selection of Hue Citadel as a research site was based on its pioneering position in implementing AG technologies for tourists among other heritage sites in this city.

The non-probability sampling method was used with all tourists who experienced the AG while exploring the site. This population included domestic or international tourists, as the AG system includes many other international languages. The group of

authors randomly approached visitors. After explaining the project's purpose, onsite interviews would be conducted with tourists who willingly engage to ensure their attentiveness. The list of questions includes three main parts: tourists' perceptions of experiences with AG technology, the impact of these experiences on the trip, and limitations in using the AG technology. After two rounds of data collection, 18 participants took part in the interviews. The data obtained from these interviews was transcribed for a comprehensive thematic analysis.

4. RESEARCH FINDINGS

4.1. Respondent characteristics

This study included 18 participants for the semi-structured, in-depth interviews. The table below presents the research sample characteristics.

Research sample characteristics

Name	Nationality	Gender	Age	Occupation	Education	Income	Past exp w. AG
VN1	Vietnamese	female	25	office worker	college	average	No
VN2	Vietnamese	male	42	doctor	post graduate	high	Yes
VN3	Vietnamese	female	38	lecturer	post graduate	high	Yes
VN4	Vietnamese	male	32	civil servant	college	average	No
VN5	Vietnamese	male	21	student	college	low	No
VN6	Vietnamese	female	28	business	college	average	No
VN7	Vietnamese	female	42	civil servant	college	average	No
VN8	Vietnamese	female	31	business	college	high	No
VN9	Vietnamese	male	47	business	high school	high	No
VN10	Vietnamese	female	23	office worker	college	average	Yes
VN11	Vietnamese	female	29	office worker	college	average	No
VN12	Vietnamese	male	18	student	college	low	No
VN13	Vietnamese	female	38	civil servant	college	average	No
VN14	Vietnamese	female	26	business	college	average	No
QT1	French	male	32	office worker	college	average	Yes
QT2	French	female	40	nurse	college	high	Yes
QT3	Australian	male	44	architecture	college	high	Yes
QT4	British	female	38	business	college	high	Yes

(Low income: under 5 million dong/under $2000; Average income: from 5 million to 10 million dong/ from $2000 to $5000; High income: over 10 million dong/ over $5000)

The table reveals that most interviewees are females (61.1%), aged between 20 to 40. Interviewees are well educated and working in various business areas, but most have an average to high monthly income. While all international tourists have experienced

AG technology, only one-fourth of domestic interview participants reported having used this technology on previous trips. These results indicate that heritage tourists interested in using the AG are often young tourists and have a reasonable travelling budget to cover additional services during the trip.

4.2. Dimensions in experience with AG

After being converted into text, interview data will be investigated. The thematic analysis method is used to clarify major themes in the information provided by respondents. Here, three dimensions of visitors' experience with AG technology in the Hue Citadel are identified.

4.2.1. Education

Surprisingly, when sharing stories about their experiences with the AG system, almost all respondents emphasized that they had gained a substantial amount of new knowledge related to the Citadel of Hue. This shows that knowledge values are the experiential aspect visitors can perceive strongly while using AG technology. As an illustration, QT4 emphasized, *"I felt I knew more about this heritage, rather than just visiting it and leaving. The AG gave you more depth knowledge about what you are seeing"*. Interviewees frequently mentioned keywords such as royalty, the last feudal dynasty, and historical values when asked to briefly describe the perceived knowledge. Many visitors had expressed that the information related to heritage gave them much meaning about the destination. Respondent VN3 said, *"I learned more about the cultural story and meaning of it [the Citadel], making me understand why Hue people are always proud of this world heritage"*.

Furthermore, some participants mentioned that they were surprised to learn that the heritage contains several locations, each of them having its own unique appeal. This opinion was mentioned by respondent VN5 when listening to the AG made he feel *"wanting to explore areas introduced in the speech"*.

4.2.2. Felling of fun

A significant number of participants expressed experiencing favourable emotions when utilizing technology to explore the Citadel heritage sites. Entertaining, amusing, and interesting are the primary descriptors that tourists use to describe the pleasure they have when using AG technology at the Hue Citadel.

The study sample encompassed respondents with and without prior experience with AG technology; nonetheless, no disparities in favourable emotions between these two groups were identified during the interview process. Expressly, respondents QT1, VN2, and VN3 affirmed that *"using the audio guide is amusing"* despite having prior experience with this service at other cultural and heritage tourism attractions. Interviewees who have never used AG technology tend to express a heightened excitement when they first encounter it during

their journey. Respondent VN7 happily stated, *"this [AG system] is very new to me, so you can listen to the voice rather than read the information in the visited room"*. Similarly, respondent VN5 said that even though he had already seen introductory videos about AG on social networking platforms, experiencing it for the first time was still very interesting. This respondent also expressed his wish that other heritage sites of Hue city should be equipped with more technologies to support visitors. This findings reveal that using AG technology brings positive emotions, especially for cultural and heritage tourists, when their joy is often associated with focusing on exploring the historical attractions of the destination visited (Nguyen & Cheung, 2014; Silberberg, 1995).

4.2.3. Ease of use

Information obtained from interviews indicates a high correlation between the attributes of the AG service system and users' overall experience. The ease of interaction with the application during the go was highlighted multiple times by respondents. The AG technology can exist in many forms, from traditional handheld devices to digital information through scanning QR codes. AG technology encompasses a wide range of manifestations, including conventional portable devices and the digitization of information facilitated by scanning QR codes. At the Hue destination, the implementation of advanced technology ensures that customers can easily control this service without facing any significant obstacles. For example, respondent VN5 confirmed, *"It is so easy [to use] because you just need a smartphone to scan the QR Code. I just need to activate my camera, scan those QR codes, and listen to the information through my smartphone or headphones"*. Similarly, young respondents like VN1, VN10 and VN12 had the same viewpoint. This phenomenon suggests that younger responders, who are well-versed in technology, have no difficulty and instead embrace the proactive advancement of digitization in heritage and cultural tourism.

Given the widespread adoption of QR technology in various aspects of daily life, even older individuals who are typically perceived as less comfortable with digital technologies can effectively engage with the AG application. Respondent VN9, despite their lack of proficiency in technology, attests to their ability to utilize this tool effectively at the heritage site. Respondents also acknowledged the value of AG technology in enabling simultaneous mobility and auditory perception. Furthermore, QT2 emphasizes the significance of a *"prompt application response"* for accessing information immediately. Some respondents also made comparisons between their currently experiences with AG and their past AG experiences. These findings demonstrate the need to promote digitization in heritage tourism in Vietnam, as tourists increasingly demand for new technologies.

4.3 Impact of experience with AG to trip satisfaction

All respondents indicated they had positive experiences with AG technology at the Hue Citadel heritage site. Interviewee VN3, when asked, said that she *"really enjoyed*

using the audio guide when visiting the Citadel. Using this application makes this trip different from the trip of last year's vacation". Participants viewed the AG experience as novel and necessary because *"visiting heritage sites often have a boring feeling than entertainment areas focus on serving tourists"* (Respondent VN11). A significant number of participants expressed that the AG application is advantageous for cultural and heritage sites.

Nevertheless, a few participants highlighted the need for enhancements in some parts of the AG application to ensure improved service quality for upcoming tourists. Participant VN5 specifically emphasized the constraint of the information provided. He said, *"pretty basic information, but I think I need more than that"*. The reason for this opinion is that this information has been widely disseminated in travel videos. Respondent QT2 also shared a similar opinion, thinking "a longer speech would be better for us foreigners". Respondent QT4 also emphasized that the quality of AG services needs to be improved, as at present, this service was still at the level of *"it is okay, but not so impressive"*. This tourist said she appreciated the AG service because the cost of use is acceptable, and she paid for the audio guides to support the place.

5. DISCUSSION

The results align with prior relevant research. The study analyzes the visitor experience based on three dimensions: educational value, entertainment value, and ease of use of AG technology for tourists. The experiential aspects correspond with Lee and Jan's (2022) perspective on smart tourist experiences. There are two main factors that affect how tourists interact with technological components: internal (visitors' demand for knowledge) and external (technology's user-friendliness). Lee and Jan (2022) suggest that tourists could use smart technology applications to interact with services while visiting the destination. This interactive activity enhances learning and encourages thoughtful reflection. As a result, heritage tourists who appreciate historical resources using the AG can enhance their perception of the visited heritage. To explain the above phenomenon, according to Sun and Yu (2019), audio guide-visual, audio guide-verbal, wearable guide-visual, and wearable guide-verbal boost user cognitive load and enhance learning achievement by facilitating tasks including recalling, comprehending, and analyzing information.

In addition, Gursoy *et al.* (2022) assert that heritage tourism resources are inherently linked to the past and possess unchanging attributes. Thus, tourists often perceive heritage tourism as unamused. This study discovered that utilizing technology induces pleasure and gives individuals a sense of enjoyment. AG technology could elicit novel emotions, especially for first-time users. The study by Shin *et al.* (2022), which found that emotions are a crucial component of the experience with technology in the context of the service and tourism industries, lends support to this conclusion. It is important to note that the convenience of AG technology to guarantee visitors positive experiences. Tourists would

gain additional information and improve their travel experience, thereby making it more memorable.

Finally, the research results are consistent with Liao and Bartie's (2022) findings, demonstrating that AG technology has a significant effect on visitors during their journeys. Pai *et al.* (2020) previously noted that tourists' interactions with technology could enhance their satisfaction with their journeys. However, with limited research related to AG technology, this study brings a new empirical case when placed in the context of heritage tourism. Based on the findings, this study supports Shin *et al.*'s (2021) statement that destination managers should prioritize the usability of novel technology applications to enhance tourist satisfaction. AG technology is well-established in tourist destinations worldwide, but it is a recent development in Vietnam that has acquired popularity. The study's findings are expected to significantly improve the application's development as the tourism sector in Hue city is currently in a developmental phase.

6. CONCLUSION

As far as the authors are aware, only a limited number of research studies have investigated tourists' experiences with AG technology. Therefore, the present study aims to contribute to the gap in the AG experience literature in the context of heritage tourism. Through the case of the heritage destination Hue, the analysis of the in-depth interviews has revealed three dimensions in tourists' experiences with AG applications. The visitor experience is comprised of three core values: education, feeling of fun, and ease of use. It is crucial to identify the domains of AG experience, as this field of research is relatively new and has yet to be extensively studied by prior scholars. This study also demonstrates the crucial significance of digitization in the heritage tourism sector since the use of AG technology at Hue Citadel has enhanced tourist satisfaction with their trip. The majority of tourists see the novelty and distinctiveness of their current journey. These findings have significant implications for heritage managers and tourist enterprises in developing cultural and smart heritage tourism products in the future.

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SUSTAINABLE TOURISM CONSUMPTION: EXPLORING DETERMINANTS OF GREEN HOTEL SELECTION

Hồ Thị Bạch Mai[1]

Abstract: *This paper presents a research model applying established behavioral decision theories - the Theory of Planned Behavior (TPB) - to understand consumers' intentions to stay at green hotels and their subsequent green hotel consumption behavior. Factors hypothesized to shape intentions include attitude toward green hotels, subjective norms regarding perceived social pressures to choose them. Additionally, green hotel accessibility and customers' perceived green impact are proposed as factors directly enabling or restricting the translation of intentions into actual patronage of green hotels while traveling. This framework suggests consumers weigh their personal attitudes, normative influences, sustainability impact beliefs, and accessible green lodging options when forming green hotel adoption intentions and displaying follow-through behaviors. The model offers original theoretical integration to predict and promote consumers' pro-environmental actions in the hospitality industry. Analysis of relationships between its psychological, social, contextual factors and hotel decision outcomes can inform strategies to grow environmentally conscious market segments.*

Keywords*: Green hotels, consumer behavior, sustainability impact, hospitality industry.*

Tóm tắt: *Áp dụng thuyết hành vi hoạch định (TPB), bài viết này xây dựng 1 mô hình nghiên cứu nhằm tìm hiểu ý định lựa chọn lưu trú tại các khách sạn xanh của khách du lịch và hành vi lưu trú tại khách sạn xanh của họ sau đó. Các yếu tố được giả định tác động đến ý định bao gồm quan điểm về khách sạn xanh, cảm nhận chủ quan về ảnh hưởng từ xã hội. Ngoài ra, khả năng tiếp cận của khách sạn xanh và cảm nhận về ảnh hưởng tích cực của việc lưu trú tại khách sạn xanh được đề xuất là các yếu tố trực tiếp ảnh hưởng đến quá trình chuyển đổi từ ý định thành hành vi thực tế. Phân tích mối quan hệ giữa các yếu tố tâm lý, xã hội, bối cảnh và kết quả quyết định chọn khách sạn có thể đưa ra những thông tin hữu ích cho chiến lược phát triển phân khúc thị trường "vì môi trường".*

Từ khoá: *Khách sạn xanh, hành vi của người tiêu dùng, ảnh hưởng bền vững, kinh doanh khách sạn.*

1. INTRODUCTION

Vietnam's hospitality sector, with over 18 million international visitors in 2019, can impact the environment due to the high use of resources and waste produced by hotels (Vietnam Tourism Advisory Board, 2020; Jones et al., 2016). Implementing green practices can reduce these effects. And, yet, following this trend, the demand for sustainable accommodation is increasing (Bruns-Smith et al., 2015).

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It's important to know what influences tourists to stay at green hotels to help this market grow. Vietnam's fast economic growth and urbanization have led to environmental problems, which makes sustainable tourism very necessary (Nguyen et al., 2019). Moreover, Vietnam's varied wildlife and the government's focus on sustainable tourism for economic growth make this a top priority (Nguyen et al., 2019; Choe & Phi, 2022).

Even though sustainable tourism is a focus, there's not much research on what influences the choice of green hotels in Vietnam (Trang et al., 2019). This study will fill that gap by using the Theory of Planned Behavior (TPB) to look at what determines green hotel choice among Vietnamese tourists (Ajzen, 1991; Han et al., 2010).

The TPB, which connects attitudes, norms, and perceived control to intentions, has been used in various contexts for green hotel choice. This study broadens the TPB by including how perceived green impact affects the relationship between intention and behavior, giving insights into what drives the conversion of green hotel intentions into actual behaviors (Ellen et al., 1991; Berger & Kanetkar, 1995; Han et al., 2010).

This study also takes into account how easy it is to access green hotels and how it shapes tourists' intentions and behaviors (Stern, 2000; Han et al., 2010). The proposed framework combines important factors from the TPB with perceived green impact and green hotel accessibility. This study will use survey data from tourists in Vietnam to test the proposed relationships.

2. LITERATURE REVIEW

The pursuit of environmental sustainability has become a pressing concern for the tourism and hospitality industry, given its significant impact on natural resources and ecosystems (Jones et al., 2016). As consumer demand for eco-friendly accommodations grows, hotels are increasingly challenged to adopt green practices and offer environmentally certified options (Bruns-Smith et al., 2015). Understanding factors that shape tourists' intentions and behaviors toward selecting green hotels is crucial for promoting sustainable tourism consumption (Han et al., 2010).

The Theory of Planned Behavior (TPB)

The theory of planned behavior (TPB) has been widely applied as a framework for understanding various pro-environmental behaviors, including the choice of green hotels (Han et al., 2010; Goncalves et al., 2016). According to the TPB, intentions are the immediate antecedents of behavior, while attitudes, subjective norms, and perceived behavioral control shape these intentions (Ajzen, 1991).

Green hotel

"Green consumption" aims to decrease environmental impact of purchases and consumption, often synonymous with "socially responsible" and "ecologically conscious" consumption (Peattie, 2010; Kim et al., 2012). This concept is central to the "green hotel"

movement in the hospitality industry, where accommodations minimize environmental impact through practices such as resource conservation and waste reduction (Jones, Hillier, & Comfort, 2016). These eco-friendly hotels cater to a niche market of environmentally conscious travelers, providing a competitive edge (Chen & Tung, 2014). In Vietnam, Lotus and ASEAN Green Hotel Certifications offer frameworks for hotels to gain recognition for sustainable practices, assessing aspects like energy efficiency and resource usage (VGBC, 2009; ASEAN, 2008).

The Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) has been widely applied in understanding consumer behavior in various contexts (Ajzen, 1991), including environmentally friendly practices such as green hotel selection (Chen & Tung, 2014). TPB posits that an individual's intention to perform a behavior, in this case, choosing a green hotel, is determined by their attitude toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991). Previous studies have found robust support for TPB in predicting green consumer behavior (Han et al, 2010). It provides a comprehensive framework for examining the psychological factors influencing consumers' green hotel selection and therefore, is an appropriate theoretical basis for green hotel intention and behavior research.

Attitudes Toward Green Hotels and Green Hotel Intentions

Attitudes refer to an individual's overall evaluation of a particular behavior, shaped by beliefs about the consequences of performing that behavior (Ajzen, 1991). In the context of green hotels, favorable attitudes are likely to arise from beliefs that staying at such establishments benefits the environment while still meeting personal hospitality needs (Han et al., 2010). Several studies have demonstrated the positive influence of attitudes on intentions to patronize green hotels across various contexts, including China (Han et al., 2009), Portugal (Goncalves et al., 2016), and Taiwan (Chen & Tung, 2014).

Subjective Norms and Green Hotel Intentions

Subjective norms refer to the perceived social pressure to perform or not perform a particular behavior (Ajzen, 1991). In the context of green hotel selection, subjective norms may involve perceiving sustainable practices as increasingly widespread and socially expected in the tourism industry, a phenomenon known as descriptive norms (Han et al., 2010). When individuals perceive that others in their social circles or society at large are engaging in eco-friendly behaviors, they may feel motivated to conform to these norms. Previous research has demonstrated the influence of subjective norms on intentions to patronize green hotels across various contexts, including China (Han et al., 2009), Portugal (Goncalves et al., 2016) and Taiwan (Chen & Tung, 2014).

Intention-Behavior Relationship and Contextual Factors

The Theory of Planned Behavior (TPB) posits that behaviors are predicted by intentions and has been widely applied to eco-friendly actions like choosing green hotels (Ajzen, 1991). It argues that attitudes, subjective norms, and perceived behavioral control shape an individual's choice for a green hotel. Research corroborates TPB's utility in forecasting green consumer behavior (Han, Hsu, & Sheu, 2010; Lee, Hsu, Han, & Kim, 2010). However, contextual conditions like the availability of green hotels can affect the translation of intentions into behaviors (Stern, 2000; Han et al., 2010). If green hotels are scarce or hard to find, strong intentions may not translate into actions. Research emphasizes the role of such contextual factors in facilitating or impeding eco-friendly actions (Stern, 2000). Increased perceived control over selecting green hotels has been shown to positively influence intentions among Chinese and Portuguese tourists (Han et al., 2009; Goncalves et al., 2016). This indicates that improved perceived accessibility and control may boost the conversion of intentions into actual patronage behaviors.

Perceived Consumer Effectiveness and Sustainability Impact

Perceived consumer effectiveness (PCE) - the belief that personal actions can impact environmental issues - can shape behavioral intentions and strengthen the intention-behavior relationship (Ellen et al., 1991). In terms of green hotel selection, confidence in the sustainability significance of these choices should enhance the translation of intentions into decisions.

Numerous studies have underscored the role of PCE in fostering eco-friendly behaviors across the US (Ellen et al., 1991; Berger & Kanetkar, 1995), Asia (Han et al., 2010), and Europe (Vermeir & Verbeke, 2008). Evidence suggests that individuals with a strong belief in their positive environmental impact are more likely to adopt sustainable practices, such as recycling and energy conservation (Berger & Kanetkar, 1995). Han and colleagues (2010) also found that a stronger sense of PCE boosts the conversion of green hotel patronage intentions into actual behavior.

Hypotheses Development

Based on the literature review and the application of the TPB to the context of green hotel selection, the following hypotheses are proposed:

H1: Tourists' positive attitudes toward green hotels have a positive influence on their intentions to stay at environmentally certified properties.

H2: Subjective norms reflecting perceptions of green hotel practices becoming more socially expected and prevalent positively influence intentions to stay at green hotels.

H3: Intentions to stay at green hotels positively influence subsequent actual patronage behaviors toward environmentally responsible accommodations.

H4: The positive relationship between green hotel stay intentions and patronage behaviors is moderated by green hotel accessibility, such that greater access facilitates stronger intention-behavior consistency.

H5: The positive link between intentions to stay and actually selecting green hotels is moderated by perceived green impact, whereby better perception will boost the relation.

The tested model is illustrated in Figure 1.
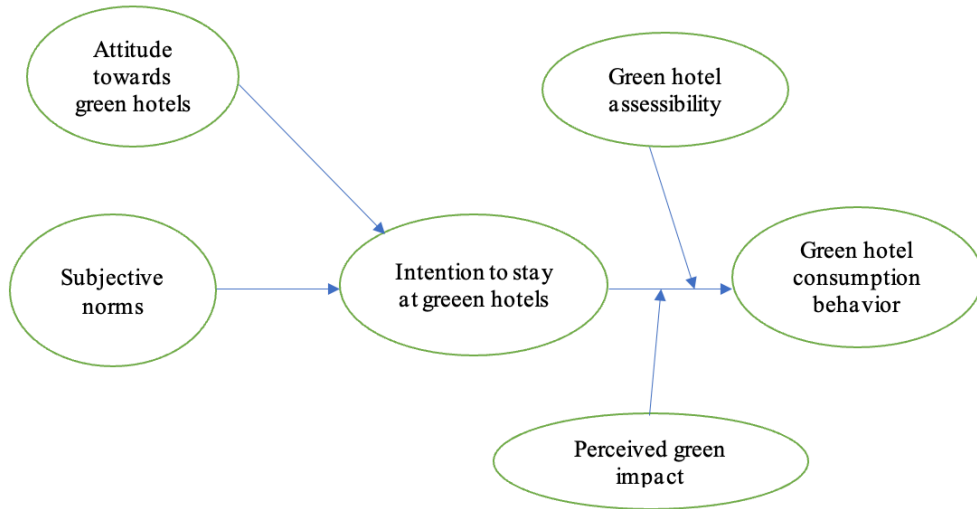
Figure 1: Conceptual framework

3. RESEARCH METHODOLOGY

3.1. Research context

Vietnam's tourism industry has experienced remarkable growth, attracting millions of visitors annually. However, this boom has raised environmental concerns, including pollution and excessive resource consumption (Huynh et al, 2023). The hospitality sector, particularly hotels, contributes significantly to these challenges due to their high energy and water usage, as well as waste generation (Jones et al., 2016). As a result, there is a growing demand for green, eco-friendly accommodations among tourists (Bruns-Smith et al., 2015).

Despite efforts by the Vietnamese government to promote sustainable tourism practices, the adoption of green hotel initiatives remains limited, with low awareness among stakeholders (Nguyen et al., 2019). Cultural and socio-economic factors may also influence attitudes toward sustainability (Choe & Phi, 2022). To address these challenges and promote sustainable tourism consumption, understanding the factors that influence tourists' intentions to stay at green hotels and their subsequent purchasing behaviors is crucial (Han et al., 2010).

3.2. Measures

For this research, established measures from previous studies were adapted to ensure the validity and reliability of the constructs. The variables in the proposed model, including green hotel assessibility, perceived green impact, intention to stay at green hotel, and green hotel consumption behavior, were modified from reputable sources (Kim et al., 2012; Chan, 2001; Wu & Chen, 2014; Nguyen et al, 2019, Verma V. K. & Chandra B., 2017). Additionally, measures for other relevant variables, such as attitudes toward green hotel, green hotel assessibility, and subjective norms were adapted from existing literature (Kim et al., 2012; Wu & Chen, 2014; Nguyen et al, 2019).

A back-translation process ensured that the green consumption measures were valid and understood. Items were translated from English to Vietnamese and back, with discrepancies resolved for clarity. Before the survey, respondents received a clear definition of a green hotel to ensure shared understanding.

The proposed theoretical framework was analyzed using SEM (structure equation modeling) (Anderson & Gerbing, 1988)

3.3. Data collection and Sample

An online survey was conducted in Hanoi in March 2024, using the convenience sampling method similar to previous studies (Han et al., 2010; Verma V. K. & Chandra B., 2017). Participants were briefed on green hotels and the study's goals. We collected 123 responses, a sizeable sample in line with previous research on green hotel selection behavior (Goncalves et al., 2016; Chen & Tung, 2014, Verma V. K. & Chandra B., 2017). The study targeted Hanoi due to its diverse population and thriving tourism industry.

All 123 questionnaires were valid. The respondents in the sample ranged in age from 18 to over 67. Nonetheless, the majority of them are female (65.85%), and young (85.4% of the respondents are between the ages of 18 and 40). Approximately 96.7% of the participants have completed college or higher education. Also, 87% of the participants have stated that they travel yearly at least, in which 15,3% travel 6 to 10 times per year. Accordingly, this sample is similar to samples of ordinary consumers in Vietnam's largest cities (Nguyen et al, 2019; Nguyen et al, 2013).

4. ANALYSIS AND RESULT

4.1. Reliability and validity

The reliabilities and validities of the measures were assessed through exploratory factor analysis (EFA) and by calculating Cronbach alphas. The results of the Scale reliability analysis using Cronbach's Alpha described that the scale of Attitude towards green hotel, Subjective norms, Green hotel accessibility and Perceived green impact effectiveness are valid with CA > 7 (Hair et al., 2009) and Corrected Item - Total Correlation > 0.3

(Cristobal et al., 2007). Items INT1, INT6 and item CB6 are deleted as the values in terms of CI-TC are below 0.3 (Cristobal et al., 2007). EFA was run with Principal Axis Factoring and Promax to test the construct validity between the model's variables. Results show that KMO is 0<0.816<1; Bartlett's sig. is 0.000 <0.05; Total Variance Explained is 66.636%>50%, and Factor loadings are all greater than the acceptable threshold of 0.5 (Hair et al., 2009). However, GHA was separated into two factors including GHAG1 (GHA1, GHA2, GHA3) and GHAG2 (GHA4, GHA5, GHA6)

Table 2: Reliability test and EFA

Variables		CI-TC	CA if deleted	Factor loading
Attitude towards green hotel		0.954		
ATT1		0.859	0.945	0.851
ATT2		0.884	0.942	0.860
ATT3		0.880	0.943	0.868
ATT4		0.857	0.945	0.915
ATT5		0.895	0.941	0.926
ATT6		0.767	0.955	0.777
Subjective norms		0.879		
SN1		0.537	0.893	0.501
SN2		0.756	0.843	0.851
SN3		0.738	0.848	0.794
SN4		0.800	0.833	0.883
SN5		0.742	0.846	0.783
Intention to stay at green hotels		0.807		
INT2		0.673	0.734	0.798
INT3		0.691	0.728	0.806
INT4		0.501	0.817	0.568
INT5		0.639	0.751	0.721
Green hotel accessibility		0.895		
GHA1	GHAG1	0.671	0.885	0.802
GHA2		0.752	0.871	0.708
GHA3		0.585	0.896	0.641
GHA4	GHAG2	0.806	0.863	0.700
GHA5		0.734	0.874	0.849
GHA6		0.771	0.869	0.856
Perceived green impact effectiveness		0.803		
PGI1		PGI1	PGI1	0.626
PGI2		PGI2	PGI2	0.743
PGI3		PGI3	PGI3	0.628
PGI4		PGI4	PGI4	0.672
PGI5		PGI5	PGI5	0.700
Green hotel consumption behavior		0.913		
CB1		0.809	0.886	0.868
CB2		0.811	0.886	0.856
CB3		0.739	0.901	0.750
CB4		0.752	0.899	0.801
CB5		0.784	0.892	0.821

Consequently, all items were retained for the subsequent analysis of CFA. The model fit met most requirements. Noticeably, due to our limitations in sample size, achieving a GFI score of 0.9 can be difficult as this index heavily depends on the number of factors, observed variables, and sample size. This has led to the decreasing popularity of GFI in assessing model fit in recent years, with some even recommending against its use (Kline, 2005; Sharma et al., 2005). Thus, we accepted that GFI was met the requirements from Baumgartner and Homburg (1995) and Doll et al. (1994)
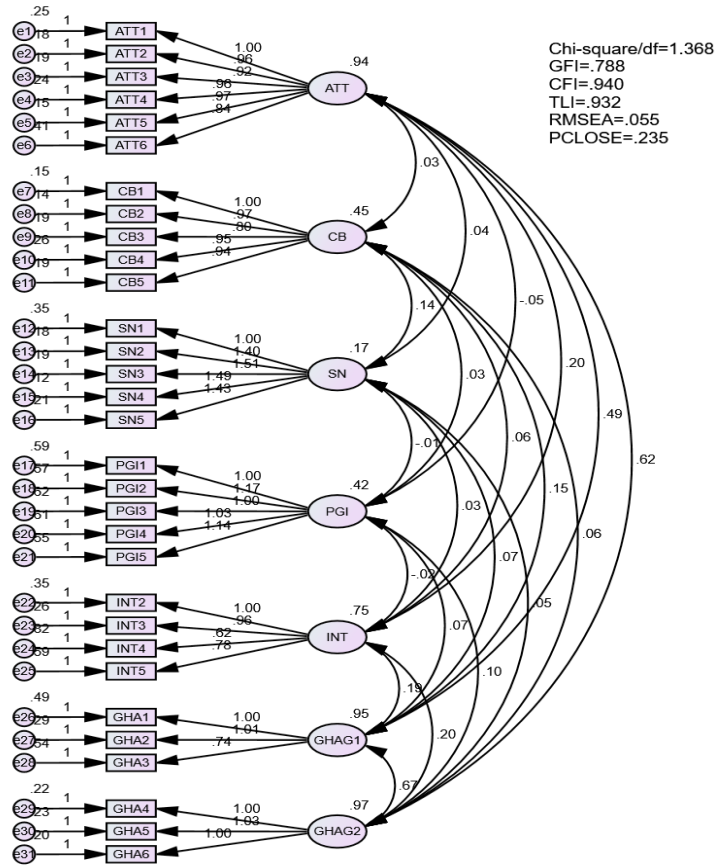
Figure 2: CFA result

4.2. Hypotheses testing

Table 3: SEM for hypothesis testing

Variables	Status	P value	Estimate
INT ←ATT	Accept	0.019	0.210
INT ← SN	Rejected	0.460	0.160
CB ← INT	Rejected	0.566	0.045
CB ← GHAG1	Accepted	0.023	0.247
ATT→ INT → CB	Rejected	0.507	0.009

SN → INT →CB	Rejected	0.609	0.007
CB ← PGI*INT	Rejected	0.149	0.137
CB ← GHAG1*INT	Rejected	0.484	-0.099
CB ← GHAG2*INT	Rejected	0.908	0.015

The hypotheses testing was conducted using Structural Equation Modeling (SEM). The estimate and p-values resulting from the SEM are crucial in determining whether to accept or reject the hypotheses.

An interesting outcome of the hypothesis testing was the acceptance of the first hypothesis (H1) which proposed that tourists' positive attitudes towards green hotels have a positive influence on their intentions to stay at environmentally certified properties. The p-value was 0.019, less than the threshold of 0.05, and the estimate was 0.210, indicating a significant positive relationship (Hair et al., 2009).
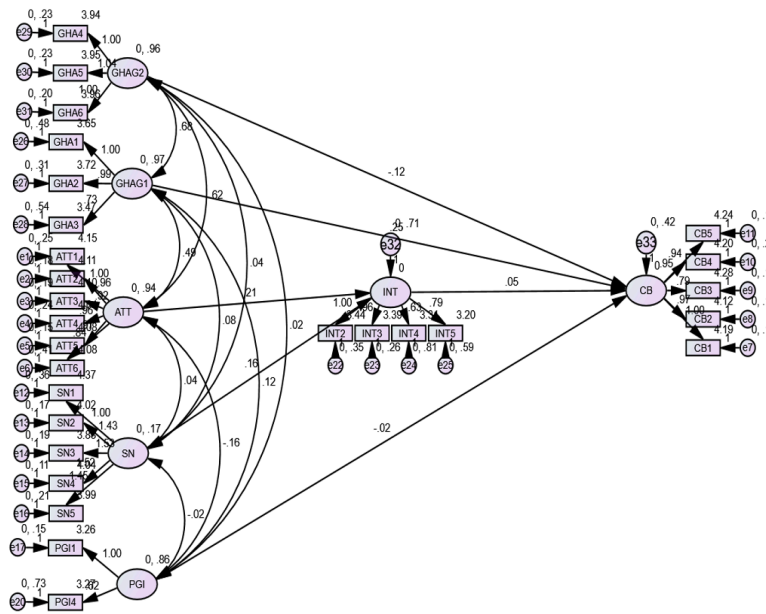
Figure 4: SEM results

In contrast, the second hypothesis (H2) suggesting subjective norms influence intentions to stay at eco-certified hotels was rejected. Despite previous studies (Han et al., 2009; Goncalves et al., 2016; Chen & Tung, 2014) showing the impact of subjective norms, the current study found no significant influence, as indicated by the p-value of 0.460.

Similarly, the third hypothesis (H3) suggesting that intentions to stay at green hotels positively influence subsequent actual patronage behaviors was rejected. The p-value of 0.566 indicated no significant relationship, contradicting the Theory of Planned Behavior (Ajzen, 1991).

The fourth hypothesis (H4), proposing that green hotel accessibility moderates the intention-behavior relationship, was accepted. The p-value was 0.023, showing a significant positive relationship.

Finally, the fifth hypothesis (H5) suggesting perceived green impact intensifies the intention-behavior relationship was rejected. Despite prior research (Berger & Kanetkar, 1995; Vermeir & Verbeke, 2008) highlighting the role of perceived consumer effectiveness, this study found no significant moderating effect, as indicated by the p-value of 0.149.

The hypotheses testing provided mixed support for the proposed model, underscoring the complexity of predicting green hotel selection behavior. The unique findings of this study contribute to the existing body of knowledge and provide valuable insights for hoteliers and policymakers aiming to promote sustainable tourism.
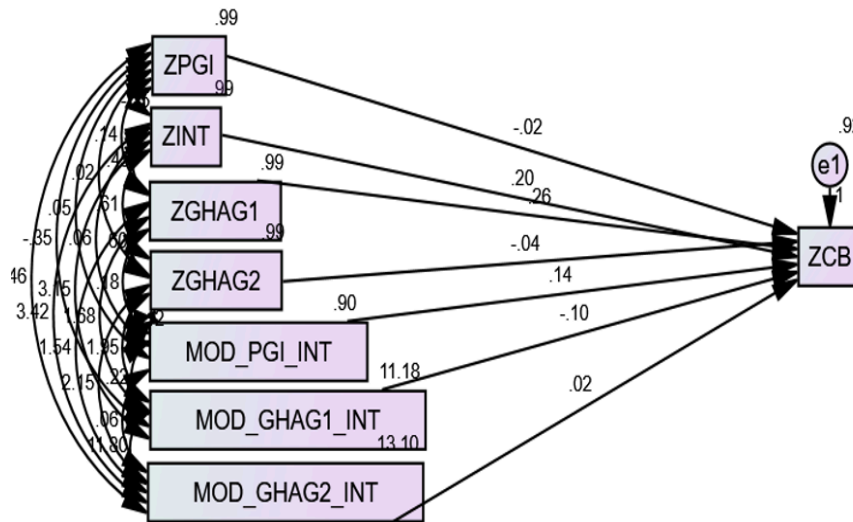
Figure 5: Moderate effects testing model

5. DISCUSSION

5.1. Discussion of result

The current study endeavored to examine the factors that influence tourists' intentions to select green hotels and how these intentions translate into actual behaviors. The findings from the hypotheses testing provide nuanced insights into this complex process.

The first hypothesis (H1), which suggested that a positive attitude towards green hotels positively influences intentions to stay at such establishments, was supported. This finding aligns with prior research that highlighted the significant role of positive attitudes in shaping green hotel selection intentions (Han et al., 2009; Goncalves et al., 2016; Chen & Tung, 2014).

It emphasizes that fostering positive attitudes towards green hotels among tourists can enhance their intentions to choose these environmentally friendly accommodations.

Contrastingly, the second hypothesis (H2) proposing that subjective norms influence intentions to stay at eco-certified hotels was not supported. This finding contradicts the previous literature (Han et al., 2009; Goncalves et al., 2016; Chen & Tung, 2014) that showed the impact of subjective norms on behavioral intentions. In the specific context of Vietnam, it appears that the perceived social pressure does not significantly sway individuals' intentions to opt for green hotels, indicating a possible cultural difference that warrants further investigation.

Similarly, the third hypothesis (H3) suggesting that intentions to stay at green hotels positively influence subsequent actual patronage behaviors was rejected. This outcome is a departure from the Theory of Planned Behavior proposed by Ajzen (1991), which postulates a direct link between behavioral intentions and actual behaviors. This discrepancy could be attributed to the interplay of various other factors that might affect the translation of intentions into behaviors, a concept explored by Stern (2000).

The fourth hypothesis (H4) suggesting that the accessibility of green hotels moderates the intention-behavior relationship was supported. This outcome aligns with Han et al. (2010) and Stern (2000), who emphasized the role of contextual factors such as availability and accessibility in influencing green consumption behaviors. It underscores that improving the accessibility of green hotels could foster stronger intention-behavior consistency among tourists.

Finally, the fifth hypothesis (H5) proposing that perceived green impact strengthens the intention-behavior link was rejected. This outcome contrasts with studies by Berger and Kanetkar (1995) and Vermeir and Verbeke (2008), who highlighted the role of perceived consumer effectiveness in promoting eco-friendly behaviors. It seems that in the specific context of green hotel selection, the confidence in personal eco-lodging decisions does not significantly intensify the intention-behavior relationship.

In sum, the hypotheses testing revealed complex relationships between attitudes, subjective norms, intentions, and behaviors in the context of green hotel selection. The findings contribute to the existing body of knowledge on sustainable tourism and provide valuable insights for hoteliers and policymakers.

5.2. Managerial implication

The managerial implications of this study are significant for hoteliers and policymakers interested in promoting sustainable tourism. First of all, the finding that positive attitudes towards green hotels influence intentions to stay at such establishments (Han et al., 2009; Goncalves et al., 2016; Chen & Tung, 2014) suggests hoteliers should invest in fostering positive attitudes among potential customers. This could be achieved through targeted marketing campaigns that highlight the environmental benefits of staying at green hotels.

Secondly, the study's finding that green hotel accessibility influences the intention-behavior relationship (Han et al., 2010; Stern, 2000) underscores the importance of making green hotels more accessible. This could involve both physical accessibility, such as location and transport links, and informational accessibility, such as making information about green hotels readily available online.

Finally, the lack of influence of subjective norms and perceived green impact on the intention-behavior relationship in this study suggests that more research is needed to understand these relationships in different cultural contexts. Policymakers could support such research to inform the development of policies and initiatives that effectively promote sustainable tourism.

5.3. Limitation

This research, despite its valuable findings, has some limitations. First, the study is geographically limited to Hanoi, thus the findings may not be generalizable to other regions or countries (Chen & Tung, 2014). Second, the sample size of 123 participants is relatively small, which may affect the statistical power and potential to detect effects (Hair et al., 2009). Third, the rejection of several hypotheses indicates potential oversights in the theoretical model. For instance, the lack of influence of subjective norms and perceived green impact on the intention-behavior relationship suggests that other mediating or moderating factors might be at play, which were not considered in this study (Stern, 2000). Lastly, the study relies on self-reported data, which may be subject to social desirability bias (Berger & Kanetkar, 1995). Future research should aim to address these limitations by expanding the geographical scope, increasing the sample size, incorporating additional theoretical constructs, and using objective measures where possible.

6. CONCLUSION

This study provides valuable insights into the multifaceted factors influencing tourists' choices for green hotels, contributing to sustainable tourism knowledge. Our findings affirm the positive influence of attitudes towards green hotels on the selection intention. However, the roles of subjective norms and perceived green impact require further exploration, as they didn't significantly sway the intention-behavior correlation.

Interestingly, green hotels' accessibility surfaced as a key factor, underscoring the need to enhance their physical and informational accessibility. Despite the study's valuable insights, the geographical scope, sample size, and reliance on self-reported data limitations emphasize a need for further research.

In conclusion, our findings provide beneficial insights for hoteliers and policymakers, underlining the importance of promoting positive attitudes and improving green hotels'

accessibility. This will encourage tourists to opt for eco-friendly accommodations, contributing to environmental sustainability and responsible tourism goals.

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SUSTAINABLE CULTURAL HERITAGE TOURISM IN THE MEKONG DELTA: APPROACH AND DEVELOPMENT PRINCIPLES

Lê Thị Ngọc Anh[1], Hồ Như Ngọc[2]

Tóm tắt: *Du lịch di sản văn hóa bền vững là yêu cầu bắt buộc và mang lại hiệu quả lớn lao cho các cộng đồng chứa đựng di sản. Tuy nhiên, các nghiên cứu về chủ đề này vẫn chưa được phát triển một cách có hệ thống ở Việt Nam. Nghiên cứu này nhằm mục đích giới thiệu các hướng tiếp cận du lịch di sản văn hóa bền vững và các nguyên tắc phát triển vận dụng phù hợp trong bối cảnh đồng bằng sông Cửu Long. Kỹ thuật phân tích dữ liệu thứ cấp và thống kê mô tả được áp dụng để xử lý các nghiên cứu và dữ liệu từ các bên liên quan. Các phát hiện chỉ ra rằng du lịch di sản văn hóa bền vững được tiếp cận từ nhiều bên liên quan, bao gồm cộng đồng, nguồn tài nguyên, khách du lịch và ban quản lý. Số liệu thống kê nghiên cứu cũng cho thấy du lịch di sản văn hóa bền vững cần đáp ứng các tiêu chí kinh tế, văn hóa xã hội, môi trường và quản lý khác nhau. Trên cơ sở phân tích các cách tiếp cận liên quan, nghiên cứu đề xuất các nguyên tắc phát triển du lịch di sản văn hóa bền vững ở Đồng bằng sông Cửu Long về kinh tế, văn hóa xã hội, môi trường và quản lý.*

Từ khoá: *Di sản văn hoá; Đồng bằng sông Cửu Long; Du lịch bền vững; Nguyên tắc du lịch*

Abtract: *Sustainable cultural heritage tourism is a mandatory requirement and significantly benefits heritage-containing communities. However, research on this topic has not yet been systematically developed in Vietnam. This study aims to introduce sustainable tourism approaches to cultural heritage and development principles for appropriate application in the context of the Mekong Delta. Secondary data analysis and descriptive statistics techniques are applied to process research and data from relevant parties. The findings indicate that multiple stakeholders, including communities, resources, tourists, and management, consider the sustainable heritage tourism approach. Research statistics also show that sustainable cultural heritage tourism needs to meet different economic, socio-cultural, environmental, and management criteria. Based on the analysis of related approaches, the study proposes principles for sustainable cultural heritage tourism development in the Mekong Delta regarding economics, socio-culture, environment, and management.*

Keywords: *Cultural heritage; Mekong Delta; Sustainable tourism; Tourism principles,*

1. INTRODUCTION

The 2030 Agenda for Sustainable Development (2015) has identified 17 sustainable development goals and influences the development trends of economic sectors. Tourism has become a valuable tool for the sustainable development of economies through indirect and direct impacts. In particular, tourism is present as an economic sector with sustainable growth and use of resources, promoting the development of

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local culture and products. Sustainable tourism also brings significant benefits to local communities by contributing to improving lives and creating job opportunities. Therefore, sustainable tourism development has become an inevitable trend and goal for countries including Vietnam.

Cultural heritage is essential as a tourism resource in exploiting the tourism economy. Tourists participate in cultural tourism with the urge to explore the uniqueness of local culture, search for authentic cultural values, or have the opportunity to interact with colorful indigenous community life. Cultural tourism promotes the revival of cultural traditions and the restoration of historical sites. However, if tourism activities get out of control, cultural sites risk destruction through erosion and metamorphosis of culture and heritage sites [1]. The process of tourism exploiting cultural heritage in other countries has shown that there is still a disregard for sustainability factors. In addition, tourism activities also have negative impacts on heritage integrity due to noise, pollution, waste, and increased traffic flow. For developing countries, tourism at cultural heritage sites also causes more serious consequences when the process of conservation and exploitation does not pay attention to sustainable principles such as the commercialization of local culture, the commercialization of cultural artifacts, failure to preserve cultural authenticity, or damage to historical sites [2].

The Mekong Delta has a diverse cultural identity compiled from the heritage of ethnic groups living in 13 provinces and cities. The region is home to 44 ethnic communities, and many ethnic groups, such as the Khmer, Chinese, Cham, and Kinh, have formed their own unique and symbolic cultures. The blend of tangible and intangible cultural heritages widely distributed across the lands has created cultural resources serving the development of the region's tourism industry. In addition, the natural conditions and characteristics of life in rural river areas also create socio-cultural nuances in the residential community that attract tourists. Developing sustainable cultural heritage tourism is an approach to contributing to the transition to a sustainable economy and helping the region exploit its existing cultural heritage in the long term. It is also an opportunity for the local community to achieve two goals: creating tourism income from exploiting local cultural heritage and preserving cultural identity [3].

The research was conducted based on the synthesis and analysis of domestic and foreign research and secondary data sources from professional management agencies to consider perspectives and approaches to sustainable tourism development and cultural heritage. At the same time, the authors analyzed the role and necessity of developing this type of tourism in the Mekong Delta. Based on theoretical and practical inheritance, the research team has proposed principles for sustainable cultural heritage tourism development in the region. Hopefully, the research results will be a valuable reference for partners interested in developing sustainable cultural heritage tourism in the Mekong Delta in the future.

2. THEORETICAL BACKGROUND

Cultural heritage tourism is considered an aspect of cultural tourism. When studying cultural tourism, authors often emphasize the purpose of tourism. During that journey, tourists are interested in culture and visit cultural sites to find and participate in unique local cultural features [4]. Cultural heritage tourism is a form of tourism related to visiting and experiencing the cultural environment of a land. Local culture is not only the typical cultural features of the locality but also includes natural elements such as landscape. Cultural heritage tourism includes tangible heritage elements such as monuments and material sites and intangible heritage such as traditions, art, special events, and cultural and religious values [1]. Another perspective of cultural heritage tourism is visiting places or communities with diverse and unique cultures representing local culture, including tangible and invisible elements [4].

Regarding tourism purposes, cultural and cultural heritage tourism are similar when tourists participate to gain cultural experience values. In carrying out tourism activities, interacting and connecting with the local community becomes a highlight and attracts tourists. Regarding resources, cultural heritage tourism is a component of cultural tourism. The term "heritage" is understood in the phrase "cultural heritage" as material and spiritual values inherited from generation to generation, which each receiving generation continues to transmit to future generations [5]. In short, cultural heritage tourism emphasizes historical inheritance, the preservation of values, and their continued transmission through the ages.

In exploiting cultural heritage tourism, sustainability is a prerequisite and needs attention [6], [7]. Sustainable cultural heritage tourism is also to fulfill the sustainable development goals put forward by the United Nations [8]. First, sustainable heritage tourism ensures long-term benefits for heritage resources [9] and becomes a factor that ensures tourist attraction [10]. In addition, sustainable heritage tourism also aims to bring great benefits to the community and increase active participation in the process of preserving and exploiting heritage [4] [10]. For local managers, sustainable heritage tourism creates motivation for them to continue managing and exploiting heritage more effectively. However, cooperation between stakeholders to jointly support the development of sustainable heritage tourism is a challenge. At the same time, the consensus on building a set of indicators to evaluate sustainability in cultural heritage tourism is still a gap [6].

3. METHODOLOGY

The study uses secondary data taken from many sources. Secondary data sources were used based on a review of relevant information and existing data. Secondary data analysis provides an overview and gains some basic knowledge about cultural heritage tourism and the context of tourism development in the Mekong Delta. The region's tourism data is taken from specialized agencies, including the Ministry of Culture, Sports, and Tourism of Vietnam, the General Statistics Office of Vietnam, and some official government

newspapers, and has been collected since 2020. Descriptive statistical methods are used to review and classify proposed principles for sustainable heritage tourism development.

4. RESULTS

4.1 Approach to sustainable cultural heritage tourism development

Cultural heritage tourism is recognized as an effective way to achieve two parallel goals: economic development and the maintenance of local cultural heritage conservation. Sustainability is both a goal and a driving force for developing heritage tourism. If cultural sites do not implement the principles of sustainable tourism, damage and transformation of the heritage environment will occur. Since then, heritage sites have no longer been attractive to tourists when they are not provided with unique, culturally authentic experiences [11].

Therefore, sustainable tourism of cultural heritage is researched to achieve tourism development goals. Many different approaches are being studied to promote sustainable development in heritage tourism. Community-based tourism approaches are relatively common in publications. This approach is based on the sustainable benefits that tourism brings to society, such as improving quality of life, contributing to empowerment, and promoting community initiatives. The researchers believe that perceptions of community values, beliefs, and norms towards heritage cultural values will strongly influence residents' intentions to support sustainable cultural heritage tourism. When residents know the consequences of spontaneous tourism activities, they will promote their responsibility to care for and protect the sustainability of cultural heritage resources. At the same time, residents also play an active role in encouraging visitors to respect local culture. Therefore, for sustainable tourism development, strong community participation is enabled in tourism decision-making [12] [13] [14].

Sustainable cultural heritage tourism also depends on tourism resource characteristics such as uniqueness and intact preservation. Attractive cultural heritage resources bring economic and socio-cultural values by satisfying the experiential needs of tourists. Cultural heritage tourists often seek authentic cultural values rather than staged cultural resources. Therefore, preserving tourism resources contributes to creating sustainability. However, during the exploitation process, intangible heritage resources must also consider changes in form and interaction to suit customer needs. This transition process ensures compliance with the tastes of the modern market but still does not lose its unique cultural identity. In intangible heritage resources, practitioners become an essential element that creates vitality and soul for heritage when introducing it to visitors [9].

Another aspect of accessibility is from the tourist perspective. Studies have proven that tourist satisfaction is closely linked to the sustainability of heritage tourism. Tourists feel satisfied at heritage tourist destinations that ensure sustainable development in diverse aspects such as economics, socio-culture, institutions, and the environment. However, tourists' perceptions also differ on the sustainable elements of heritage tourism,

in which socio-cultural, economic, and institutional factors are valued more highly than environmental aspects [14] [15] [16].

In developing sustainable cultural heritage tourism, management is an essential factor. The government is affirmed to guide and strongly support the development of sustainable heritage tourism. Management agencies play a role in developing principles for sustainable heritage tourism development to harness the power of stakeholders. The role of management agencies is also demonstrated through heritage tourism conservation and exploitation projects as well as building a sustainable development monitoring system in vulnerable heritage tourism destinations [17]. Macro-level management provides measures to protect tourism, such as avoiding the risk of overexploitation. The specialized management agency develops principles, offers technical support, and connects stakeholders to ensure sustainability [2].

To summarize, assessing the sustainability of cultural heritage tourism destinations is of interest to researchers from different angles. Among them, evaluating the role of communities in cultural heritage tourism has received the most attention from researchers. Studies focus on residents' perceptions of the impact of heritage tourism. From there, they tried to find the connection between awareness, behavior, and community participation in tourism support. However, focusing on assessing the sustainability of the community surrounding the heritage is a limitation. Because community and heritage sustainability are separate constructs, sustainable cultural heritage research should only consider them in their mutual relationship [2].

4.2. The role of sustainable cultural heritage tourism development in the Mekong Delta

The Mekong Delta spans many localities with diverse cultural and social histories. Travelling to learn about Southern amateur music, Khmer cultural heritage, spiritual culture, and traditional festivals is a specific tourism activity and the main tourism product of the region. Covering the entire Mekong Delta are cultural heritages associated with river life and orchard civilization. These heritage sites are closely associated with the residential community, creating conditions to exploit and expand the scope of cultural heritage tourism. In addition, the region's intangible cultural heritage system is diverse, such as music, performances of folk art, and festivals such as Cau Ngu, Ok Om Bok, Chol Chnam Thmay, Sen Dolta, and Ba Chua Xu temple. Intangible heritage is associated with historical relics such as pagodas and shrines. The sites have unique and attractive architectural and artistic styles [3]. This cultural resource is an essential premise for exploiting tourism. It is a method to help improve the economic life of the local community while preserving traditional cultural values.

The Mekong Delta has many favorable conditions and natural blessings. However, economic development has not fully exploited the region's potential. The total product per capita of the area in 2022 will only reach 65.49 million VND, compared to the

Southeast region reaching 157.02 million VND. Compared with the economic region with similar natural conditions, the Red River Delta, the average total product per capita in the Mekong Delta is only half that (123.28 million VND). The even lower region, the Central Coast, reached 69.48 million VND [18]. Therefore, the Mekong Delta must shift to develop a more effective economy.

Moreover, the region's agriculture suffers many impacts from global climate change and the decline of Mekong River water resources. Finding sustainable livelihood strategies for communities in the Mekong Delta has become increasingly important. In that context, transforming tourism activities based on the region's rich cultural heritage is a reasonable and adequate direction.

Natural and cultural resources are the prerequisites for forming unique and competitive tourism products in the region. The planning scheme for the development of the Mekong Delta region for the 2021 – 2030 period with a vision towards 2050 has identified tourism as an economic sector serving as a sustainable development strategy to adapt to climate change. The exploitation of cultural heritage tourism resources is mentioned with the development of tourist resorts and tourist spots at national and regional levels, in which the protection of natural ecosystems is associated with preserving cultural and historical values. Cultural tourist attractions are closely associated with the natural landscape of the land, such as Phu Quoc National Tourist Area, Sam Mountain, Thoi Son Island, Ong Ho Island, Cao Van Lau Memorial Area, Ninh Kieu Wharf, Ba Om Pond, Ha Tien, and Van Thanh Temple. Cultural heritage has become an essential component in the strategy of developing tourism into the region's primary economic sector. However, the effectiveness of tourism exploitation in the region has not yet met development expectations [19].

Table 1. Revenue from travel tourism at preliminary current prices in 2022

	Revenue (billions)	%
Total	35453.39	100.0
Red River Delta	11087.79	31.3
Northern midland and mountainous	494.12	1.4
North Central and South Central Coast	4715.69	13.3
Central Highlands	145.21	0.4
Southeast	18053.37	50.9
Mekong Delta	957.20	2.7

Source: [18]

The region's contribution to the country's overall travel revenue is still limited, and the difference is significant compared to other leading areas. Therefore, tourism efficiency is not commensurate with resource potential. Tourism has not yet been able to become an economic sector that brings development momentum to the region.

Exploiting cultural heritage tourism with the principle of sustainability is a factor that ensures long-term development and brings positive values. Sustainable

development principles ensure that heritage tourism destinations are unique and attractive to tourists. Heritage values are preserved in the right direction, creating the possibility of long-term exploitation. Heritage tourism destinations developed according to sustainable principles also minimize damage to the environment containing heritage, such as overcrowding, pollution, and waste. On the other hand, sustainable development of cultural heritage tourism destinations brings practical benefits to the local community. Residents have the opportunity to participate in the process of establishing and orienting tourism development in the area. This participation will avoid conflicts between the community and other cultural heritage tourism operators. In particular, at heritage sites at risk of being damaged by natural environmental changes or human impacts, exploitation according to sustainable principles contributes to preserving and restoring intact heritage.

In short, sustainable cultural heritage tourism will accommodate appropriate economic transformation and effectively exploit the region's diverse cultural and historical potential. At the same time, it meets the needs of developing a form of tourism that brings practical benefits to the local community. Exploiting cultural heritage resources according to sustainable principles brings great economic, cultural, and social benefits to the community.

4.3 Principles for the Mekong Delta in developing sustainable cultural heritage tourism

Based on the analysis of previous research and the development characteristics of the region in tourism in general and cultural heritage tourism, the research team proposes several principles for the development of cultural heritage tourism in the Mekong Delta.

Table 2. Principles in sustainable cultural heritage tourism

Factors	Principles
Economic	- Ensure growth and bring good revenue to cultural heritage tourism sites. - Improve accessibility to tourist destinations for different types of visitors and improve the quality of transportation. - Limit the number of visitors according to the tourist destination's capacity. - Improve the quality of support services at heritage sites. - Fair distribution of income from tourism to local communities. - Ensure a proportion of revenue to serve the restoration and preservation of heritage works. - Create job opportunities for local workers in tourism activities at the heritage site. - Diversify tourism jobs for residents with different abilities and bring adequate income. - Promote local economic diversification through tourism. - Availability and abundance of souvenir products with typical local identities.

Culture and society	- Cultural heritage sites are preserved for their integrity and authentic cultural values.
	- Be well aware of the responsibility of the residential community regarding heritage values and proactively encourage tourists to respect cultural heritage.
	- Tourists are well guided through local traditional cultural practices.
	- Interaction between residents and tourists.
	- The community actively participates in tourism activities at heritage sites, and the community plays a role in contributing comments and planning tourism development at cultural heritage sites.
	- Local cultural identity is restored and well preserved.
	- Improve social services and infrastructure at heritage tourist destinations, improving the quality of life in the local community.
	- Participating tourists are satisfied with the experience at the cultural heritage tourist destination.
	- Tourism's social environment in terms of security, order, and street vendors is controlled.
Environment	- The monument's landscape and surrounding areas are preserved and not harmed.
	- Have solutions to respond to unwanted impacts from climate change and the local environment.
	- Control and promptly handle pollution problems such as waste and water pollution.
	- Control architectural works to ensure harmony of works in community cultural heritage areas (villages).
Manager	- Make specific plans and clear directions for local cultural heritage tourism development.
	- There is a code of conduct along with a system of clear regulations on cultural tourism activities at the heritage site.
	- Close cooperation between the public and private sectors in exploiting cultural heritage tourism to exchange information and deploy tourism activities at cultural heritage sites.
	- Active management in building promotional strategies, seeking investment sources, planning heritage management, and tourism exploitation.

(Sources: [4] [10] [12] [13] [15] [16] [20])

5. DISCUSSION

Cultural heritage tourism in areas needs to focus on ensuring sustainable principles to achieve long-term development and bring about equitable distribution of tourism benefits. Economic sustainability concerns future revenue, employment, income distribution, and heritage capacity. Socio-cultural sustainability requires awareness of heritage value, active participation of the host community, heritage authenticity, visitor satisfaction, and improving social infrastructure at the site. Heritage. Environmental sustainability is demonstrated through landscape conservation and measures to prevent environmental degradation and pollution. The management agency's sustainability is demonstrated through its ability to plan and organize tourism effectively. However, the assessment of the importance of different indicators depends on each stakeholder's perspective.

Community groups are more interested in economic sustainability, while tourist groups are more interested in socio-cultural aspects of sustainability. Therefore, it is necessary to develop further research examining the different levels of influence of factors on the sustainability of cultural heritage. Building weights for elements when evaluating the sustainability of a cultural heritage site is a suggested direction for further research. Each region will have distinct socio-historical characteristics. Therefore, sustainable cultural heritage tourism development also needs to be placed in the specific context of each community to find the most appropriate strategy. The research has suggested principles for developing cultural heritage tourism in the Mekong Delta. However, due to the limitations of many factors, practical verification has not yet been carried out. Besides the Mekong Delta, each cultural heritage area will also have its nuances of development. Therefore, it is necessary to put development principles into the specific context of each region to determine the most appropriate assessment method.

6. CONCLUSION

Sustainable tourism development benefits all elements participating in tourism, especially tourism resources. Economic, socio-cultural, or environmental changes make cultural heritage fragile and easily affected. Sustainable cultural heritage tourism ensures a balance between conservation and tourism exploitation through the influencing role of stakeholders. Local communities play an essential role in the participation and promotion of cultural heritage tourism development. The authenticity of cultural and heritage values is also a factor in ensuring the attractiveness of a heritage destination. Besides, participating tourists are satisfied with the experience and form an awareness of cultural and heritage values. The leading role of local management agencies in planning and implementing development measures becomes essential. The Mekong Delta has diverse potential for tangible and intangible cultural heritage but has not achieved high tourism efficiency. There needs to be a solution to exploit the potential of cultural heritage in tourism development more effectively and sustainably. Future planning policies must also ensure sustainability principles in developing cultural heritage tourism. It brings long-term exploitation potential and promotes local community economic change for the Mekong Delta.

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INTEGRATING THE NORM ACTIVATION MODEL
AND TECHNOLOGY ACCEPTANCE MODEL TO EXPLAIN TOURIST INTENTION
TO USE PUBLIC BIKE RENTAL SERVICE

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Abstract: *To investigate the usage intention of public bike rental service (PBRS) among visitors, this research employs an integrated approach consisting of two psychological frameworks: the Norm Activation Model (NAM) and the Technology Acceptance Model (TAM). The integrated NAM-TAM model is implemented to conduct a survey (sample n = 777) with visitors to Hanoi, Danang, and Ho Chi Minh City regarding the factors underlying their intentions to continue using the PBRS TNGo. Structural equation models suggested that: (1) the NAM-TAM can explain behavioural intention to use smart PBRS. Perceived Usefulness (PU), Perceived Ease of Use (PE), and Awareness of Consequence (AC) have positive and significant impacts on Attitude Towards Using (AT) and, thus, on Behavioural Intention to Use (BI). Also, Personal Norm (PN) positively influences BI. (2) Among such four independent variables, tourists' awareness of consequences produces the most potent effect on the intention to continue using PBRS. In terms of theoretical contribution, this study suggests a new framework to analyse tourists' behavioural usage intention towards innovative and sustainable tourism services. Practically, the research's outcomes offer new insight into the intention to use PBRS and the strategy to promote such usage among tourists.*

Keywords: *Public bike rental service, Norm Activation Mode, technology Acceptance Model, smart tourism.*

Tóm tắt: *Để điều tra ý định sử dụng dịch vụ cho thuê xe đạp công cộng (PBRS) của du khách, nghiên cứu sử dụng một phương pháp tích hợp bao gồm hai khung nhận thức tâm lý: Mô hình Kích thích Chuẩn (NAM) và Mô hình Chấp nhận Công nghệ (TAM). Mô hình tích hợp NAM-TAM được thực hiện để tiến hành một cuộc khảo sát (mẫu n = 777) với du khách đến từ Hà Nội, Đà Nẵng và Thành phố Hồ Chí Minh về những yếu tố ảnh hưởng đến ý định sử dụng dịch vụ PBRS TNGo của họ. Kết quả nghiên cứu chỉ ra rằng: (1) Mô hình NAM-TAM có thể giải thích ý định hành vi sử dụng PBRS thông minh. Đánh giá về ích lợi (PU), đánh giá về độ dễ dàng sử dụng (PE) và nhận thức về hậu quả (AC) có ảnh hưởng tích cực và có ý nghĩa đối với Thái độ Đối với Việc Sử Dụng (AT) và, do đó, đối với Ý Định Hành Vi Sử Dụng (BI). Ngoài ra, Chủ thể Cá nhân (PN) ảnh hưởng tích cực đến BI. (2) Trong bốn biến số độc lập này, ý thức của du khách về hậu quả tạo ra ảnh hưởng mạnh mẽ nhất đối với ý định tiếp tục sử dụng PBRS. Về mặt đóng góp lý thuyết, nghiên cứu này đề xuất một khung nhìn mới để phân tích ý định sử dụng hành vi của du khách đối với các dịch vụ du lịch sáng tạo và bền vững. Về mặt thực tế, kết quả của nghiên cứu mang đến thông tin mới về ý định sử dụng PBRS và chiến lược để thúc đẩy sự sử dụng đó trong cộng đồng du khách.*

Từ khóa: *Dịch vụ cho thuê xe đạp công cộng, mô hình Kích thích Chuẩn, mô hình Chấp nhận Công nghệ, du lịch thông minh.*

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1. INTRODUCTION

Recently, smart public bikes have become prominent in many countries all over the world. A study carried out by The Business Research Company (2023) suggests that the global market of smart public bikes has reached US$ 3,82 billion in 2023 at an annual growth rate of 7,3%. Such an upward trend is expected to continue in the future, increasing the market size to US$ 4,87 by 2027 at the rate of 6,2% per annum [1]. The PBRS was first introduced by TNGo to Vietnamese users in Ho Chi Minh City with 43 docking stations in 2021 [2]. The service has been well received among the Vietnam population, leading to its rapid expansion. In January 2024, PBRS is available in six major cities with 285 docking stations and has been used by residents to travel more than 4,6 million kilometres [3]. This implies that PBRS are playing a crucial part in the transportation system in Vietnamese cities. Apart from residents, PBRS also target tourists who visit destination cities. PBRS docking stations are usually located near tourist hotspots with eye-catching colours to provide a convenient, economical, and sustainable means of transportation for people visiting six Vietnamese top-tier cities [4,5,6].

However, PBRS has to face fierce competition from other means of transportation using fossil fuel which are perceived as faster and more convenient in tourists' mind [7]. This issue can cause the reluctance to use PBRS in some places. However, does travelling speed matter to tourists or some other determinants during the formulation of behavioural intention toward PBRS usage? It is necessary to study the underlying factors behind such a behavioural intention. The in-depth knowledge gained can provide direction in promoting the use of such a sustainable mode of transportation among Vietnamese tourists.

Existing empirical works suggest that perceived ease of use and perceived usefulness significantly influence attitude toward using PBRS, which, in turn, has a strong effect on behavioural intention to use [8,9]. In addition, as PBRS's main feature is sustainability, attitude toward using PBRS can be influenced by the user's awareness of its usage's environmental consequences [10,11]. Past research on PBRS usage intention usually employed only TAM or TBP, which evolved from the theory of reason action, which could not fully interpret the tourist's behavioural intention. In addition, they also focus on residents rather than tourists so that the majority include general environmental concerns (to the world) rather than altruistic concerns toward travel destinations like awareness of consequences. Thus, by proposing an integrated model of NAM and TAM to investigate tourists' intention to use PBRS and validate its relevance in assessing PBRS usage intention.

In this paper, section 2 examines the appropriate studies on PBRS, TAM, and NAM frameworks which is followed by the development of research model and hypotheses in section 3. The research methodology is articulated in section 4 while section 5 presents the research findings. While section 6 provides a thorough discussion and interpretation of the findings and the research implications, section 7 concludes the research.

2. LITERATURE REVIEW

2.1. Public-Bike Rental Service

Public-Bike Rental Service (PBRS) is one type of Smart Product-Service System (SPSS) consisting of both smart products and electronic services (e-service) [12]. In the case of PBRS, the products offered are smart bicycles (either ordinary or electric ones) equipped with sensors, automatic lock, and GPS tracking systems. On the other hand, electronic services are monitoring systems, stored, and executed through a website or mobile application, serving as a communication channel between end users and service providers. Accordingly, people will use PBRS if they are comfortable with both smart products and e-services offered by the providers [12]. As a part of the sharing economy, PBRS facilitates the purchase of public bicycle usage during a specific period of time while the bicycles themselves still belong to the service providers [13]. Such a business model is generally classified as use-oriented product-service systems under the supply approach, aiming to satisfy the user's demand for service outcome (ibid.). Authors like Kim et al. [14] also suggest that PBRS operates based on a smart system and, thus, can also be classified as an information technology-based business model.

Existing papers on PBRS focus primarily on the concerns related to both the utility and technological aspects. Within the former area, studies conducted by Soriguera et al. [15] and Yang et al. [16] proposed the emphasis on improving usage productivity to increase overall efficiency and stimulate usage intention. Among the practical implications listed by such scholars, the most common ones aim to reduce travel distance, biking duration, and transportation costs. Researchers like Hsu et al. [17] and Martin et al. [18] employed the physical features of smart bikes themselves like weight and design to evaluate end-user preferences in terms of riding safety and joyfulness. Technological concerns on PBRS also attract the attention of worldwide scholars. The common topics found within this area are "user interface" [19,20,21] and "ease of use" [22,23,24]. The most recent trend in researching user behaviours was constructed based on TAM and its extended versions with TBP which incorporates the two above-mentioned perspectives [8,25].

In addition, use-oriented product-service systems are praised for their ability to satisfy consumer's sustainability demands. PBRS can contribute to the enhancement of financial benefits offered to end users, the increase of overall body function, and the reduction in greenhouse gas emission [25,26]. In terms of environmental sustainability, many researchers have incorporated various items into TAM and its extension to assess biking behaviours, and the most common ones are "environmental protection" [8], "environmental concern" [27], environmental value [25], and "green perceived value" [28].

Among the current studies on PBRS-user behaviour, environment-related items are designed to measure the concern for the sustainable state of the world in general

rather than the hosted cities. This can be attributed to the design of a research framework incorporating TAM with TBP, which can be employed to interpret individual behaviours based on purely personal cost-benefit relationships [29,30]. However, the sustainable consumption of sustainable products must also be investigated from an altruistic perspective, concerning consumers' awareness of the consequences of pro-environmental behaviours [31,32].

2.2. Technology Acceptance Model

Scholars in the field of information technology have been researching the motivation for people to accept new technological solutions [9,15,25]. Many theoretical frameworks have been developed to support such research direction under various fields of study namely economics, sociology, and psychology. Among them, the most employed is TAM introduced by Davis et al. [33] when investigating the mechanism behind consumer's intention to use new information technologies. The theoretical framework was built based on the sociological model of the Theory of Reason Action (TRA) of Fishbein and Ajzen [34]. As suggested by the two scholars, individuals' beliefs can affect behavioural intention through their attitudes. Applying that perception to TAM, Davis et al. [33] suggested that potential consumers' PE or PU towards new technologies are the determinants of their attitudes and usage decisions. PE, as stated by these authors, is determined by the level at which an individual believes that minimal effort would be required to operate the system. On the other hand, PU is defined as a user's expectation that employing a certain system will improve her/his performance outcome (ibid.).

TAM and its extensions have been widely employed and validated in information technology, including online shopping [35], e-banking [36], e-tourism [37], and smart green solutions [38]. Among those studies, PE and PU have been repeatedly confirmed to be valid in determining intentional and actual usage behaviour. Thus, the authors of this paper decided to employ TAM to construct the research model to predict the behavioural intention to use PBRS.

2.3. Norm Activation Model

In 1977, Schwartz introduced the Norm Activation Model (NAM) to investigate the motivating factors behind "*human intention towards altruistic and pro-environmental behaviours*" [39]. Pro-environmental behaviour consists of behaviours which decrease the negative influences generated by an individual on a shared ecological system. The NAM framework proposed three variables personal norms (PN), ascription of responsibility (AR), and awareness of consequences (AC). As suggested by Schwartz [39], PN is the predecessor of pro-environmental behaviour/intention and is determined by AC and AR.

NAM supposes that the origin of an individual's pro-environmental behaviours is his/

her awareness of the consequence of harmful behaviour. Accordingly, the feeling of being guilty or responsible for such a negative influence is developed within that individual's mind, and thus, facilitates the development of his/her intention to act pro-environmentally [40]. In other words, behavioural intention is regarded as a complementary and interactive relationship between AC, AR, and PN [41]. Through the awareness of negative influence on others, AC triggers PN which is the feeling of being obligated. Also, AC helps an individual to recognize the benefit of acting pro-environmentally [39]. AR is regarded as the feeling of being guilty of behaving irresponsibly toward the environment or the sense of being responsible for generating positive influences through pro-environment behaviours [41]. PN expresses an individual's commitment to carry out certain activities which can be classified as pro-environmental [42]. In general, people's intention to act pro-environmentally is directly affected by PN behaviours which are the result of their awareness of and the sense of being responsible for their behaviour's destructive outcomes [39].

Various research in the field of green consumption behaviour have employed the NAM framework including those targeting travellers [43], festival participants [44], and especially tourists [45,46,47]. In the case of green technology consumers, NAM is applied in the studies of Nordlund et al. [48] and Handarujati [49] on electric/hybrid vehicle switching intention. Thus, the model is suitable for predicting the behavioural intention of using sustainable products like PBRS.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESES

3.1. Relationships Between Perceived Ease of Use, Perceived Usefulness, Attitude Towards Using, and Behavioural Intention to Use

TAM suggests that PE and PU are the main motivators for certain individuals' intention to adopt new technological system [50]. Besides, in the context of online platform/mobile applications, PE is widely confirmed to have a significant and positive impact on PU. When investigating the behaviour of SPSS consumers, scholars like Taherdoost et al. [51] discovered that an individual tends to demonstrate a positive attitude towards the usage of the systems if he/she perceives that it does require little or no effort while maximizing the task outcome. In the studies on shared e-bike users in China, Li et al. [8] also confirm that attitude has a positive effect regarding the intention to use while Lu et al. [9] validate the positive correlation between PE and PU. In agreement with existing research, it is hypothesised that:

H1. The perceived ease of use of PBRS produces a positive and significant impact on the perceived usefulness of PBRS.

H2. The perceived ease of use of PBRS produces a positive and significant impact on the attitude toward using PBRS.

H3. The perceived usefulness of PBRS produces a positive and significant impact on attitude toward using PBRS.

H4. The attitude toward using PBRS produces a positive and significant impact on behavioural intention to use PBRS.

3.2. Relationships Between Awareness of Consequence, Ascription of Responsibility, and Personal Norm

The interrelationship between the three variables of the NAM is highly controversial. The very first version of NAM suggests that AC directly generates AR which, in turn, fosters the establishment of PN and behavioural intention. Such a linear and consecutive relationship has been empirically validated in various studies [52,53,54]. The second perspective portrays that both AC and AR have a direct influence on PN [52]. The most recent point of view embraces such a previous perspective while adding that PN modulates the relationship between AC/AR and pro-environmental intention and behaviours [55]. In other words, Savari [56] suggests that individuals with higher levels of AC and AR, tend to depict the more significant relationship between PN and the intention to act pro-environmentally. Such a belief has been widely confirmed in various studies in the field of sustainable travelling, including those on electric bikes [57], green transportation [58], and public bike systems [11]. We employed the last point of view to construct the theoretical framework for this paper (Figure 1). The hypothesises for this section is proposed as:

H5. The awareness of the consequence of pro-environmental behaviours produces a positive and significant impact on the tourist's personal norm.

H6. The awareness of the consequence of pro-environmental behaviours produces a positive and significant impact on the tourist's ascription of responsibility.

H7. The ascription of responsibility toward pro-environmental behaviours produces a positive and significant impact on the tourist's personal norm.

H8. Tourist's personal norm toward pro-environmental behaviours produces a positive and significant impact on behavioural intention to use PBRS.

3.3. Merging TAM and NAM

Both TAM, founded on an individual's perception toward the usage of new information technologies, and NAM, assessing the individual's intention to act pro-socially, have been integrated into several studies on sustainable service consumption [59,60,61]. The primary benefit of such an integration is the examination of both pro-environmental and technology-evaluation factors acting jointly with one another [62,63]. Thus, by merging TAM and NAM, the dynamic relationship among the four variables of AC, PN, AT, and BI can be fully exploited.

The direct and positive relationship between AC and AT toward pro-environmental behaviours has been widely confirmed in various studies. Ren et al. [64] discovered that a tourist's environmental knowledge fosters the formulation of attitudes toward pro-environmental practices when travelling. Similar findings were concluded from the works of Palomino and Barcellos-Paula [65] on green purchases, Araos [66] on tourist operators, and Fauzi et al. [67] on tourist purchases in green hotels. Therefore, it is hypothesised that:

H9. Tourist's AC toward pro-environmental behaviours produces a positive and significant impact on the attitude towards using PBRS.
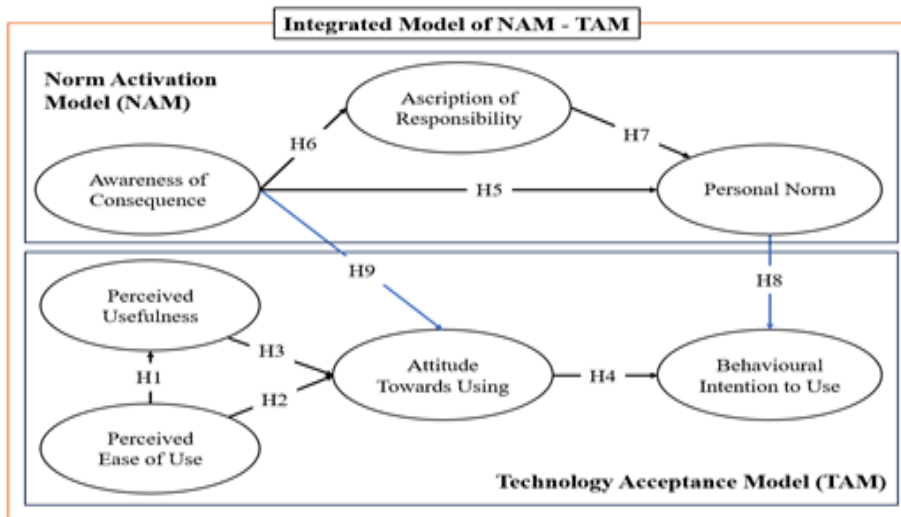

Figure 1: The research model

4. METHODOLOGY

4.1. Case-study background

The public bike-sharing system TNGo (TN-Go) has been operated by Tri Nam Company since 2021 and now is available in six tourist cities Hanoi, Hai Phong, Danang, Quy Nhon, Vung Tau, and Ho Chi Minh City. TNGo aims to offer a new and pro-environmental mode of transportation to both residents and especially tourists in major cities in Vietnam. The system also helps connect all other modes of public transportation (bus, train, etc...) through 385 docking stations located near tourist hotspots in 2024 [3]. The price for every 30-minute usage is VND 10,000 for the electric bike and VND 5,000 for the basic one which is highly economical for Vietnamese tourists [2]. In Hanoi, just after two months after its introduction, TNGo's PBRS has gained about 100,000 users and provided more than 135,000 trips to residents and tourists [5].

4.2. Measurement

The quantitative data of this paper was collected through an online questionnaire under the survey method. To validate the research framework, seven variables from TAM

and NAM were measured (Table 1). The multi-item measures were designed based on existing papers' measurement scales on SPSS and pro-environmental behaviour which have been empirically verified. The items for all of such seven constructed were measured based on the five-point Likert scale.

Four TAM variables (PE, PU, AT, BI) were measured based on the items taken from the works of Li et al. [8], Lu et al. [9], and Zhang and Chang [27]. Those items were customised to fit with the paper's background of PBRS. Items employed to measure PE assess the level of effort required to use PNGo service. PU items capture the perceived convenience, health, and financial benefits when using public bikes as a mode of transportation during visits to tourist destinations. Three items were employed to judge AT while BI were measured based on another three evaluating tourist's acceptance and intention to continue using PBRS.

For NAM variables (AC, AR, PN), items were adopted from Pan et al. [25]; and Savari et al. [68]. Among them, those used to measure AC investigate tourists' consciousness toward the environmental effects of using PBRS. AR items capture tourist's perception of their responsibility to act pro-environmentally while PN items assess whether tourists are committed to doing so.

Table 1. The research measurement scales

Construct/item	Code	Authors
Perceived Ease of Use (PE)		
For me, learning how to use TNGo requires little effort.	PE1	Li et al. [8]; Lu et al. [9]
My interaction with the TNGo application is comprehensive and straightforward.	PE2	
It is easy to find the TNGo parking dock.	PE3	
It is easy for me to become skilful at using the TNGo application.	PE4	
Perceived Usefulness (PU)		
Using TNGo helps me arrange a flexible travelling schedule.	PU1	Li et al. [8]
Using TNGo helps increase my health.	PU2	
Using TNGo helps me visit difficult-to-access tourist attractions.	PU3	
Using TNGo helps me save money when travelling.	PU4	
Using TNGo increases travel convenience.	PU5	
Attitude Towards Using (AT)		
I think using TNGo will gives me good feelings.	AT1	Zhang & Chang [27]
I think using TNGo is a good choice.	AT2	
I think using TNGo is a wise decision.	AT3	
Behavioural Intention to Use (BI)		

I intend to use TNGo during my future holidays.	BI1	Li et al. [8]
TNGo will always be my first choice of mean of transport during my travel to any destination.	BI2	
I plan to keep using TNGo regularly during this visit.	BI3	
Awareness of Consequence (AC)		
I think using TNGo can decrease the level of air quality degradation.	AC1	Pan et al. [25]; Savari et al. [68]
I think using TNGo can retain the natural beauty at the destination.	AC2	
I think using means of transportation relying on fossil fuel could pollute the destination's environment.	AC3	
I think TNGo can reduce carbon emissions.	AC4	
Ascription of Responsibility (AR)		
I think I contribute to the destinations' environmental deterioration to some extent.	AR1	Savari et al. [68]
I think my mode of transport contribute to the destinations' environmental deterioration to some extent.	AR2	
I think all tourists need to protect the environment at the destinations.	AR3	
I think it is my responsibility to protect the environment at the destinations.	AR4	
Personal Norm (PN)		
I feel obliged to use sustainable modes of transport during my visit.	PN1	Savari et al. [68]
If I don't contribute to the destinations' environmental deterioration, I will see myself as a better tourist.	PN2	
I feel I have a moral commitment to behave pro-environmentally.	PN3	

Source: Created by authors

4.3. Sampling and data collection

The survey was conducted through an online questionnaire designed on Qualtrics. The link to the questionnaire is stored within a QR code which was printed out and distributed to the research volunteers. The authors of this paper aim to study the behavioural intention of TNGo service among domestic tourists, the data collection took place in three major cities namely Hanoi, Danang, and Ho Chi Minh City located in the North, Centre, and South of Vietnam. In addition, only tourists who have used TNGo bike are invited to answer the questionnaire as they have more experience in PBRS's usage, related to PE and PU of TAM. The research volunteers searched for potential participants at TNGo docking stations near tourist hotspots. They approached people who had returned the bike and only invited those who were identified as tourists to answer the questionnaire. Upon finishing the survey, participants were presented with a small souvenir representing the tourism destination (either Hanoi, Danang, or Ho Chi Minh City). A total of 865 replies were gathered from June 2023 to August 2023. Only 777 (89.8%) of them were deemed as valid while the rest were removed due to monotone answers.

5. FINDINGS

5.1. Sample characteristics

Table 2 depicts the sample structure. Specifically, the sample is divided evenly between males (49.03%) and females (50.96%). This proportion is deemed to be acceptable as shown in the studies conducted by Mai [69]. The sample is diverse regarding age distribution as the Gen Z (18-27) segment still dominates the whole sample (58.17%), followed by Gen Y (28-43) - 38.35% and Gen Z (44-59) - 3.47%. Compared to tourists from older age groups, those of Gen Z tend to demonstrate a higher tendency to experience new things such as riding a smart bike during their trip [70].

Table 2. Sampling profile

Variables	Frequency	Percentage (%)
Gender		
Female	396	50.96
Male	381	49.03
Age		
18-27	452	58.17
28-43	298	38.35
44-59	27	3.47

Source: Created by authors

5.2. Assessment of the Measurement Models

Following Anderson and Gerbing [71] guidance for SEM analysis, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were first conducted on SPSS and WarpPLS 8.0 correspondingly. These help to evaluate the convergent and discriminant validity of measurement properties for Perceived Ease of Use (PE); Perceived Usefulness (PU); Attitude Towards Using (AT); Behavioural Intention to Use (BI); Awareness of Consequence (AC); Ascription of Responsibility (AR); and Personal Norm (PN)- as latent variables used in our conceptual model. Regarding EFA results, we found seven factors emerged from principal factor as extraction method followed by a varimax rotation. Within each factor, all the measurement items are subjected to how they were allocated at the outset. In addition, all of factor loadings are greater than the threshold of 0.5. This proves the convergent and discriminant validity of the measurement properties.

On the other hand, CFA results of the seven-factor model as shown in Table 3 indicate that all factor loadings for each construct are statistically significant and larger than 0.6. This further affirms the convergent validity of their measurement scales.

Table 3. Confirmatory factor analysis results

Construct scale items	Mean	Standard deviation	Factor loading
PU1	4.004	0.938	0.851
PU2	4.055	0.982	0.863
PU3	3.794	0.959	0.855
PU4	3.905	0.946	0.858
PU5	3.909	0.956	0.917
PE1	2.979	1.104	0.864
PE2	2.992	1.116	0.880
PE3	2.959	1.201	0.839
PE4	2.928	1.095	0.930
AR1	3.915	0.797	0.828
AR2	3.892	0.744	0.853
AR3	3.785	0.906	0.757
AR4	4.122	0.838	0.774
AC1	3.439	0.976	0.848
AC2	3.561	0.920	0.877
AC3	3.696	0.877	0.864
AC4	3.591	0.908	0.870
AT1	3.480	0.912	0.854
AT2	3.565	0.855	0.883
AT3	3.384	0.828	0.852
PN1	3.940	0.859	0.805
PN2	3.760	0.818	0.780
PN3	3.770	0.750	0.750
BI1	3.430	0.956	0.867
BI2	3.390	0.967	0.883
BI3	3.602	0.891	0.72

Source: Created by authors

Next, a discrimination test results yielded from WarpPLS 8.0 further shows that Average Variance Extracted (AVE) indicators of each construct are all are greater than not only the cut-off value of 0.5 [71,72] but also the squared values of correlations between constructs in the seven-factor model. The discriminant validity of measurement scales are, therefore, further affirmed. Finally, we evaluate the reliability of the measurement properties through the calculation of Cronbach's Alpha coefficients in SPSS. The reliability test results in Table 4 show that all Cronbach's alpha values exceed the threshold value of 0.7. This indicates acceptable internal consistency among items used to measure the same construct.

Table 4. Average Variance Extracted and discrimination test

	PU	PE	BI	AR	AC	AT	PN	Cronbach's Alpha
PU	**0.869**	0.095	0.367	0.508	0.369	0.326	0.137	0.919
PE	0.095	**0.879**	0.154	0.058	0.083	0.183	0.073	0.9
BI	0.367	0.154	**0.827**	0.454	0.483	0.459	0.206	0.767
AR	0.508	0.058	0.454	**0.804**	0.467	0.38	0.129	0.812
AC	0.369	0.083	0.483	0.467	**0.865**	0.54	0.106	0.887
AT	0.326	0.183	0.459	0.38	0.54	**0.863**	0.184	0.828
PN	0.137	0.073	0.206	0.129	0.106	0.184	**0.779**	0.675

Source: Created by authors

5.3. Hypothesis testing

Given the complexity of the conceptual model with both direct and indirect effects, PLS-based structural equation modelling analysis was conducted on WarpPLS 8.0. The estimation results as shown in Table 4 indicate that the hypothesised model explains 37.2% of the variances in the dependent variables (i.e. AT, AR, PU, PN, and BI collectively) with no significant collinearity issues found. Additionally, all model-fit indicators are within the acceptable range (see Table 4).

Table 4. Hypothesis testing for the whole sample

Construct path	Coefficient
AC→AR	0.474**
AC→AT	0.466**
PU→AT	0.127**
PE→ AT	0.185**
PE→ PU	0.152**
AC →PN	0.06*
AR →PN	0.124**
AT →BI	0.441**
PN →BI	0.144**

*Notes: *p<0.05; **p<0.001;*   *Source: Created by authors*

The SEM analysis results show that awareness of consequence could significantly contributes to the formation of the ascription of responsibility, and both together positively and significantly shape personal norms. On the other hand, perceived usefulness could be significantly facilitated by perceived ease of use, and both together significantly shape attitudes towards PBRS. However, the attitude towards bike-sharing programs is more influenced by awareness of the consequence of pro-environment behaviours among the tourists themselves. Both attitudes towards PBRS and personal norms, in turn, significantly motivate tourists' intention to use PBRS during their travel time. Hence, all nine proposed hypotheses are confirmed.

6. DISCUSSION AND IMPLICATIONS

In line with the findings from Li et al. [8], Lu et al. [9], and Taherdoost et al. [51], hypotheses H1, H2, H3, and H4 are confirmed. The participant's PE and PU of PBRS produce positive impacts on their attitude toward using the services. It is implied that tourists can be interested in using PBRS by enhancing their experience with e-service, provided through the mobile application, and improving their travel efficiency in terms of cost, time, health, and convenience. Also, tourists' AT positively and significantly affects their behavioural intention to use PBRS. This finding is in line with that from the work of Li et al. [8], suggesting there is a correlation between attitude and intention. PBRS like TNGo is becoming the main mode of transportation at city destinations, if tourists can retain their positive attitude toward the services, they are more likely to engage in continuous usage of PBRS during each visit. Therefore, it is suggested that TNGo should keep on upgrading both the products (the bike) and e-service (mobile platform) to tourist's preferences. Along the same line, the company and the governing body at each city destination should work hand-in-hand in optimizing the docking station of TNGo in terms of location and capacity. By doing so, tourists' PE and PU toward TNGo will be enhanced, maintaining a positive attitude toward and behavioural intention to use the services.

As previously proven in the works of Steg & De Groot [52], Han [53], and Han et al. [54], this study's finding suggests the strong impacts of AC on PN (hypothesis 5). In other words, tourist's moral commitment to pro-environmental behaviours is correlated with their awareness of their travelling's consequences. In the case of this study, AC can trigger PN in choosing certain modes of transportation at the tourist destination. In line with with the findings of Gao et al. [55], the positive effects of AC on AR (hypothesis 6), and AR on PN (hypothesis 7) are also validated. It can be implied that when tourists are aware of the consequences of using/not using PBRS, they will gain a sense of responsibility for such consequences. Based on that, tourists will develop the moral sense of commitment to use or not to use certain modes of transportation.

In agreement with the outcomes in the works of Savari [56], SEM results suggested that PN creates strong and positive impacts on tourist behavioural intention to use PBRS (hypothesis 8). In this research, PN implies the comparative tourist's perceived righteousness and unrighteousness of their behaviour at the city destinations [73]. Thus, if tourists perceived the use of PBRS as right, they would be more likely to employ that service when travelling between tourist hotspots [40]. Combining with the confirmed hypothesis 5, it can be concluded that tourists' AC positively affects BI through PN. Statistical results from SEM analysis also confirmed the significant and positive relationship between tourists AC and their attitude towards PBRS usage (confirmed hypothesis 9). Such findings are in line with those from the works of Ren et al. [64], Palomino and

Barcellos-Paula [65], Araos [66], and Fauzi et al. [67]. Thus, tourist attitudes toward the usage of PBRS are regulated by their awareness of the environmental consequences of using/not using PBRS. Combining with the previously confirmed hypothesis 4, it can be summed up that tourists' AC positively influences BI through AT.

Significantly, among overall behavioural patterns of tourists' behavioural intention toward PBRS, awareness of consequence has been found to produce the strongest influence on their attitude toward PBRS usage. Therefore, gaining knowledge of the environmental effects of travelling behaviours is the stepping stone for the execution of actually responsible tourism practices from a tourist's perspective [74]. PBRS is a part of the Vietnam government's long-term plan to develop sustainable tourism cities. To increase PBRS usage among domestic tourists, the government has widely communicated its utilities (PU) and service (PE) while leaving its positive environmental impacts hidden. Based on the findings mentioned above, the attention should be turned towards building up tourist's awareness of the environmental consequences of using/not using PBRS. To do that, statistical results on the harmful effects of using transportation relying on fossil fuel during a trip must be studied and disclosed to the public. More importantly, investigations on the positive environmental impacts of using PBRS must be carried out and communicated among the Vietnam population regularly.

7. CONCLUSION

In this research, an integrated model of TAM and NAM was constructed to explain tourist intention to use public bike rental services. Perceived usefulness and perceived ease of use produce positive and direct influences on the attitude toward using PBRS, which in turn, directly affects behavioural intention to use the service. Awareness of environmental consequences also produces positive and indirect impacts on behavioural intention through the personal norm and attitude toward using. Among PE, PU, and AC, awareness of consequences has the most significant influence on attitude toward using and thus, behavioural intention to use PBRS.

There are several contributions taken from this research. First, this research among the first combining TAM and NAM frameworks to investigate tourists' behaviours toward the usage of smart shared-bike services. Also, the integrated model of TAM and NAM has a moderate explanatory rate (R^2 = 37.2%), implying that it can be employed to explain tourist's behavioural intention to use PBRS. Third, this research offers some advice to promote the usage of PBRS amongst domestic tourists in Vietnam.

This study possesses two distinct limitations caused by the research scope. First, the SEM analysis only includes constructs taken from NAM and TAM. Future works should consider other potentials connected with tourist's backgrounds including length-of-stay, spending level, visiting purpose, etc. for more thoughtful insights. Also, the data was

collected only among domestic tourists. Whether similar research findings can be found with data gathered from international tourists visiting Vietnam requires further study.

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THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY (CSR) IN TOURISM ON TOURISTS' ATTITUDES: A CASE STUDY IN DA LAT CITY

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Abtract: *This study explored the impact of Corporate Social Responsibility (CSR) on the attitudes of tourists in Dalat City, Vietnam. The study found that CSR has a positive impact on the attitudes of tourists, but this impact is indirect. CSR can help businesses improve customer satisfaction and corporate reputation, which in turn can lead to more positive attitudes among tourists. This study collected and consolidated responses from customer survey forms and then input this data into IBM SPSS Statistics 26 software. Then, author tested the reliability of Cronbach's Alpha and EFA through IBM SPSS Statistics 26 software and tested model fit CFA. Additionally, structural equation modeling (SEM) is carried out by the author using IBM SPSS AMOS 20 software to test the research hypothesis and further analyze the data. The study's findings suggest that tourism businesses should focus on implementing CSR initiatives in order to improve the attitudes of tourists. By doing so, businesses can create a more positive and sustainable tourism experience for both tourists and the local community.*

Keywords: *Corporate Social Responsibility (CSR); customer Satisfaction (CS); corporate Reputation (CR); Tourist's Attitude (TA).*

Tóm tắt: *Nghiên cứu này tìm hiểu tác động của Trách nhiệm xã hội doanh nghiệp (CSR) đến thái độ của khách du lịch tại thành phố Đà Lạt, Việt Nam. Nghiên cứu cho thấy CSR có tác động tích cực đến thái độ của khách du lịch, nhưng tác động này là gián tiếp. CSR có thể giúp doanh nghiệp cải thiện sự hài lòng của khách hàng và danh tiếng doanh nghiệp, từ đó có thể dẫn đến thái độ tích cực hơn đối với khách du lịch. Nghiên cứu này thu thập và tổng hợp các câu trả lời từ các mẫu khảo sát khách hàng, sau đó nhập dữ liệu này vào phần mềm IBM SPSS Statistic 26. Sau đó, tác giả kiểm định độ tin cậy của Cronbach's Alpha và EFA thông qua phần mềm IBM SPSS Statistic 26 và kiểm định mô hình phù hợp CFA. Ngoài ra, tác giả thực hiện mô hình hóa phương trình cấu trúc (SEM) bằng phần mềm IBM SPSS AMOS 20 để kiểm tra giả thuyết nghiên cứu và phân tích sâu hơn dữ liệu. Kết quả nghiên cứu cho thấy các doanh nghiệp du lịch nên tập trung thực hiện các sáng kiến CSR để cải thiện thái độ của khách du lịch. Bằng cách đó, các doanh nghiệp có thể tạo ra trải nghiệm du lịch tích cực và bền vững hơn cho cả khách du lịch và cộng đồng địa phương.*

Từ khóa: *Trách nhiệm xã hội của doanh nghiệp (CSR); sự hài lòng của khách hàng (CS); danh tiếng doanh nghiệp (CR); thái độ của khách du lịch (TA).*

1. INTRODUCTION

In the modern era, tourism is an economic sector and positively contributes to culture, the environment, and societal development. However, the rapid growth of the tourism industry also presents various challenges related to environmental protection, preservation of

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local culture, and ensuring the benefits of the local community. Corporate Social Responsibility (CSR) in the tourism industry has emerged as a response to some of these challenges. CSR focuses not only on profit but also on ensuring the sustainability of the tourism industry for the future. There are a number of factors that have driven the increase in interest in CSR in the tourism industry. One factor is the increasing awareness of the importance of sustainable development. Tourism businesses recognize that they need to implement CSR to contribute to the sustainable development of the industry. Another factor is the increasing demand of tourists. Tourists are increasingly socially and environmentally conscious. They want to travel to destinations that are socially and environmentally responsible.

Studying the impact of CSR on tourist's attitudes and decisions is becoming an essential research area. Dalat, a popular tourist destination in Vietnam, has witnessed active participation by tourism businesses in implementing CSR. However, there is still a limited amount of serious research on how CSR affects the attitudes and decisions of tourists in Dalat. Therefore, this study will focus on analyzing the influence of CSR on the travel decisions and attitudes of tourists in Dalat.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. The Concept of Corporate Social Responsibility (CSR)

Corporate Social Responsibility (CSR) has garnered significant attention in academic and business circles. CSR is often defined as a business's ethical and voluntary actions to contribute to society's and the environment's well-being beyond its core economic activities (Carroll, 1979). In the tourism industry, CSR initiatives can encompass various dimensions, including environmental sustainability, community engagement, and ethical business practices (Henderson, 2007).

According to The World Tourism Organization (UNWTO) report on "Corporate Social Responsibility in Tourism". The report highlighted the importance of CSR for the tourism industry, including: Promoting sustainable development, creating socio-economic benefits for local communities, strengthening the reputation of the tourism industry, and promoting sustainable development. The UNWTO report concluded that CSR is essential for the sustainable development of the tourism industry. By promoting sustainable development, creating socio-economic benefits for local communities, and strengthening the reputation of the tourism industry, CSR can help to make tourism a more positive force for the world.

2.2. The Impact of CSR on Tourist Attitudes and current trends of CSR

Several studies have explored the relationship between CSR initiatives in the tourism sector and tourist attitudes and behavior. For instance, a study by (Kim Han, 2017) found that tourists are likelier to choose destinations and businesses that demonstrate a commitment to CSR. Moreover, CSR activities, such as environmental conservation and

community engagement, have positively influenced tourist's perceptions of the destination and their willingness to engage in sustainable practices (Gössling *et al.*, 2012).

2.3. Benefits of CSR in Tourism

Tourism CSR activities contribute to improving a business's brand reputation (Kim & Chua, 2015). Positive perceptions of a company's commitment to social and environmental responsibility can enhance customer brand loyalty. When travelers perceive a company as socially responsible, they are more likely to return and become advocates, which can translate into repeat business and word-of-mouth referrals with direct economic implications. Implementing CSR practices in tourism can result in cost savings and operational efficiency (Font *et al.*, 2012). For example, energy-efficient measures, waste reduction, and responsible resource management reduce a business's environmental footprint and lower operational expenses. Over time, these cost savings can positively impact a company's profitability.

2.4. Research hypothesis

According to a study by Kim, J., Lee, S., & Lee, Y. (2016) surveyed 500 tourists in South Korea and found that Corporate Social Responsibility (CSR) has a positive impact on tourist satisfaction. The research indicates that tourists highly appreciate tourism businesses engaged in CSR activities that focus on areas such as environmental protection, support for local communities, and sustainable development. This study also reveals that tourists tend to have a more positive attitude towards travel destinations and tourism businesses if they are satisfied with their travel experiences.

Based on study by Li, Z., Chen, Y., & Chen, Y. (2018) surveyed 200 tourists in China and found that Corporate Social Responsibility (CSR) has a positive impact on tourist satisfaction. The research indicates that tourists tend to be more satisfied with tourism businesses that carry out CSR activities transparently and measurably. Those lead to Hypothesis 1 and Hypothesis 2

Hypothesis 1 (H1): Corporate Social Responsibility (CSR) activities in the tourism industry in Da Lat has positive impact on customer's satisfaction with tourism businesses.

Hypothesis 2 (H2): The level of customer satisfaction influences tourist's overall attitudes when traveling in Da Lat positively.

Albers, M. V., & Mazanec, J. A. (2011) indicate that Corporate social Responsibility (CSR) has become an increasingly important issue for businesses in all industries, including the tourism industry. This study explores the relationship between CSR and reputation in the tourism industry. The results of the study show that CSR has a positive impact on reputation. Specifically, the study found that tourists have a more favorable impression of tourism companies that engage in CSR activities. The study also found that CSR is more important for reputation than financial performance. The study by Deng, J., & Zhang, Y.

(2013) investigates the impact of corporate social responsibility (CSR) on reputation in the tourism industry using data from China. The results of the study show that CSR has a positive and significant impact on reputation. The study also found that the effect of CSR on reputation is mediated by trust. This suggests that coporate reputation can enhance tourists attitudes by building reputation with CSR. Those lead to Hypothesis 3 and Hyphothesis 4 as follows:

Hypothesis 3 (H3): Corporate Social Responsibility (CSR) affects the reputation of tourism corporations in the Da Lat City in the positive way.

Hypothesis 4 (H4): The reputation of tourism corporations in Da Lat has a positive impact on tourists' attitudes.

Munar, A. M., & Font, X. (2012) examine the impact of corporate social responsibility (CSR) on tourist satisfaction and loyalty in the hospitality industry. The results of the study show that CSR has a positive and significant impact on both satisfaction and loyalty. The study also found that the effect of CSR on satisfaction and loyalty is mediated by perceived value. This suggests that CSR can enhance satisfaction and loyalty by creating a perception of value for tourists. This leads to Hypothesis 5 (Figure 1).

Hypothesis 5 (H5): Customer perception of corporate social responsibility has a positive impact on the attitudes of tourists.
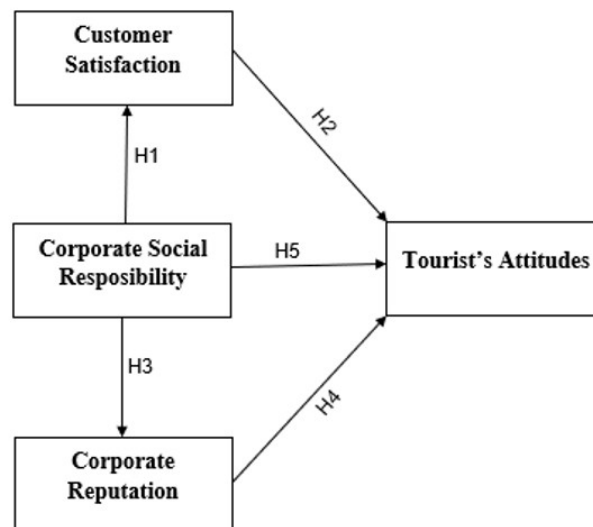

Figure 1. Proposal research model

3. RESEARCH METHODOLOGY

This study aims to identify and assess the impact of Corporate Social Responsibility (CSR) initiatives in the tourism industry in Da Lat on tourist's attitudes. The study specifically aims to explore the relationship between CSR in tourism and tourist's attitudes

towards Da Lat. This objective seeks to provide insights into the role of CSR in enhancing tourist's experiences and fostering satisfaction and trust as they explore Da Lat.

Primary data is collected through a survey from Google Forms. Secondary data is collected from many sources such as official newspapers of provinces, youth newspapers, UNWTO, Datareportal, Outbox Insight, Vietnam Tourism Law 2017, and other research articles. This research comprises individuals who reside and work in Ho Chi Minh City and have previously traveled to Da Lat City. The survey is conducted in Ho Chi Minh City from September 2023 to November 2023.

The primary research approach utilized in this study is quantitative research, which involves conducting a survey via Google Forms to collect responses from individuals residing in Ho Chi Minh City. These gathered responses will be used to examine and test the research hypotheses. As Hair *et al.* (2014) suggested, having a ratio of at least five observations for every variable is recommended. Given that, the survey questionnaire comprises a total of 24 questions, the minimum required number of responses would be 24 x 5 = 120. However, the author opted for a larger sample size, ultimately obtaining 277 valuable responses.

Determining the significance of the five proposed theories, the author applied inductive statistical methods, Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM).

4. DATA ANALYSIS AND RESULTS

In recent years, there have been significant advancements in CSR within the tourism industry in Da Lat. These advancements are driven by several factors, increasing demand from tourists for sustainable and responsible tourism experiences, growing recognition among businesses of the benefits of CSR, such as improved reputation, increased customer loyalty, and enhanced risk management, government policies and regulations that encourage and support CSR practices in the tourism sector. As a result of these factors, CSR has become a key differentiator for tourism businesses in Da Lat. Businesses that are able to demonstrate their commitment to CSR are more likely to attract tourists, investors, and partners.

In addition to individual CSR initiatives, there are also a number of industry-wide CSR initiatives in Da Lat. One of the most notable examples is the Da Lat Sustainable Tourism Initiative. This initiative was launched by the Da Lat Tourism Association (DLTA) in 2015 to promote sustainable tourism practices in Da Lat. The Da Lat Sustainable Tourism Initiative includes a number of different components like a CSR certification program for tourism businesses, a training program for tourism businesses on CSR practices, and a marketing campaign to promote sustainable tourism in Da Lat. Growing Popularity of Eco-Tourism and Responsible Tourism Packages, recently there has also been a growing demand for eco-tourism and responsible tourism packages in Da Lat.

These packages offer tourists the opportunity to experience Da Lat in a sustainable and responsible way; a number of tourism businesses in Da Lat offer eco-tourism and responsible tourism packages. These packages typically include activities such as hiking and trekking in the mountains, visiting local farms and villages, and learning about traditional Vietnamese culture.

4.1. Empirical Results

4.1.1. Descriptive statistics

The study used descriptive statistics to explain and understand the input problem of the data. The primary demographics in the study were measured through gender, age, income, and educational level. The answers were collected by sending a questionnaire via Google Forms and receiving an email for each question to minimize the possibility of a participant responding multiple times. The total number of responses was 300 based on the selection of the number of responses proposed in the research methodology. After collection and checking, the number of valid responses was 277, and invalid responses was 23.

Result provides information collected from 277 valid samples, of which 137 are male, and 140 are female, with a ratio of 49.5% and 50.5%, respectively. The results show that gender will not significantly affect the results, ensuring high objectivity for the survey items.

In terms of age, the research results show that the survey respondents aged 21 to 30 are the most numerous, with 170 participants accounting for 61.4% of the total number of responses. Next is the target group under the age of 21, with 41 responses, corresponding to 14.8%. The 31 to 40 and 41 to 50 age groups have a response rate that is nearly the same, respectively, 29 and 21, corresponding to 10.5% and 7.6%. Finally, people over the age of 51 have the lowest response rate, with 16 responses, corresponding to 5.8%. The results show that people aged 21 to 30 are the age group that is easy to access and interested in this research topic. In addition, this group also has the ability to access and update online information faster than other groups.

Most of the survey questions were distributed to people living and working in Ho Chi Minh City, the economic center of Vietnam. Hence, the income level also has a significant difference. The percentage of people with an income below 3 million is 15.2% (42 responses), and the percentage of people with an income of 3 to 5 million is 20.6% (57 responses). For people with an income of 5 to 10 million, there are about 93 responses, with 33.6%, and finally, the percentage of people with an income above 10 million is 30.7% (85 responses).

Finally, about the educational level of the surveyed subjects, it shows that most of the respondents have a high level of education, with the highest proportion of the survey subjects being university students with 173 responses, equivalent to 62.5%. This shows the

consistency with the results in the age group from 21 to 30. There are about 49 responses from respondents who are postgraduates, with 17.7%. Finally, the number of respondents who are high school students, college or intermediate are 28 and 27, respectively, corresponding to 10.1% and 9.7%.

4.1.2. Assessing the reliability of the scale

The purpose of Cronbach's Alpha reliability analysis is to remove ineligible observation variables. The table shows that the correlation results between the total variable of all observation variables are more significant than 0.3. In addition, the Cronbach's Alpha analysis shows that all scales have a Cronbach's Alpha coefficient above 0.6 and less than 0.95. The reliability results are entirely in line with the criteria for a composite reliability coefficient of greater than 0.6 (Hair *et al.*, 2009). Specifically:

Four observation variables measured the customer satisfaction scale. The Cronbach's Alpha coefficient is $0.787 > 0.6$, so it can be concluded that the scale has high reliability. In addition, all observation variables have a corrected item-total correlation coefficient greater than 0.3. Therefore, no observation variable is excluded. After evaluating the reliability of the scales, including Customer satisfaction, Corporate social responsibility, Corporate Reputation, and Tourist Attitude, these factors will continue to be tested through EFA (exploratory factor analysis).

4.1.3. Exploratory Factor Analysis (EFA)

After evaluating the reliability of the scales using Cronbach's Alpha coefficient, the study continued to perform an exploratory factor analysis (EFA) to reduce a set of multiple observation variables into a smaller number of meaningful factors. Because the study has latent variables that play the role of dependent variables. Therefore, the author chose to perform EFA for each dependent variable. The results of EFA are shown the output of EFA analysis of the Customer Satisfaction scale, the values of KMO = $0.772 > 0.5$; sig Barlett's Test = $0.000 < 0.05$ and Eigenvalue = $2.457 > 1$ demonstrate that this EFA output is consistent. At the same time, the Total Variance Explained reaches $61.421 > 50\%$. Four observed variables in the component group explain 61.421 of the variation in the observed variables. In addition, the loading factor of 4 observed variables is > 0.5 and is packed into a single unit. This demonstrates that the observed variables converge rather well and that the scale guarantees unidirectionality.

Moreover, the outcome of EFA analysis of the Corporate Social Responsibility scale that the values of KMO = $0.860 > 0.5$; sig Bartlett's Test = $0.000 < 0.05$ and Eigenvalue = $3.531 > 1$ demonstrate that the result of EFA is consistent. The component group's seven variables account for 61.421% of the total variation on the observed variables, as indicated by the Total Variance Explained, $61.421\% > 50\%$. Furthermore, the loading factor of 7 observed variables is > 0.5 and is packed into a single unit. This demonstrates that the observed variables converge rather well and that the scale guarantees unidirectionality.

Then illustrates the outcome of EFA analysis of the Corporate Reputation scale in which the values of KMO = 0.765 > 0.5; sig Bartlett's Test = 0.000 < 0.05 and Eigenvalue = 2.410 > 1 demonstrate that the result of EFA is consistent. The component group's four variables account for 60.259% of the total variation on the observed variables, as indicated by the Total Variance Explained 60.259% > 50%. Furthermore, the loading factor of 4 observed variables is > 0.5 and is packed into a single unit. This demonstrates that the observed variables converge rather well and that the scale guarantees unidirectionality.

Finally, about the outcome of EFA analysis of the Tourist Attitude scale; the result shows that the values of KMO = 0.780 > 0.5; sig Bartlett's Test = 0.000 < 0.05 and Eigenvalue = 2.543 > 1 demonstrate that the result of EFA is consistent. The component group's four variables account for 63.563% of the total variation on the observed variables, as indicated by the Total Variance Explained 63.563% > 50%. Moreover, one component contains four observed variables from the Tourist Attitude scale, all of which has factor loadings greater than 0.5. This demonstrates that the observed variables converge rather well and that the scale guarantees unidirectionality.

4.2. Structural Equation Modelling (SEM) analysis

4.2.1. Reliability
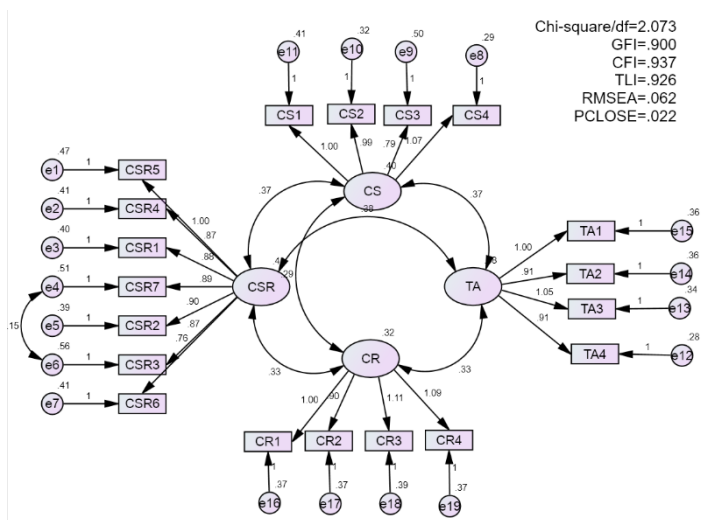
Confirmatory factor analysis (CFA) is required in order to test the model fit as well as the overall fit of the data, the accuracy of the observed variables, etc. The following is how the CFA findings are displayed in Figure and table: RMSEA = 0.062 ≤ 0.08; PCLOSE = 0.022 ≥ 0.05; GFI = 0.900 ≥ 0.9; CFI = 0.937 ≥ 0.95; TLI = 0.926 ≥ 0.9; CMIN/df = 2.073 ≤ 3 (Hu, Bentler, 1999; Hair, 2010). Consequently, there is consistency across all CFA result metrics.

4.2.2. Structural Equation Modelling (SEM)

The model's degree metrics have been exhibited and proven appropriate through Table and Figure. The following are examples of acceptable criteria for indicators: CMIN/df = 2.060 < 3; GFI = 0.9 ≥ 0.9; CFI = 0.937 ≥ 0.9; RMSEA = 0.062 ≤ 0.08; PCLOSE = 0.25 > 0.05. It is determined that the research model satisfies the standards set out by Hu and Bentler (1999). As a result, the validity of the research model may be claimed.

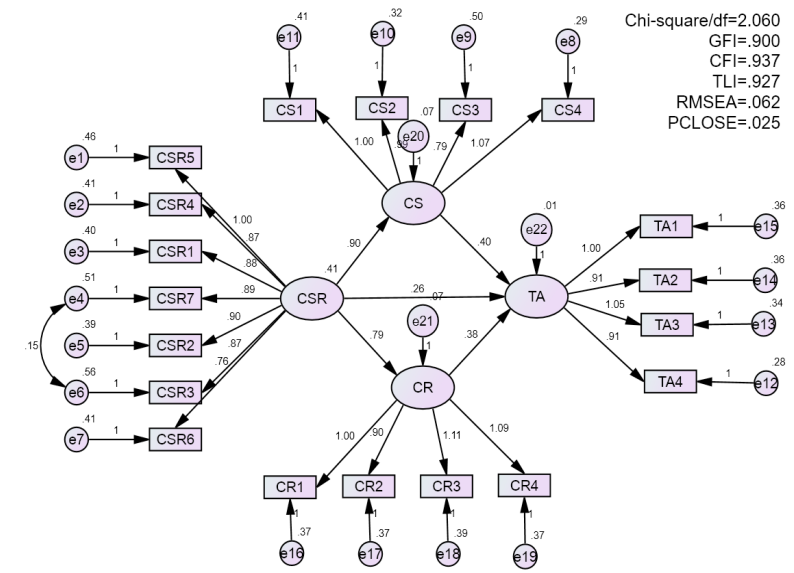### 4.2.3. Testing the research hypothesis using the SEM model

Table 1. SEM Result

Hypothesis	Estimates	S.E	C.R	P	Conclusion
CSR → CS	.898	.090	9.947	***	Supported
CSR → CR	.791	.083	9.535	***	Supported
CSR → TA	.265	.220	1.205	.228	Not Supported
CS → TA	.404	.156	2.588	.010	Supported
CR → TA	.378	.156	2.425	.015	Supported

*Note: *** < 0.05*

(Source: Data analysis)

The results of the SEM analysis in Table 1 show that 4 out of 5 research hypotheses are supported. The relationship between corporate social responsibility (CSR) and tourist's attitudes, mediated by customer satisfaction, has the highest level of interaction. Specifically:

Hypothesis 1 (H1): Corporate Social Responsibility (CSR) activities in the tourism industry in Da Lat has positive impact on customer's satisfaction with tourism businesses

is accepted according to SEM results, sig = 0.000 < 0.05. Therefore, this hypothesis is accepted because it has a standard level of statistical significance. The hypothetical estimate of 0.898 indicates that the relationship is strong. This suggests that CSR can enhance customer satisfaction in the tourism industry in Da Lat.

Hypothesis 2 (H2): The level of customer satisfaction influences tourist's overall attitudes when traveling in Da Lat positively is accepted because the sig value of 0.010 < 0.05 indicates that the relationship is statistically significant. The statistical analysis found a positive relationship between customer satisfaction and tourist attitude, with an estimated coefficient of 0.404. This indicates that customer satisfaction is a relatively stable and important factor in influencing tourist attitudes.

Hypothesis 3 (H3): Corporate Social Responsibility (CSR) affects the reputation of tourism corporations in the Da Lat City in the positive way is accepted according to SEM result, sig = 0.000 < 0.05. This means that the hypothesis that CSR has a positive impact on corporate responsibility is accepted. The hypothetical estimate of 0.791 indicates a strong relationship between the two factors. This shows that the CSR has a significant influence on the Corporate Responsibility.

Hypothesis 4 (H4): The reputation of tourism corporations in Da Lat has a conductive impact on tourists' attitudes is accepted because, according to SEM results, sig = 0.015 < 0.05. Therefore, the hypothesis that corporate responsibility affects tourist's attitudes is accepted because the statistical significance level is standard. The estimated effect size of 0.378 indicates that the relationship between the two factors is moderate.

Hypothesis 5 (H5): Customer perception of corporate social responsibility has a positive impact on the attitudes of tourists is not accepted because, according to SEM results, sig = 0.228 > 0.05. Therefore, this hypothesis is rejected because it needs a satisfactory level of statistical significance.

Since hypothesis 5 was rejected, it can be concluded that the hypothesis of the positive impact of CSR perception on the attitude of tourists is only sometimes true. This is in line with some previons research results of authors suchas Lulu (2011) Tian (2011) and Castaldo *et al* (2009). There are other factors that can affect the attitude of tourists, such as price, service quality, and customer values. In addition, the author believes that the impact of CSR perception on the attitude of tourists may depend on the type of CSR activities and the extent to which those activities are aligned with customer values. For example, CSR activities related to environmental protection or community may be more appreciated by tourists than CSR activities related to cost reduction or profit increase. Tourism businesses should consider these factors when carrying out, such as price, service quality, and corporate reputation. When the other factors are important to tourists, the impact of CSR may be limited to CSR activities in order to achieve maximum effectiveness.

5. DISCUSSIONS

5.1 Theoretical and practical contributions

Tourism is a significant economic sector in many countries, including Vietnam. In Da Lat, tourism is a particularly important industry, accounting for a significant portion of the city's economy. The tourism industry plays an important role in promoting economic development, job creation, and improving the quality of life of the people. However, tourism can also negatively impact the environment, community, and society.

Corporate social responsibility (CSR) is a concept that refers to the activities that businesses undertake to benefit society in addition to their profit-making activities. CSR can be undertaken in a variety of areas, including tourism. Promoting CSR in the tourism industry of Da Lat is important for the following reasons:

Protecting the environment: CSR can help tourism businesses reduce their negative impact on the environment, such as reducing pollution, using resources efficiently, and conserving biodiversity. Da Lat is a beautiful city with a unique natural environment. CSR can help to protect this environment for future generations.

Developing the community: CSR can help tourism businesses contribute to the development of the local community, such as supporting education, healthcare, and other social activities. Da Lat is home to a diverse population of people from different backgrounds. CSR can help to promote social inclusion and cohesion.

Improving the rights of workers: CSR can help tourism businesses ensure the rights of workers, such as paying fair wages, ensuring occupational safety, and creating a friendly work environment. Da Lat is a popular destination for young people seeking employment. CSR can help to ensure that these workers are treated fairly and have a safe and healthy work environment.

5.2 Limitations

Firstly, the study's small sample size was conducted on a small sample of tourist customers in Vietnam, with 300 participants. This sample may only be representative of some tourists, especially tourists from different countries. To address this limitation, future studies should be conducted on a larger sample, including tourists from multiple countries. This will help ensure that the study results are applicable to a broader range of tourists.

Secondly, the research method is used because the study used a survey to collect data. This method can be affected by factors such as respondent bias and measurement errors. Future studies should use different data collection methods, such as face-to-face interviews or quantitative research, to address this limitation. This will help to minimize the impact of biasing factors on the study results.

5.3. Conclusion

This study explored how Corporate Social Responsibility (CSR) indirectly affects the attitudes of tourists in Dalat City through the factors of Customer Satisfaction (CS) and Corporate Reputation (CR). The results of the study showed that CSR, CS, and CR all have an impact on the attitudes of tourists, but CSR has an indirect impact through CS and CR. CSR is a set of activities that businesses undertake on a voluntary basis, beyond legal obligations and industry standards, to generate benefits for the economy, society, and the environment. CSR can be expressed in many different ways, such as using environmentally friendly products and services, supporting community activities, or providing opportunities for tourists to participate in CSR activities of the local community in Dalat City.

CS and CR of the tourism industry in Dalat City have a positive impact. When tourists are satisfied with the product or service they receive, they have a positive view of the business and the tourist destination they have experienced in Dalat City. This is because CS and CR are expressed as a form of commitment of the business to the quality of the product or service, making tourists feel that the businesses in this city are genuinely interested in the interests of customers.

In addition, through the study, the author also proved that CSR can affect CS and CR in many different ways. It can help businesses provide high-quality products and services that meet customer needs; this will help businesses improve customer satisfaction (CS). Build and maintain the reputation of the business, and this will help businesses increase customer trust (CR). In addition, CSR can affect the attitudes of tourists in two main directions: directly and indirectly. Directly, CSR can help tourists have a more positive view of the business and the tourist destination, including the cultural, historical, and environmental values of the locality. Indirectly, CSR can help businesses improve CS and CR, which in turn will have a positive impact on the attitudes of tourists.

This study has shown that CSR has a positive impact on the attitudes of tourists in an indirect way. This proves that tourism businesses need to focus on CSR implementation so that tourists can be aware of the definition of CSR and understand it in order to improve the attitudes of tourists towards the tourism industry in Dalat City.

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INTEGRATION OF SOCIAL NETWORK INTO CUSTOMER RELATIONSHIP MANAGEMENT SYSTEM IN SMALL AND MEDIUM TOURISM ENTERPRISES

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Abstract: *Industrial Revolution 4.0 has a strong impact on the tourism industry and the business activities of tourism enterprises. The role of social networks is growing, especially for communication activities and customer relationship management (CRM). For tourism enterprises, using social networks in CRM has many benefits, but it comes with many limitations, the content and methods are poor, the investment is insignificant, and it is not attractive enough to attract customers. With the opportunities and challenges from the 4.0 Industrial Revolution, through researching a number of domestic and foreign scientific works, the article presents some discussions showing the needs to integrate social networks into the CRM system of small and medium-sized tourism enterprises.*

Keywords: *Social networks, customer relationship management (CRM), small and medium-sized tourism enterprises.*

Tóm tắt: *Cách mạng công nghiệp 4.0 tác động mạnh mẽ đến ngành du lịch, đến hoạt động kinh doanh của các doanh nghiệp du lịch. Vai trò của mạng xã hội ngày càng lớn, đặc biệt là đối với hoạt động truyền thông và quản trị quan hệ khách hàng (customer relationship management - CRM). Đối với các doanh nghiệp du lịch thì việc sử dụng mạng xã hội vào quản trị quan hệ khách hàng có nhiều lợi ích song đi kèm là rất nhiều hạn chế, nội dung và phương thức còn nghèo, đầu tư không đáng kể, chưa hấp dẫn thu hút khách hàng. Với những cơ hội và thách thức từ Cách mạng công nghiệp 4.0, thông qua nghiên cứu một số công trình khoa học trong và ngoài nước, bài viết đưa ra một số trao đổi cho thấy cần thiết phải tích hợp mạng xã hội vào hệ thống quản trị quan hệ khách hàng của các doanh nghiệp du lịch nhỏ và vừa.*

Từ khóa: *Mạng xã hội, quản lý mối quan hệ khách hàng (CRM), doanh nghiệp du lịch nhỏ và vừa.*

1. INTRODUCTION

The 4.0 industrial revolution is having a strong impact on all aspects of the economy, changing the operating models of companies in most fields. The global tourism market is moving towards the trend of online travel business. In Southeast Asia, Google predicts that the value of online travel will increase from 22 billion USD in 2015 to 90 billion USD in 2025. Of which, online tourism in Vietnam accounts for 10%, equivalent to 9 billion USD.

According to market research group Euromonitor International, online travel sales revenue in Vietnam maintains a growth rate of 12% in the period 2015 - 2020, the internet

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access rate in Vietnam continues to increase. The rapid development of the internet along with the constant innovation of science and technology has contributed to moving the world into the digital age, while also creating an increasingly prosperous online business market with many trends, new direction and form. Enterprises no longer underestimate the role of Digital marketing in reaching target customers as well as building brands for enterprises and products. A recent study by Exact Taget on service products showed that 67% of customers trust advice and feedback about products and services, 45% of Internet users regularly create online content (blogs, videos, comments, slides, etc.), more than 1.2 billion articles on blogs every day.

Social networks being integrated into CRM systems are no longer new to enterprises in general and tourism enterprises in particular. If MySpace is a social networking site and the most popular and effective communication tool in the US, then Facebook is not only successful in the world but is also the strongest advertising social networking site in Vietnam. In the tourism sector, many large enterprises have strongly used social networks to attract customers. However, many small and medium-sized tourism enterprises pay little attention to integrating social networks into their CRM system. Research some scientific works on integrating social networks into CRM systems to have a newer perspective and more flexible use of social networks to attract customers and maintain customer loyalty client.

The article uses secondary data collected from reliable domestic and foreign information sources, analyzed and evaluated to confirm the role of integrating social networks into CRM in businesses. From there, it shows that this activity is truly necessary for small and medium-sized tourism enterprises in the 4.0 industrial revolution.

1.1. Concept of CRM system integrating social networks

CRM emerged as one of the most searched business terms in the late 1990s and early 2000s until now. Scholars have gradually agreed on the benefits of CRM systems, but the specific processes in implementing CRM and the scope of CRM use still have differences in different studies. From 2000 until now is the period of providing new concepts for CRM technology called "E-CRM". This is also the premise for a CRM system integrating social networks to be born and developed in recent years. From the theoretical study, three different approaches on the design of CRM system processes can be extracted as follows.

First, the definition of CRM processes is mainly the application of digital technologies in transactions with customers (Sivaraks, Krairit and Tang, 2011). In particular, CRM that integrates the Internet to perform its functions is attracting more and more attention (Feinberg and Kadam, 2002; Harrigan, Ramsey and Ibbotson, 2012). The fact that online platforms and the Internet are increasingly becoming the main interaction channel to help customers communicate with each other and with sellers, has led to the recent breakthrough development of e-CRM (Nguyen Van Thuy, 2017). Most retailers have websites or social

media pages that help provide some CRM functions such as customizing pages according to customer needs, search, member login, support interactions, etc. (Feinberg and Kadam, 2002). From this perspective, CRM or e-CRM is an information technology tool that supports the task of serving customers.

Second, CRM is a system of principles for strategic management (Ernst et al., 2011). In this approach, the main task of CRM is to set targets and provide data and information to identify key customer segments and allocate appropriate financial resources to each of these customer segments (Ryals, 2005). Another key aspect in this approach is about CRM's role in managing and exploiting customer information for strategic goals. The advancement of information technology is applied in analytical tasks such as creating data warehouses and data mining to support management decisions with customer behavioral patterns (Ernst et al., 2011).

Third, for CRM system implementation, emphasize the flexible characteristics of CRM implementation programs (Saarijärvi et al., 2013). Based on this approach, businesses will first have to decide the level of CRM implementation to choose the appropriate approach (Reinartz, Krafft and Hoyer, 2004). CRM processes can be designed at the following three levels: (1) implementation at the individual function level, (2) implementation at the customer service function level (3) implementation across the enterprise.

From the above perspectives, a social network-integrated CRM system (S-CRM) is defined as an integration between traditional CRM processes, systems and technologies in level of customer interaction with the growth of social networking applications to engage customers in interacting between customers and enterprises to enhance customer relationships (Trainor, 2012).

Along with the common goals of traditional information technology applications, the foundation of social network technology also serves as an indispensable premise in developing an S-CRM system. In addition to the common characteristics of social networking technology such as openness, connection and online interaction, social networking technology platforms can be divided into groups with different characteristics and purposes. For example, groups that apply social networking technology with the goal of connecting such as Facebook, Twitter, Linkedin, Youtube; social network technology group with the goal of 37 evaluating products and services such as TripAdvisor, Yelp; social networking technology groups such as Instagram, Slideshare, Flickr, Pinterest; Social networking technology groups that build online user communities such as SalesForce's Ideaforce and Igloo's Customer Community. With the development and widespread application of social networking technologies, online interaction channels through social networks have become the main interaction channel and are required by most customers. Especially young and social customer groups will be the main source of revenue for businesses now and in the future (Greenberg, 2010). Therefore, social

network technology will play a key role in implementing customer-oriented strategies for enterprises in the current period. In addition, to truly maximize the benefits of social network technologies, businesses need to equip themselves with social network data analysis technologies, big data processing or mining technologies. data to be able to take advantage of the rich source of social characteristic data from social network channels in interacting with customers. From there, businesses are better equipped and can improve the quality of their interactions with customers, turning customers into partners in creating sustainable common value.

In general, through social networking technologies, information will be processed and always transferred "multi-dimensionally" in many different ways between customers and enterprises, avoiding information being only "one-way" in the system. Traditional CRM: (1) customer social characteristics information is extracted "from" social networking platforms (from personal pages, links and transaction information); (2) personalized marketing messages and information are delivered "to" customers continuously through social networking platforms to build emotional connections (viral content or information to respond to comments and complaints); (3) information and knowledge on a private online community platform between enterprises and target customers to promote learning goals and cooperate "with" customers to jointly create common creative values.

In a new approach, S-CRM views customers as a partner to create common values for both enterprises and customers. Therefore, cooperation and collaboration are the two most mentioned concepts in studies on the relationship between customers and enterprises in the S-CRM system (Sigala, 2018; Greenberg, 2010). By using the power of the online connection system of social network web-based applications, enterprises can keep up with the level of interaction that "social customers" demand in their digital business environment. More importantly, businesses can take advantage of social networking platforms to extract unique customer characteristics, to update and personalize their products and services to each individual customer. The characteristic component of S-CRM that is most mentioned in research is the method of use and technology to extract "social profile information" from "social profile customers" based on individual websites and networks connected on social networking applications (Malthouse et al., 2013). This group of "social characteristic information" will provide a completely new perspective on customers that businesses often ignored or were unable to reach in the past.

Data about personal interests through expressions on personal pages or through two-way interactions with enterprises via social networks or activities in online communities will be a very valuable source of information for enterprises. It is worth noting that the processes in traditional CRM systems still serve as the foundation for CRM activities, but with "social information" and increased level and quality of customer interaction.

Significantly, customer relationship building activities will progress to a higher level than before (Malthouse et al., 2013; Baird and Parasnis, 2011).

1.2. Integrating social networks into the CRM system in small and medium-sized tourism enterprises

Small and medium-sized tourism enterprises often face more opportunities and challenges than large corporations. The specific difficulties of small and medium-sized enterprises compared to large enterprises may include a lack of resources, capacity and market influence (Carson, Cromie, McGowan and Hill, 1995). In general, small and medium-sized tourism enterprises may encounter related problems at the strategic level such as the inability to form cross-functional working groups to implement customer-oriented strategies; or problems at the management level such as not having enough knowledge management systems to facilitate the learning and development of human resources as well as business processes of small and medium-sized tourism enterprises (Doole, Grimes, and Demack, 2006; O'Dwyer et al., 2009). Another difficulty of small and medium-sized tourism enterprises is related to the lack of financial resources and this can greatly hinder development. Small and medium-sized enterprises businesses continuously face difficulties in accessing suitable and low-cost funding. Furthermore, these enterprises also have lower technical expertise (in financial analysis, product development, customer service), management skills (information and data management, financial planning). resources) and poor marketing compared to large enterprises (Doole, Grimes, and Demack, 2006; Zhang, Sarker, and McCullough, 2008).

However, small scale brings certain benefits to small and medium-sized tourism enterprises. The first benefit is longer employee engagement and this helps minimize the lack of knowledge management systems in small and medium-sized tourism enterprises. Second, small and medium-sized tourism enterprises can easily access and build relationships with customers, helping to support CRM implementation (Hills, Hultman and Miles, 2008). Finally, with their small scale, small and medium-sized tourism enterprises are very flexible to changes in the market when needed (Kocak and Abimbola, 2009; O'Dwyer, Gilmore, and Carson, 2009). Along with the above strengths and weaknesses, small and medium-sized tourism enterprises tend to implement CRM through personal relationship networks, especially personal relationships with senior managers of partners (Ritchie and Brindley, 2005). One of the most important strengths of small and medium-sized tourism enterprises comes from their close connection with customers, helping them easily manage and change to adapt to changes from customers (Harrigan, Ramsey, and Ibbotson, 2011). Therefore, direct relationships or face-to-face contacts with customers are truly necessary in the success of small and medium-sized tourism enterprises. In other words, small and medium-sized tourism enterprises spend most of their resources on CRM programs by using traditional CRM activities such as visiting customers directly on special occasions, regularly contacting employees, sales or promotions and run customer loyalty programs.
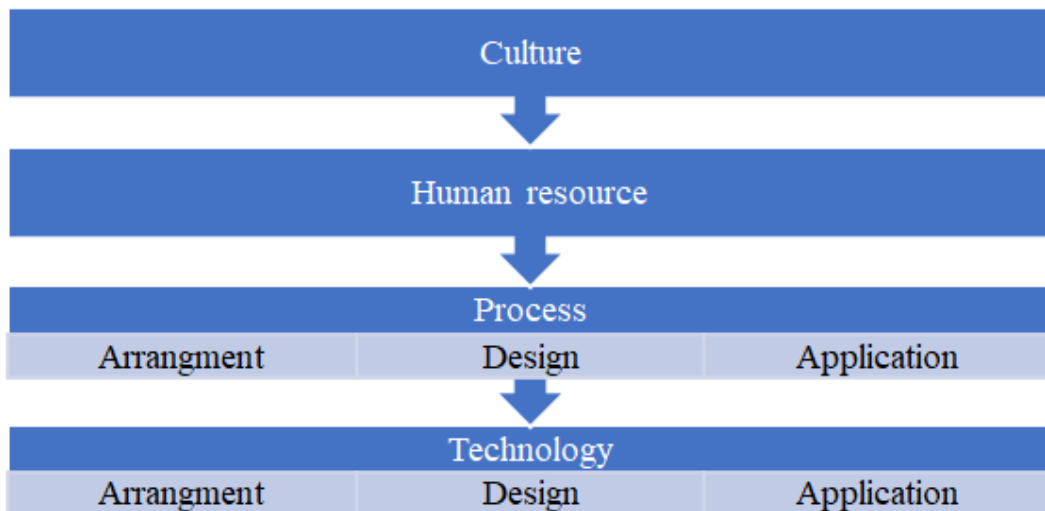
Figure 1. Interaction between CRM components in small and medium-sized tourism enterprises

Source: Finnegan and Currie (2010)

Currently, some small and medium-sized tourism enterprises do not even realize that they are practicing CRM activities. Instead, they think it is merely the day-to-day work of a few special employees within the organization, bringing customers to businesses and keeping them for as long as possible. Although performing a business mission is important, very few small and medium-sized tourism enterprises invest in advanced technology or design formal business processes to support these tasks. In fact, small and medium-sized tourism enterprises simply use their existing technology infrastructure, such as email or spreadsheet software (Excel) instead of purchasing specialized CRM software (Schoder and Madeja, 2004; Harrigan, Ramsey and Ibbotson, 2011). This can be explained by the fact that the current complex CRM software on the market does not meet the unique and specific capital needs of small and medium-sized tourism enterprises. Another reason why small and medium-sized tourism enterprises have not yet invested adequate resources in CRM programs is due to very low success rates and inconsistent results in CRM implementation (Cooper, Upton and Seaman, 2005). For that reason, small and medium-sized tourism enterprises often do not implement formal CRM as described in theory or as in large corporations.

However, recently some small and medium-sized tourism enterprises have begun to apply CRM software as a solution to solve specific problems. Small and medium-sized tourism enterprises often use CRM functions for two main purposes: interacting with customers and managing customer information (Harrigan, Ramsey and Ibbotson, 2011). Because small and medium-sized tourism enterprises have unique characteristics and limited resources compared to large organizations as mentioned above, the factors that promote the success of CRM implementation in enterprises are: Small and medium-sized tourism does not come from strong resources but from "interactions" between functional departments

in businesses (Finnegan and Currie, 2010), as presented in Figure 1. In other words, the integrating different functional areas to support CRM in small and medium-sized tourism enterprises is much more important than investing in advanced CRM software applications to minimize weaknesses and take advantage of advantages are inherited from the nature of small and medium-sized tourism enterprises (Le Giang Nam, 2021).

3. CONCLUSION

It can be seen that information and communication technology infrastructure plays a role as one of the premises of CRM systems in general (Chang et al., 2010; Jayachandran et al., 2005). The development of information and communications technology infrastructure aims to support businesses in implementing basic CRM system activities such as collecting personal and transactional information of customers, analyzing customer transactions, and analyzing customer information to classify customer groups according to anthropometric characteristics or economic interests, personalize services and products depending on analyzed customer characteristics. Commonly used technologies such as internal e-mail systems, voice interaction systems, CRM software applications serving sales teams (Salesforce, Microsoft Dynamics CRM, Suga CRM), analytics features Analyze customer data in CRM software. However, despite receiving high levels of investment, most of the applied technologies in the CRM system have not yet fully exploited their effectiveness. One of the reasons is that traditional CRM technologies are only utilized to mainly automate information acquisition processes to accelerate and automate the sales process and to liberate employee labor away from repetitive tasks. Higher level goals of applying information technology in CRM systems such as establishing programs to personalize products and services and classify customers according to characteristics have not been focused. Furthermore, these information technology applications still lack functions to increase interaction and build emotional connections with today's social customer group (Trainor, 2012). Therefore, based on their characteristics, small and medium-sized tourism businesses need to do research to apply social network integration into their customer relationship management system, creating new strengths. in the current context.

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HANOI CAPITAL TOURISM: POTENTIAL AND SOLUTIONS FOR SUSTAINABLE DEVELOPMENT

Lê Thị Hằng[1]

Tóm tắt: *Với gần 6.000 di tích, hơn 1.350 làng nghề, Hà Nội hội tụ nhiều tiềm năng để phát triển du lịch bền vững như du lịch văn hóa, du lịch làng nghề, du lịch tâm linh. Cùng với đó, vùng ngoại thành với nhiều nguồn tài nguyên tự nhiên phong phú, phù hợp để Hà Nội phát triển loại hình du lịch giải trí, du lịch thể thao, du lịch sinh thái, du lịch nông nghiệp... Tuy nhiên, Hà Nội vẫn đang khai thác những lợi thế có sẵn của tự nhiên, văn hóa, lịch sử mà chưa có sự bảo tồn, đầu tư và mở rộng để phát triển du lịch. Điều này sẽ tạo ra những tác động tiêu cực tới sự phát triển lâu dài, ảnh hưởng đến nhu cầu của thế hệ tương lai. Do vậy, Thủ đô cần được định hướng để phát triển du lịch bền vững, tức là vừa phát triển lợi ích kinh tế nhưng vẫn đảm bảo yếu tố môi trường và cộng đồng. Bài viết sử dụng phương pháp nghiên cứu và phân tích số liệu thứ cấp để tổng hợp khái niệm phát triển du lịch bền vững, phân tích thực trạng phát triển du lịch của Thủ đô Hà Nội giai đoạn gần đây, đánh giá những điểm cần khắc phục, xem xét các thách thức, từ đó đưa ra các giải pháp nhằm phát triển bền vững của du lịch Hà Nội.*

Từ khóa: *Du lịch; Du lịch Hà Nội; Phát triển du lịch; Du lịch bền vững.*

Abtract: *With nearly 6,000 relics and more than 1,350 craft villages, Hanoi has many potentials to develop sustainable tourism such as cultural tourism, craft village tourism, and spiritual tourism. Along with that, the suburbs with many rich natural resources are suitable for Hanoi to develop entertainment tourism, sports tourism, eco-tourism, agricultural tourism... However, Hanoi is still exploiting the available advantages of nature, culture, and history but has not yet preserved, invested, and expanded to develop tourism. This will create negative impacts on long-term development, affecting the needs of future generations. Therefore, the capital needs to be oriented to develop sustainable tourism, which means developing economic benefits while still ensuring environmental and community factors. The article uses research methods and secondary data analysis to synthesize the concept of sustainable tourism development, analyze the current status of tourism development in Hanoi Capital in recent times, and evaluate the obstacles to overcome and consider challenges, thereby providing solutions for sustainable development of Hanoi tourism.*

Keywords: *Tourism, Hanoi tourism; Tourism development; Sustainable tourism.*

1. INTRODUCTION

Tourism plays an important role at all levels, from global to national and local. The question is how to continue to regenerate and preserve the natural environment or long-standing cultural values when developing tourism? The answer is "principles of sustainable tourism development". Sustainable tourism seeks to maintain the quantity,

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quality and productivity of both natural and human resource systems over time, while respecting and adapting to the dynamics of that system. According to the United Nations World Tourism Organization, sustainable tourism is travel that meets the needs of current tourists and receiving regions while protecting and enhancing opportunities for the future. The goal is to maintain the economic and social advantages of tourism development while minimizing any unwanted impacts on the natural, historical, socio-cultural environment in the relevant area.

2. THE CONCEPT OF SUSTAINABLE TOURISM DEVELOPMENT

According to UNEP & UNWTO (2005), sustainable tourism development is the development of tourism activities that fully take into account current and future economic, social and environmental impacts, while also meeting the needs of tourists and the development of the tourism industry, while meeting the requirements of protecting the ecological environment and the requirements of the local community. Sustainable tourism development involves the environmental, economic and socio -cultural aspects of tourism development, requiring the establishment of an appropriate balance between these three aspects to ensure long-term sustainability.

Implementing sustainable tourism activities helps manage resources to satisfy people's needs for socio-economic development and enjoyment, while still maintaining cultural integrity and diversity biology and development of ecosystems. The concept of sustainable tourism is closely related to the concepts of eco-tourism, green tourism,...

Sustainable tourism development includes the following three basic contents: (1) Maintain a reasonably high, stable and continuous tourism economic growth rate; (2) Promote progress, social justice, preserve and promote indigenous cultural values; (3) Protect natural resources, ecological environment, develop renewable resources.

In Vietnam, the 2017 Law on Tourism defines: "*Sustainable tourism development is tourism development that simultaneously meets socio-economic and environmental requirements, ensuring harmony of interests of entities participating in tourism activities, without compromising its ability to meet future tourism demand*".

3. RESEARCH METHODS

The research method used in this article is the method of collecting and analyzing secondary data collected from sources such as the United Nations Environment Program and the World Tourism Organization (UNEP & UNWTO), Vietnam National Assembly, Hanoi Department of Tourism,... with the purpose of synthesizing the concept of sustainable tourism development from previous studies, coming up with the concept of sustainable tourism development for this study. From the secondary data collected, the author analyzes the current status of tourism development in Hanoi Capital in the period 2016-2023, pointing out weaknesses that need to be overcome in Hanoi tourism

development. Through this, solutions are proposed to sustainably develop Hanoi tourism.

4. CURRENT STATUS OF HANOI TOURISM DEVELOPMENT RECENTLY

As the capital of "a thousand years of civilization", the number of domestic tourists coming to Hanoi is at the top of the country. Hanoi is the center for receiving and distributing tourists to the Northern tourist areas and other regions in Vietnam as well as to countries in the region. The city is located in the center of the North, connecting traffic from Hanoi to other provinces of Vietnam, including air, road, waterway and railway. Hanoi is the traffic hub of five domestic railway lines and one intermodal line to Beijing (China), going to many European countries. Tourists choose Hanoi as their trip destination mainly because of its cultural, historical, and natural resource values. In addition, Hanoi is a safe destination, people's hospitality, reasonable prices and shopping opportunities.

According to the Hanoi Department of Tourism (2023), in the period 2016 - 2023, tourists to Hanoi achieved an average growth rate of 10.1%/year, the rate of the followry year was higher than the previous year and exceeded the target. The average growth rate is 8-10%/year (except for the years of the COVID-19 pandemic). In particular, the average growth rate of international tourists reached 21.2%/year which was 2 years ealier than the target.

In addition, Hanoi is currently a member of the Council for the Promotion of Tourism in Asia (CPTA), the Tourism Promotion Organization of Asia-Pacific Cities (TPO)...

Through a survey of international tourists as well as the current situation of attracting tourists in recent years, it can be seen that exploiting cultural and historical values is a strength in Hanoi's tourism development. However, statistics also show that out of the total of more than 7 million visitors to Hanoi, the majority are from the Asian tourist market, while the European tourist market accounts for only 17% - a quite modest number.

Hanoi Department of Tourism (2023) said that by the end of 2023, Hanoi had welcome 4 million international visitors (with 2.82 million international visitors staying), an increase of 266.7% compared to 2022. (up 33.3% compared to plan, equivalent to 57% of 2019 results) and 20 million domestic visitors, up 16.3% compared to 2022 (up 5% compared to plan, equivalent to 91% 2019 results).

Total revenue from tourists is estimated at 87.65 trillion VND, an increase of 45.5% compared to 2022 (an increase of 13.83% compared to the plan, equivalent to 84.4% of 2019 results).

Regarding the system of tourist accommodation establishments, Hanoi has 3,758 tourist accommodation establishments with 71,016 rooms; Among them, there are 605 hotels and apartments rated from 1 to 5 stars with 26,411 rooms. In 2023, the average room occupancy rate of the hotel sector is estimated to reach about 58.7%, an increase of 20.1% over the same period in 2022.

In addition, Hanoi is continuously highly appreciated by prestigious international tourism organizations and magazines for its tourist attractiveness. In 2023, travel site TripAdvisor ranked Hanoi at number 3/20 of the world's top culinary destinations; Booking.com selected Hanoi as one of the leading destinations in the Asia-Pacific region with unique culinary experiences... In early September 2023, Hanoi was honored to host the World Cup Award. Hanoi Department of Tourism was awarded Asia's leading city, one of the 3 awards from the world Travel Awards (Hoang Quyen, 2023).

Currently, Hanoi continues to deploy new types of tourism associated with the strengths of each locality such as: Sports tourism products in Soc Son district; community tourism products associated with health care in districts: Ba Vi, Soc Son; hot air balloon tourism products in districts: Tay Ho, Long Bien, Son Tay town... Besides , Hanoi is also fiercely building and developing new experiential tourism products associated with heritage - relics and craft villages along the route: Hanoi Center - Thanh Tri - Thuong Tin - Phu Xuyen; Hanoi Central route - Thanh Oai - Ung Hoa - My Duc, Hanoi Central route - Son Tay - Ba Vi. In addition, Hanoi advocates developing strong tourism products such as culinary tourism, MICE tourism, health care tourism...

Hanoi City is accelerating the completion of the tourist destination infrastructure system, including: transportation infrastructure system connecting tourist destinations with the city and national road system, infrastructure system serving tourism activities.

5. POINTS THAT NEED TO BE OVERCOME IN HANOI TOURISM DEVELOPMENT

- Hanoi lacks event centers with full services for accommodation, food, and large-scale meetings that can serve thousands of people. In addition, the lack of connection between destinations, event centers and travel agencies is also the reason why MICE tourism has not really developed in the Capital.

- Hanoi's tourism products are still monotonous, mainly historical and cultural attractions, lacking rich experiential activities, so they have not attracted MICE tourists compared to other provinces and cities.

- The quality of tourism services at some cultural tourism destinations associated with historical relics and traditional craft villages is not high. Meanwhile, Hanoi's tourist accommodation system is not synchronized and cannot meet the growth rate and diverse needs of tourists.

- Many businesses have not completely "recovered" due to the impact of the COVID-19 epidemic; Unfair competition between some businesses affects tour prices and quality.

- Increased fuel prices lead to higher tour costs.

- Lack of typical products, lack of attractive tours and routes; The entertainment area, accommodation system, and infrastructure do not meet the requirements of tourists.

- The quality of human resources is not high.

- Digital transformation in tourism is still slow...

6. CHALLENGES TO ACHIEVING THE GOAL OF SUSTAINABLE TOURISM DEVELOPMENT IN HANOI

First, Hanoi does not have an infrastructure system including roads, with enough safety standards and easy access for tourists to travel quickly, safely and convenient.

Second, specific policies for community tourism and agricultural tourism are not clear; human resource training policies, tax policies, land policies, immigration policies at times and places that are difficult to access and procedures are still complicated; The ability to access guidelines and policies on investment support of tourism businesses is not high, due to barriers in processes and procedures (due to applying policies from other sectors).

Third, when people in tourist areas often violate the property of the tourist area without being aware of the long-term impact on the ecological environment and the long-term benefits for the community.

Fourth, the lack of cooperation between related sectors. Businesses work individually and independently for the personal benefit of each business. Policies from destination management agencies are still quite fragmented. At the same time, management agencies have not been able to connect businesses to develop together in a common direction.

Fifth, businesses and management agencies do not truly understand sustainable tourism as well as how to apply and practice sustainability. Currently, many travel companies are understanding sustainability as a type of tour and advertising sustainable tours in parallel with the company's other tour products . They see sustainable tourism as a product to exploit. This makes sustainable development misleading in companies.

Sixth, there is fear of rising costs. Travel companies are concerned that investment will be costly and that when expanding on a large scale, it will put pressure on company profits. Meanwhile, the sustainability factor here does not necessarily need to be applied all at once and can start from things close to the company, such as energy saving regulations or resource use here.

7. SOLUTIONS FOR SUSTAINABLE DEVELOPMENT OF HANOI TOURISM

In the coming time, Hanoi needs to focus on implementing key solutions to develop tourism worthy of the capital's strengths, which are:

First, invest in building tourism infrastructure and technical facilities in a synchronous, professional, modern, and environmentally friendly manner. Develop a variety of types of accommodation facilities, from high-end accommodation systems (4-5 star hotels, luxury tourist apartments, tourist villas) to hotel systems rated from 1-3 stars, tourist motels, houses with rooms for rent to tourists (homestays), tourist villages, tourist accommodation ships,...

Second, raise awareness about developing tourism to truly become a key economic sector, creating a strong driving force for the development of other industries and fields, making an important contribution to forming the current economic structure. grand.

Third, promote the development of diverse, unique, high-quality tourism in accordance with market needs and world trends. In addition to the traditional types of tourism that Hanoi is implementing, such as cultural heritage tourism, spiritual tourism, craft village tourism, community tourism model - a form of tourism business based on Natural resources and local cultural characteristics to develop tourism. A typical community tourism model is Duong Lam ancient village (Son Tay town) with about 10% of households in Duong Lam commune participating in providing community tourism services. They provide accommodation, dining, and sightseeing services, helping visitors experience the feeling of "being a farmer". Besides, there are many other attractive community tourism destinations in the city, such as: Bat Trang ceramic village (Gia Lam district), Dao Thuc water puppet village (Dong Anh district), Lai Xa photography village (Hoai Duc district), Dao herbal medicine village (Ba Vi district)... Besides, select some typical craft villages to upgrade; Upgrade the quality of walking streets; Upgrading tourism infrastructure, beautifying the general landscape of the city, especially inner-city districts and old streets...

Fourth, further promote propaganda, advertising, and promotion of tourism, developing the domestic and foreign tourist market. Accordingly, proactively propagandize and promote Hanoi tourism on television stations and LED screens in some provinces with the hope that through short clips, domestic tourists can be introduced to understand more and learn more. Return to Hanoi capital with famous delicious dishes and beautiful landscapes.

Fifth, increase spending and extend the length of stay of tourists, especially international visitors, through solutions such as encouraging the development of night tourism products and increasing experiential activities with tourist attractions. Traditional tourism product groups, cuisine, shopping.

Sixth, attract visitors from new markets, build the product "3 countries one destination" including Vietnam, Laos, Cambodia, in which the tourist attraction center is the capital hanoi.

Finally, promote digital transformation activities in tourism.

8. DISCUSSION AND CONCLUSION

Although tourism has been identified as a key economic sector, Hanoi's current awareness and specific actions have not achieved the desired results. The city needs to further raise awareness among people and businesses about this field. In particular, Hanoi needs to pay attention to tourism promotion and advertising; Develop and expand tourism

products, focusing on urban tourism, taking customer experience as the center; Attract guests from new markets; Further promote digital transformation activities in tourism...

The article analyzed the current development status of Hanoi tourism, evaluated the limitations and proposed 7 solutions to sustainably develop Hanoi tourism. However, the data used in the article is secondary data, the information collected previously is not exactly the same as the current research goal, so the level of accuracy is not high. The following studies can completely build a sustainable tourism development model for Hanoi, investigate primary data to make reasonable recommendations to achieve the research goals.

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INTERNATIONAL EXPERIENCE IN BUILDING SMART TOURISM DESTINATIONS AND SOLUTIONS FOR VIETNAM TO DEVELOP SMART TOURISM

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Abstract: In the industrial revolution 4.0, building a smart tourism destination is a goal for the tourism industry of countries around the world in general and in Vietnam in particular. Building a smart tourism destination has been researched by many authors around the world and in the country. By qualitative approach to the content analysis method of some models of smart tourism destinations of some countries, systematizing some concepts of smart tourism, smart tourism destinations and also giving conditions for the development of smart tourism destinations, thereby offering solutions to develop smart tourism.

Keywords: Smart tourism, building smart travel destinations.

Tóm tắt: Trong cuộc cách mạng công nghiệp 4.0, xây dựng điểm đến du lịch thông minh là mục tiêu hướng đến đối với ngành Du lịch của các quốc gia trên thế giới nói chung và tại Việt Nam nói riêng. Xây dựng điểm đến du lịch thông minh đã được nhiều tác giả trên thế giới và trong nước quan tâm nghiên cứu. Bằng cách tiếp cận định tính với phương pháp phân tích nội dung một số mô hình về điểm đến du lịch thông minh của một số nước, hệ thống hóa một số khái niệm về du lịch thông minh, điểm đến du lịch thông minh đồng thời cũng đưa ra điều kiện phát triển điểm đến du lịch thông minh, từ đó đưa ra giải pháp phát triển du lịch thông minh.

Từ khóa: Du lịch thông minh, xây dựng điểm đến du lịch thông minh.

1. INTRODUCTION

The fourth industrial revolution has had a profound impact on all aspects of socio-economic life, including tourism, especially the strong development of information and communications technology that has allowed the creation of new technologies. Diverse products in the tourism industry, so smart tourism is a model built on an information and communications technology platform in which data integration infrastructure is developed synchronously to ensure interaction between three parties, tourism business managers and tourists to create the best benefits and services. Tourism has become a key economic sector in Vietnam's sustainable development orientation.

Building and developing smart tourism is also the common goal of the whole country. Therefore, the Ministry of Culture, Sports and Tourism issued Decision No. 3570/QD-BVHTTTDL approving the Project: "Application of technology of industry 4.0 to develop smart tourism implemented in the world." What is the world like? What are the specific conditions for building a destination in Vietnam?

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Therefore, with the improvement of infrastructure mechanisms, the potential to develop smart tourism in Vietnam is very positive. To develop smart tourism, we must clearly understand the concept of smart tourism, its advantages and disadvantages. to smart tourism, some models from typical countries' experiences, as well as its basic requirements and at the same time point out the conditions for building smart tourism destinations in Vietnam and from there give recommendations of smart tourism development solutions suitable for the current context.

2. RESEARCH RESULTS

2.1. Research methodology

The article uses qualitative research methods. Secondary data such as books, newspapers, domestic and foreign publications will be synthesized and analyzed selectively related to the research issue. The next method used is some studies and cases of some typical samples of building smart tourism destinations in some countries. Thereby offering solutions to develop smart tourism for Vietnam.

2.2. Systematize concepts related to smart tourism, smart travel destinations

According to Ho Ha (2018), Smart Tourism is a model built on the foundation of information and communication technology in which each data integration is developed synchronously, ensuring timely interaction between three parties: managers, tourism businesses and tourists.

Boes and Buhalis (2016): Smart travel destinations are understood where there is a tourism infrastructure that delivers smart experience values, personalized experiences made possible using technological tools to provide smart services.

Sebrae (2016): Smart destinations differ from conventional destinations in that they are invested towards integrated governance, sustainable development, applying smart management of resources, easy accessibility, high competitiveness.

Lamsfus et al. (2015): A travel destination is considered smart when it leverages the technological infrastructure provided by the city to: (1) enhance travelers' travel experience by personalizing and making them receive the availability of both tourism and local services and products in destinations; and (2) by empowering destination management organizations, local organizations and tourism companies for decision-making and actions generated within the destination, collected, managed and processed by technological infrastructure.

Spain's Institute for Innovation Development (SEGITTUR) together with the National Agency for Standardization (AENOR). According to the organization, the smart tourism destination is "an innovative tourism area that is accessible to everyone and built on modern technological infrastructure, ensuring the sustainable development of the

territory, facilitating the interaction of visitors and their integration with the surrounding environment, improve the quality of their experience in destinations and people's quality of life." Most of the researchers' concepts suggest that smart travel destinations can be defined by tourism spaces with the support of information and communication to improve the experience of tourists when approaching any destination.

2.3. Layers and components of smart tourism
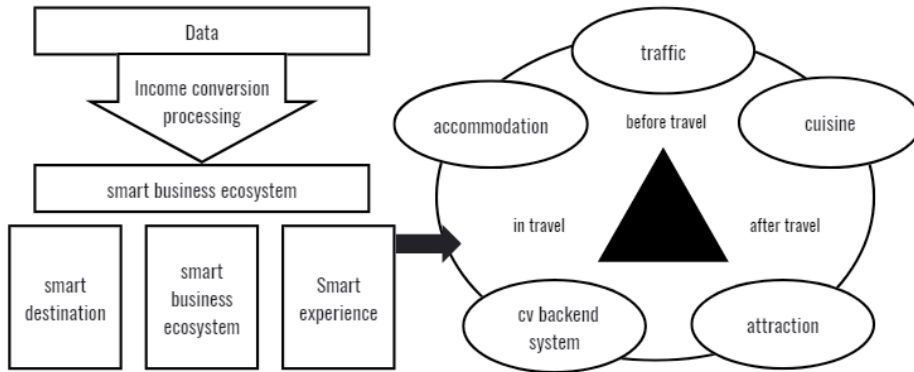
Figure 1. Components of smart tourism forr the case Seoul

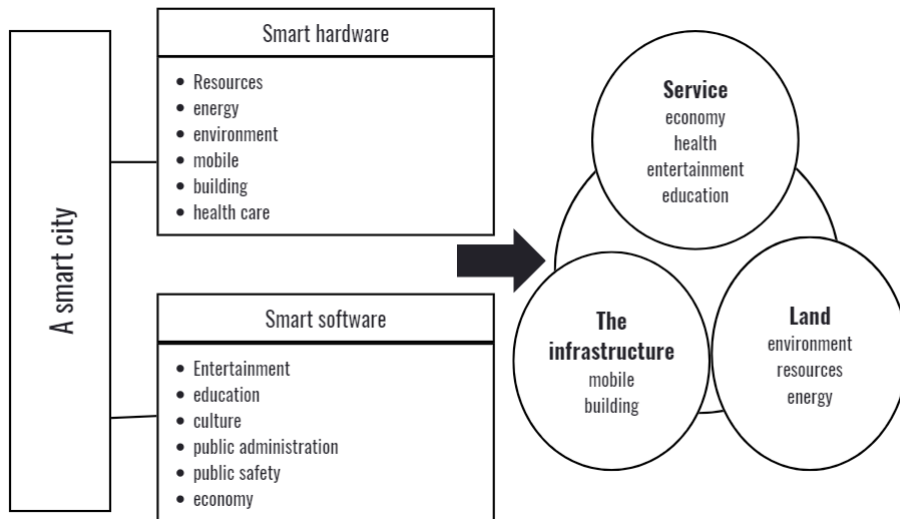*Source: P.Lee, WC. Hunter, N.Chung - Sustainability (2020)*

Figure 2. Components of a smart city

Source: P.Lee, WC. Hunter, N.Chung - Sustainability (2020)

Table 2. Smart pillars in Seoul

Open data	Seoul uses an open data system in all sectors of society. It can enable digital payments for all services, the world's fastest wifi network, universal public Internet coverage and a better information and communication technology infrastructure
Online administration	Seoul communicates with 10 million citizens by real-time data through the "Seoul Public Data" project. By law all public data must be made available to the public so that citizens can express their opinions to the government
Big data	TOPIS centers integrate traffic management of all cities. This travel manages road execution time communication, manages bus operation, forecasts traffic based on traditional high-speed big data collection and monitors the entire city 24.00 all year round

Source: Isadora Bortonlan Fernandes Cardoso, Thays Cristina Domareski Ruiz, Smart tourism destinations - A case study of Seoul, South Korea (2021)

2.4. Some international experiences in building smart tourism destinations

Building smart tourism destinations has been implemented by many countries in many diverse forms. In particular, the focus is placed on optimizing the application of science and technology combined with comprehensive information and data systems. This creates highlights and competitive advantages in tourism between countries.

Singapore Experience: Singapore is considered one of the pioneering countries to build smart cities and smart tourism. Singapore uses technology to enhance the visitor experience, including improving visitor traffic management and minimising environmental impact. Some prerequisites for building a smart travel destination are as follows:

First, develop and promulgate policies and regulations to support the construction of smart tourism destinations.

+ Investment support policy: Investment support for donor enterprises to build smart tourism destinations such as amusement parks, commercial centers, entertainment complexes;

+ Regulations on construction standards: Provide very strict regulations on construction standards for works at tourist destinations to ensure the quality of works and safety for residents and tourists;

+ Support education and training for enterprises in the tourism industry: help the construction, management and operation of destinations to ensure professionalism to create the best tourism experience for customers;

+ Encourage the use of technology: Equipping intelligent control systems helps minimize incidents and improve customer experience;

+ Environmental protection policy: The Government supports investors to build smart tourism destinations to protect the environment, ensuring long-term sustainability.

Second, increase investment in developing technical infrastructure to collect and process data, build smart tourism destinations, and enhance the tourist experience including:

+ Network infrastructure: Building network infrastructure with high Internet speed and strong connectivity, helping to collect data more quickly and efficiently;

+ Smart sensor: Deploy smart sensors to collect data on traffic flow, environment, weather,... help authorities and tourism businesses assess customer needs and improve the tourism experience;

+ Developing technologies such as artificial intelligence, machine learning, data mining that have been used to analyze data and offer optimal solutions for building smart tourism destinations;

+ Cloud computing: Investing in cloud computing, allowing data storage in the cloud for easier remote access and data sharing, helping to reduce investment costs for tourism businesses and increase the efficiency of data collection and processing;

+ Blockchain technology: With applications such as managing data related to hotels, airline tickets, passports ,... will help increase the security and reliability of travel data.

Third, develop and implement a national strategy on AI.

When implementing digital transformation, building a digital government towards a smart and safe nation.

Singapore sees data as the lifeblood of its digital economy and digital government. The National AI Strategy is an important step in Singapore's smart nation journey to increase the use of its AI technologies to transform Singapore's economy, accelerating the development of a smart digital economy. Smart Nation enables businesses and organisations to find smart solutions to improve the traveller experience and enhance the contribution of the Tourism industry to Singapore's economy. To drive AI innovation and adoption, Singapore has built a sustainable ecosystem with 7 national AI programmes, bringing strong economic and social impact to Singapore and its people.

The Singapore government has been reviewing business models to make changes to achieve productivity efficiencies and create new areas of growth By 2030, Singapore is considered a leader in the development and deployment of scalable AI solutions, impactful, in key sectors that are of high value and relevant to citizens and businesses, including the tourism sector.

Fourth, develop smart tourism products and services.

Singapore is developing many smart travel products to improve customers' travel experience and attract tourists:

- Smart travel card (EZ-Link): Smart travel card allows tourists to use this card to pay for services: public transportation (bus, tram, train), shopping at shops, restaurants and entertainment areas;

- Smart Travel Support System: Singapore Visitor Centre at Marina Bay Sands has provided customer support services through virtual reality (AR) and augmented reality (VR) experiences to obtain information about tourist attractions, activities and events in Singapore;

- Smart travel mobile application: Develop many smart travel mobile applications such as: Singapore Travel Guide, Singapore Map. SG BusLeh and Changi Recommends,... These apps provide detailed information about travel destinations, travel routes, activities and events in Singapore;

- Smart hotel booking service: Singapore has developed many smart hotel booking services such as Traveloka and Agoda, helping customers search and book hotels easily and conveniently.

Experience Korea (Seoul): Seoul is considered the smartest city in the world. Especially in terms of information technology and networks, mobile phones are very developed. The city invests in the development of material and technical infrastructure, focusing on propaganda and raising awareness for people of the importance of smart technology. The city government has invested in opening training classes on smart technology for people, immigrants and low-income people. Creating a smart tourism ecosystem and improving the sustainability of the tourism industry in the future is the focus of Seoul's tourism development. South Korea expands its distancing from building smart travel destinations. Destinations attract tourists by technology solutions integrated in services such as booking, payment, transportation, food service,... The Korean Government always facilitates digital transformation for tourism businesses, training, fostering and improving the capacity of smart tourism human resources. Some prerequisites for building a smart travel destination are as follows:

First, using advanced technology in technology infrastructure development

+ Forming a common database (Big data) in the tourism industry to strengthen management and develop the industry effectively;

+ Building a reliable database system: To ensure the accuracy and integrity, confidentiality and privacy of data;

+ Need to connect and integrate different data sources: Cultural information, entertainment. gastronomy... Create the best diverse experience for visitors.

Second, technology infrastructure must be developed to optimize management and enhance the visitor experience. This infrastructure may include: electronic information

system, tourist information management system, operation system, environmental management system, security system.

+ Invest in strong enough technical infrastructure such as: widespread Internet and mobile network coverage, GPS navigation system and IoT sensor network to collect data and provide smart solutions;

+ Using information and communication technologies such as augmented reality, virtual reality, IoT sensor network to provide tourists with new and unique experiences;

+ The Visit Korea application on smartphones allows tourists to access timely information, suitable for the trip they choose such as: instructions on what to do, what to go, what to eat, in that area...

Third, develop many technology applications

+ Use advanced technology of artificial intelligence (AI), machine learning and blockchain (Big data) to develop data-based applications;

+ Ensure data security and privacy in data-based applications by applying regulatory security standards for data protection;

+ Collaborate with domestic and international partners to share data and experiences in developing data-driven applications for industry.

Fourth, build a local partner network. Korea has created an environment to connect and promote cooperation between local partners such as service providers, tourism management agencies and local governments with each other and with tourism hotels, building an interactive business network and developing a smart tourism business network through activities such as organizing meetings and seminars building an information exchange platform between local partners organizing organize training programs and seminars.

Fifth, develop smart tourism products

+ Research and evaluate the smart tourism market;

+ Create smart products and services using the latest technologies;

+ Build a data management and analysis system to evaluate the effectiveness of smart tourism products and services to help tourism service providers develop and improve better products and services.

Sixth, promote tourism marketing

Korea conducts research on customer trends and desires as a basis for offering useful features and services to customers. On that basis, promote the promotion of our smart products and services.

Dubai (Saudi Arabia): The smart city of Dubai has brought Vietnam a lot of experience in building a smart destination. Services in Dubai from hotels, restaurants, visas, transportation, immigration,... all apply smart technology. Dubai prioritizes the development of physical and technical infrastructure. This city also strives to provide free wifi coverage for visitors with fast speeds. Dubai has launched many smart applications to help residents and tourists access information, pay, and experience easily through their phones. At Dubai airport, free battery charging columns have been built, tunnels are designed to check personal information.

Lyon (French Republic): Each country develops smart tourism in its own direction. France has built the city of Lyon towards a smart, sustainable tourism city that combines and brings harmonious benefits in all three aspects of economy, culture - society and environment. Therefore, in addition to accessing smart tourist destinations, Lyon also pays special attention to environmental protection and preserving traditional beauty and cultural features that attract tourists, building ready-made infrastructure. ready for smart tourism development.

+ Lyon has a well-connected transportation system with major European cities. The diversity of the transport network includes air, rail, road, river and even bicycle routes;

+ Lyon city government creates convenience for tourists to access tourist destinations without difficulty through transportation;

+ Lyon has designed a convenient product for tourists, the Lyon city card. This card provides users access to several museums, public transportation, and some guided tours. tour guides and many different discount programs.

3. CONDITIONS FOR VIETNAM TO DEVELOP SMART TOURISM

First, institutions and policies pave the way for smart tourism development.

Institutions and policies are very important factors to clear, pave the way and create conditions and create a favorable environment for technology application and innovation in the tourism sector, ensuring the goal of green growth and sustainable development.

On January 16, 2017, the Politburo issued Resolution No. 08-NQ/TW and affirmed the view: "Developing tourism to become a key economic sector is an important strategic direction for the country's development". Developing smart tourism requires synchronous implementation of many solutions, including promoting the application of modern science and technology. It can be said that the Vietnamese government has opened an important strategic direction to develop and apply advanced technology for the tourism development industry.

Second, smart tourism is a potential market for Vietnam.

According to statistics from the Vietnam E-commerce Association (VECOM), the proportion of domestic tourists booking hotels online and booking online tours reached more than 60%, the proportion of international tourists using the service This reached more than 75%. Up to 71% of international tourists coming to Vietnam consult destination information on the internet, 64% make reservations and buy services online during their trip to V. Vietnam. Thus, tourists use internet technology and smart utilities to act as search engines to refer to tourist destination services and choose reasonable services, perform transactions such as booking airline tickets, Online payments... tend to increase.

According to social network statistics (Effective Advertising at Adsplus.vn Partner Google Ads, Facebook Ads, 2021), as of April 2023, there are 5.07 billion internet users worldwide (accounting for 63,000 people). 5%), nearly 60% of social network account users, more than 6.6 billion smart mobile phone users connected to and using the Internet (2022). According to network.vn, in Vietnam there are up to 77 93 million Internet users (79.1% of the population), 70 million social network users (70.3%), more than 93.5 million mobile phone users (93.4%) .This proves that people around the world and Vietnamese people use internet technology and smart devices at a high rate, which contributes to creating opportunities for Vietnam to develop a smart tourism industry.

Third, invest in technical infrastructure associated with IT

Actively approach the 4.0 industrial revolution to keep up with new business trends to meet the diverse travel needs of visitors of Vietnamese tourism businesses. Many businesses have reinvented themselves to become smart businesses with business activities mostly implemented online such as marketing, product promotion, market expansion, care consulting, etc.

Fourth, cooperate with Government authorities, service providers and other representative organizations...

Fifth, training human resources in smart tourism: knowledge and skills to improve expertise and information services, effective quality to catch up with new trends.

Besides the advantages of potential types of tourism and potential customers in Vietnam, there are also limitations in online travel services. For example, in online travel, global brand service companies Demands such as: Agoda.com, booking.com, Traveloka.com, Expedia.com are accounting for about 80% of the market while about 10% of Vietnamese businesses do online travel business such as: vivu.com, chudu24. com, mytour.vn... the competitiveness of Vietnamese tourism is still modest compared to regional and international countries due to limited resources and inadequate awareness of the role of tourism.

4. SOLUTIONS FOR VIETNAM TO DEVELOP AND BUILD A SMART TOURISM DESTINATION

First, develop and promulgate policies and regulations to promote the process of building smart tourist destinations. Policies and regulations must create a favorable environment for building smart tourist destinations by using applying innovative technologies in the tourism sector; Policies and regulations to protect the environment ensure green growth and sustainable development goals in the process of developing smart tourism destinations.

Second, it is necessary to increase investment in developing technological infrastructure systems: Technological infrastructure systems using modern and synchronous technologies include electronic information systems, management systems, tourism systems, and systems. Operate security systems and environmental management systems on modern technology platforms such as

Third, develop data-based applications, invest in developing high-speed and mobile internet networks with widespread coverage, smart GPS positioning systems and IoT sensor networks to collect data and present them. Smart solutions enhance guest experience.

Fourth, develop data-based applications including applications that support local government tourism management agencies where tourism destinations, tourism businesses and tourists prioritize the use of technology aimed at exploiting information from the tourism data system to meet the goals of many subjects using the smart tourism ecosystem.

Fifth, develop smart tourism products and services on the basis of research and assessment of the smart tourism market with potential tourism development of destinations, it is necessary to determine the development of smart tourism products.

Sixth, build a smart tourism business network between local partners to promote cooperation between local partners to build and develop a smart business network, cooperation between service providers of local government tourism management agencies.

5. CONCLUSION

Thus, it can be seen that smart tourism is an inevitable development trend of world tourism in general and Vietnam's tourism industry in particular. However, to develop smart tourism, Vietnam needs to continue to perfect its form. policy mechanisms to identify models and pilot implementation of technologically qualified human resources development and strengthen international cooperation to promote propaganda to raise awareness of smart tourism development.

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CRITICAL SUCCESS FACTORS INFLUENCING IoT ADOPTION IN TOURISM INDUSTRY: THE CASE OF VIETNAM

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Abtract: *Internet of Things (IoT) offers the tourism industry an exciting opportunity to reduce operating expenses and improve customer satisfaction. The tourism, travel, and hospitality sectors may profit from new prospects presented by smart technology that makes use of IoT data. The objective of this study is to explore critical success factors (CSFs) influencing IoT adoption and evaluate their importance level in tourism and travel industries using the fuzzy AHP. First, a conceptual framework based on TOEH (Technology - Organization - Environment - Human) theory was utilized to identify the CSFs influencing IoT adoption in the context of Vietnamese tourism sector. After this step, a specific hierarchic structure was identified considering 15 sub-factors along with four factors. Then, the Fuzzy Analytic Hierarchy Process (FAHP) method was used to rank and prioritize the CSFs for IoT adoption using the relative importance weights. In this phase, an investigation is based on questionnaires and interviews with 35 experts from Vietnamese tourism industry. The results of the study indicate that Users trust, Regulatory environment and Security and privacy are the most significant CSFs for adopting IoT in tourism. This paper contributes to the understanding of IoT, its features and highlights the importance of new technology and solutions in tourism sector. The findings may be utilized to create IoT-optimized smart tourism solutions that foster trust and enhance visitor experiences.*

Keywords: *Tourism sector, IoT adoption, Critical success factors (CSFs), Fuzzy Analytic Hierarchy Process (FAHP)*

Tóm tắt: *Công nghệ Internet vạn vật (Internet of Things - IoT) mang đến cho ngành du lịch một cơ hội để giảm chi phí hoạt động và cải thiện sự hài lòng của khách hàng. Lĩnh vực du lịch, lữ hành và khách sạn có thể được hưởng lợi từ các công nghệ thông minh sử dụng dữ liệu từ IoT. Mục tiêu của nghiên cứu này là khám phá các nhân tố ảnh hưởng (CSF) đến việc áp dụng IoT và đánh giá mức độ quan trọng của chúng trong ngành du lịch và lữ hành bằng cách sử dụng phương pháp phân tích thứ bậc AHP mờ. Đầu tiên, khung lý thuyết dựa trên lý thuyết TOEH (Technology - Organization - Environment - Human) đã được sử dụng để xác định các nhân tố ảnh hưởng đến việc áp dụng IoT trong bối cảnh ngành du lịch Việt Nam. Sau đó một cấu trúc phân cấp được xác định dựa trên 15 yếu tố phụ cùng với 4 yếu tố. Sau đó, phương pháp phân tích thứ bậc mờ (FAHP) đã được sử dụng để xếp hạng các nhân tố ảnh hưởng đến việc áp dụng IoT bằng cách sử dụng các trọng số. Trong bước này, cuộc điều tra dựa trên bảng câu hỏi và phỏng vấn 35 chuyên gia của ngành du lịch Việt Nam. Kết quả nghiên cứu chỉ ra rằng Niềm tin của người sử dụng, Môi trường pháp lý, Bảo mật và quyền riêng tư là những nhân tố quan trọng nhất để áp dụng IoT trong ngành du lịch. Bài viết này góp phần nâng cao hiểu biết về IoT và điều kiện áp dụng trong lĩnh vực du lịch tại Việt Nam. Kết quả của nghiên cứu giúp các nhà cung cấp giải pháp công nghệ IoT và các công ty du lịch có định hướng và giải pháp phù hợp để phát triển du lịch thông minh.*

Từ khóa: *Du lịch; Ứng dụng IoT; Các yếu tố ảnh hưởng; Phương pháp phân tích thứ bậc mờ*

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1. INTRODUCTION

The Internet of Things, or IoT, is a system of interconnected intelligent technologies that are capable of exchanging data and communicate with other devices throughout a network using predefined algorithms without the assistance of a human [1]. The Internet of Things (IoT) is an innovative technology that has been growing in popularity in the current wireless telecommunications sector. The main advantage of the IoT concept is the enormous effect that it will have on many aspects of daily life and on possible user behavior. As one of the main forces behind the economy's increase in Internet usage, tourism has been one of the main drivers of IoT's fast emerging role in services. A nation's gross domestic product (GDP) is influenced by the tourism industry, which comprises a variety of stakeholders. As a result, growing the tourism sector would gradually raise GDP. Therefore, it is crucial to think about the way IoT is used in the tourism industry. Though it is still in its early stages, innovation has encountered several challenges in addition to both positive and negative outcomes. The tourism business continually attempts to remain a step ahead of developments to maintain a close relationship with its customers, especially in the areas of hotels, transportation, and attractions.

IoT systems have been increasingly beneficial to the tourism sector recently. There is a wide range of uses. Intelligent trains with artificial intelligence systems installed can be found in several developed nations. These trains can provide information to passengers, control the train using autonomous systems or Wi-Fi networks, foresee maintenance needs, monitor, and signal traffic, and optimize energy use. IoT capabilities are employed in the hotel business for electronic cards that are transmitted to a smartphone to save time at the hotel reception, personalized rooms, and predictive maintenance of hotel room amenities. Through the use of sensors, the client's health can be tracked and, if required, shared with a clinic. The hotel rooms will soon have smart screen mirrors; visitors will be able to order lighting and temperature via their smartphones; the shower will regulate water temperature based on guest preferences; and personnel will be notified of any issues. The pool remote control and smart parking will be used. The current deployment of IoT systems, which can monitor museum attractions and visitor reactions by analyzing data and sensors, has also benefited tourist attractions. Websites for booking travel also have advanced algorithms that let users customize their preferences. Personalized offers are sent based on the user's IP address and other connected devices. The data processing algorithms analyze the potential customer's profile by keeping an eye on travel-related internet searches and taking past reservation profiles into account. There are advantages and disadvantages to IoT deployment in the travel industry. Control over communication, automation, improved experience, more revenue, and cost savings are among the main advantages. Concerns about confidentiality (lack of standards, protocols, interconnection, and legal concerns) and data risk (security, protection, quality, accurate analysis, and compatibility) are the disadvantages.

Applications of IoT are currently playing a significant role in improving organizations' operating efficiency, agility, and competitive advantages. However, compared to other nations in the region and the world, Vietnam is still very early in the development of IoT and its application in the tourism and travel industry and has several limitations [2]. Moreover, there is still very little study on its applications in Vietnam. Furthermore, research on the factors that contribute to IoT application success in Vietnam's tourism sector is inadequate [3], [4], [5]. Fewer studies have focused on the determinants of IoT adoption performance in comparison to previous research that has investigated the antecedents of IoT adoption inside organizations. To fulfill this gap, this study employs the technology-organization-environment-human (TOEH) model to identify technological, organizational, environmental, and human factors influencing the performance of AI adoption in the tourism and travel sector, as well as the relative importance of these factors. Here, we systematically analyze the past and current state of IoT and literature to identify and evaluate the critical factors that most influence the successful implementation of IoT in Vietnamese tourism sector.

In this study, Fuzzy Analytic Hierarchy Process (FAHP) method is used to determine the rank of factors. Analyzing a set of options that have been characterized in terms of some evaluative criteria is a significant component of decision-making. Alternatives must be ranked in order to determine the best alternative or establish the relative importance of each alternative. In the AHP, each alternative is compared with every other alternative in terms of the relative importance of its contribution to the criterion under consideration. Crisp values are used to represent the pairwise comparisons. The pairwise comparison matrix is created by repeating the comparison for each criterion. The pairwise comparison matrix can be used to determine the weight vector. However, when dealing with the uncertainty in the decision-making process, the pure AHP technique usually performs inadequately. As a result, FAHP was developed to address the problems with ambiguity. Since its introduction, the fuzzy AHP approach has been widely applied by numerous academics to address diverse decision-making issues in a variety of fields. Fuzzy AHP was utilized to identify, examine and prioritize the most critical challenges in the software industry [6]. By taking into account risk considerations, Chan and Niraj [7] provided a fuzzy extended AHP approach for choosing the best supplier. Fuzzy AHP was utilized by Huang *et al.* [8] to choose government-sponsored R&D projects. A fuzzy AHP-based framework was proposed by Li *et al.* [9] to analyze the main factors and sub-factors of green finance. Fuzzy AHP was also used by Chou *et al.* [10] to assess how each criterion in human resource for science and technology was weighted.

Our research focuses on identifying the rank of critical success factors with fair and objective attribute weights. The framework for the utilization of FAHP in group MCDM is proposed in order to achieve high consensus in determining the weights of factors. To calculate the factor weights influencing IoT adoption in tourism sector, the FAHP ap-

proach [11]. The remainder of this paper is organized as follows. Section 2 presents literature review to emphasize the significance this research topic. The basic concepts of Fuzzy AHP are given in Section 3. Section 4 describes the data collection process. Results and conclusion of the study are included in Section 5. Finally, Section 6 concludes the study.

2. LITERATURE REVIEW

2.1. IoT Technology in tourism and travel industries

IoT has evolved into an effective and practical tool for advancing evidence-based tourism management practices. IoT's applications in other industries, like smart applications, smart services, and smart management, have also demonstrated the technology's effectiveness within the tourism and travel industry [13]. It is important to consider traveling to a destination as a means of experiencing something different. Customers want for products that generate strong feelings in them. As a result, technology must provide an immersive experience in smart tourism destinations where tourists may obtain information and engage with the surroundings as members of a network. By interacting with users' smartphones, IoT enables the development of contextualized experiences in smart tourism destinations and facilitates the creation of services and products that are more suited to this fresh kind of travelers. The following are some of the most significant IoT examples in the tourism sector:

Geo-location technologies: Trendy gadget companies are in great need for geo-location technologies that track whereabouts and information that enhances travel experiences, from route planning to accommodation arrangements and trip planning. Travelers seek the assurance and comfort of knowing that they can get in contact with trustworthy individuals if they come into any difficulties while traveling. In addition to facilitating rapid communication with peers who are traveling similar to you or have arrived at the same place, ubiquitous smart gadgets assist travelers in tracking time, speed/pace, distance, location, and elevation. Travel agents and tour operators will be able to collaborate on tourism location programs as well as create attractions and experiences that better fit the arriving visitors thanks to the IoT and the analysis of travel experience data [14], [15].

Ecotourism: Through the use of Internet of Things (IoT) and numerous devices, tourism locations may be directly measured, and their attraction can be enhanced through social media interactions. The industry may then employ specialists in environmental design and communications to provide "services" like e-demonstrators, which offer unique cultural experiences and activities, and e-rangers, or e-tour guides, which offer personalized travel guide services to enhance the traveler experience and guarantee travelers' safety and security all along the way.

Retail tourism services: Along with creating loyalty, the connection between visitors' mobile devices and digital advertisements functions as a tool for dynamism, promotion,

and sales. These services utilize the Internet of Things to help tourism service providers, such hotels, transportation vendors, and attractions, better understand their customers and adapt to their needs by providing location-based services.

Virtual concierge: Long-term vacationers who visit multiple locations can utilize a virtual concierge service, which removes the effort of carrying their bags through long security lines and stores, vacuums, and repacks their wardrobe in between trips. It also picks up and delivers the traveler's suitcase from their hotel to their next destination. While the smart luggage tag tracks the luggage from gate to gate and offers automatic weather forecasts from one destination to another, the virtual concierge will assist in customizing the traveler's schedule (Vinh *et al.*, 2023).

2.2 The critical success factors for IoT adoption in tourism and travel industries

Due to the universality of AI and the lack of research on AI adoption at the organizational level, it is problematic to build directly on current theories. AI adoption is a challenging endeavor that requires not only the purchase of technological devices and software, but also the provision of necessary infrastructure and resources over an extended period of time. As a result, the adoption and application of IoT and new technology is one of the top priorities of researchers and practitioners worldwide [17]. The technology acceptance model (TAM) is a theoretical framework in which various external factors shape users' perceptions of the usefulness and ease of use of new technology, and those factors influence whether users embrace a new technology as well as their attitudes toward it [18]. There are no restrictions in the TAM on what external factors may influence the user's perceptions. Meanwhile, the Technology - Organization - Environment (TOE) framework presents three contexts that may affect an organization's information technology adoption process in terms of external variables: technological, organizational, and environmental [19]. While this framework was appropriate for understanding technological acceptance and dissemination from an organizational standpoint, TOE has been widely used in corporation research [20], [21], [22], [23]. Moreover, the theoretical HOT fit model was developed using views on technology adoption [24]. The model integrates human, organizational, and technological factors, as well as their characteristics, holistically. The three dimensions interact and influence one other through their bi-party relationships, namely the HO fit, HT fit, and OT fit, and hence have an impact on the overall HOT fit. Fit is defined here as the congruence or matching of several elements. Fit is a state that can be perceived or evaluated in a variety of manners. In this study, the adoption and application of IoT in the tourism sector are investigated using the TOEH fit frameworks' technological, environmental, organizational and human lenses. The factors and their sub-factors are shown in Table 1.

Table 1. Factors and sub-factors

Factor	Sub-factor	Definition	Source
Technology (F1)	Technology readiness (F11)	A company's technology readiness refers to its ability to accept new technology. This consists of both internal (technology infrastructure) and external (market-available) technologies relevant to the company.	[25], [26]
	Technology complexity (F12)	Technology complexity is the degree to which an innovation is considered to be difficult to understand and implement.	[27], [28], [29]
	Compatibility (F13)	Compatibility is denoted as the fit between the desired application and technology.	[30], [31], [32]
	Relative advantage (F14)	Relative advantage is the degree to which an innovation is considered to be superior to the idea it replaces.	[28], [33], [34], [35]
	Security and privacy (F15)	The most representative security and privacy attributes are confidentiality, integrity, availability, accountability, and privacy-preservability.	[36], [37], [38], [39]
Organization (F2)	Firm size (F21)	Firm size serves as a proxy for a variety of organizational components such as slack resources, capital, organizational structure, and so on.	[40], [41], [42]
	Organizational culture (F22)	The organizational culture shapes staff opinions and responses to new technology and has been identified as a significant element in its acceptance and speed of adoption. Organizations with a creative culture are probably more likely to adopt AI into their business processes.	[43], [44]
	Management support (F23)	Management support is critical in assigning resources for AI applications.	[45], [46], [47]
	Available resources (F24)	Resources refer to human, computer hardware, data, and networking that are essential to adopt new innovation.	[35], [38]
Environment (F3)	Regulatory environment (F31)	The regulatory environment refers to government policies and regulations designed to track and manage the use of new technologies.	[16], [48], [49]
	Competitive pressure (F32)	Competitive pressure denotes the degree of perceived pressure from industry competitors.	[50], [51], [52]
	Vendor partnership (F33)	Vendor collaboration has been experimentally supported as one of the main determinants of innovation uptake.	[53]

Factor	Sub-factor	Definition	Source
Human (F4)	Employee competency (F41)	Employee competency describes the knowledge and skills required to perform job tasks	[54], [55]
	Employee acceptance (F42)	Employee acceptance implies employees' perspectives on how and why they welcome a certain, business-based AI application when service occurs.	[56], [57]
	Users trust (F43)	Trust denotes the extent to which a user feels secured about conducting a transaction with the service provider.	[58], [59]

3. RESEARCH METHODOLOGY

In this section, a brief description of the FAHP method is given as follows.

A matrix $\tilde{A}$ is constructed according to fuzzy pairwise comparisons.

$$\tilde{A} = \begin{bmatrix} 1 & \tilde{a}_{12} & \cdots & \tilde{a}_{1n} \\ \tilde{a}_{21} & 1 & \vdots & \tilde{a}_{2n} \\ \vdots & \cdots & \cdots & \vdots \\ \tilde{a}_{n1} & \tilde{a}_{n2} & \cdots & 1 \end{bmatrix} \tag{1}$$

where $\tilde{a}_{ij} = (l_{ij}, m_{ij}, u_{ij})$ is the fuzzy comparison value of criterion i to criterion j

The fuzzy weights of each criterion are calculated as

$$\tilde{r}_i = (\widetilde{a_{i1}} \otimes \widetilde{a_{i2}} \otimes \ldots \otimes \widetilde{a_{in}})^{1/n} \text{ for } i = 1,2,\ldots,n \tag{2}$$

$$\widetilde{w}_i = \frac{\tilde{r}_i}{\widetilde{r_1} \oplus \widetilde{r_2} \ldots \oplus \widetilde{r_n}} \text{ for } i = 1,2,\ldots,n \tag{3}$$

where $\tilde{r}_i$ is the geometric mean of fuzzy comparison value of criterion i to each criterion, and $\widetilde{w}_i$ is the fuzzy weight of the ith criterion.

The fuzzy weight vector $\widehat{W}$ is constructed as:

$$\widehat{W} = (\widetilde{w}_1, \widetilde{w}_2, \ldots, \widetilde{w}_n)^T \tag{4}$$

Due to the space limitation, the establishment of a group decision making based on FAHP is not presented here.

4. DATA COLLECTION

To collect data, a team of 42 key domain experts was formed for the decision making panel, which includes 12 database administrators, 8 IT Managers, 16 help desk technicians, three computer support specialists, and three cyber security analysts who work in the tourism sector in Vietnam and have more than ten years of expertise in the field. They are from Vietravel, BenThanh Tourist and Saigontourist. The finalized list of 15 factors

of IoT adoption in tourism has been grouped into four key groups based on the research framework after several phases of discussion with experts. These are technological, organizational, environmental, and human measurement. Finally, the factors and sub-factors are completely depicted and introduced in Table 1.

The questionnaire instrument was designed using the primary attributes of the FAHP method's factor comparison and a scale of 1-5 for each comparison between factors. In January 2024, the questionnaire was distributed to experts who were involved in the previous step of factor investigation and had roles and responsibilities that might provide a holistic view of the technology, organization, environment, and human factors during the study. After the experts' comparison matrices of factors and sub-factors are formed, then the consistency ratios (CRs) are calculated. Seven questionnaires had inappropriate answers among the returned responses. As a result, their feedback was removed from the analysis. Sixteen respondents have CR values that are all less than 0.1. As a result, the outcomes of this study are based on the viewpoints of 35 experts.

5. RESULTS AND DISCUSSIONS

The FAHP method is used to determine the ranking of the influence of factors and sub-factors on the successful implementation of IoT in tourism sector. The calculation is done according to the hierarchy that has been formed in the theoretical framework which consists of technology, organization, environment, and human criteria. After the questionnaire results are received and accepted, a geometric mean calculation is performed to form a consensus pairwise comparison matrix for each technology, organization, environment and human factor and sub-factor; then the consistency ratio of each pairwise comparison matrix is calculated; then calculate the weight of each factor and sub-factor to determine the local ranking and global ranking. To calculate the global weight of sub-factors and global rank, multiply the weight of each factor by the weight of the sub-factor. The results of consensus pairwise comparison matrices, global weights and ranks are found in Tables 2-12. Figure 1 shows the rank of sub-factors influencing IoT adoption in tourism sector.

Table 2. Aggregate comparison matrix of factor

	F1	F2	F3	F4
F1	(1,1,1)	(1,3,5)	(0.2,0.33,1)	(0.2,0.33,1)
F2	(0.2,0.33,1)	(1,1,1)	(1,1,1)	(0.14,0.26,1)
F3	(1,3,5)	(1,1,1)	(1,1,1)	(0.14.0.23.1)
F4	(1,3,5)	(1,3.87,7)	(1,4.4,7)	(1,1,1)

Table 3. Fuzzy weights of factor

Criteria	Fuzzy Weights
F1	(0.059,0.161,0.605)

F2	(0.054,0.115,0.404)
F3	(0.081,0.193,0.605)
F4	(0.131,0.532,1.471)

Table 4. Aggregate comparison matrix of sub-factor within Technology (F1)

	F11	F12	F13	F14	F15
F11	(1,1,1)	(1,1.35,7)	(1,1,1)	(1,4.54,7)	(0.11,0.15,0.33)
F12	(0.14,0.74,1)	(1,1,1)	(1,1.41,5)	(0.2,1.99,5)	(0.14,0.2,0.33)
F13	(1,1,1)	(0.2,0.71,1)	(1,1,1)	(1,1,1)	(0.11,0.14,0.2)
F14	(0.14,0.22,1)	(0.2,0.5,5)	(1,1,1)	(1,1,1)	(0.11,0.18,0.33)
F15	(3,6.57,9)	(3,5,7)	(5,7,9)	(3,5.55,9)	(1,1,1)

Table 5. Fuzzy weights of sub-factor within Technology (F1)

Sub-factor	Fuzzy Weights
F11	(0.061,0.139,0.395)
F12	(0.031,0.118,0.345)
F13	(0.044,0.089,0.164)
F14	(0.03,0.064,0.25)
F15	(0.251,0.589,1.246)

Table 6. Aggregate comparison matrix of sub-factor within Organization (F2)

	F21	F22	F23	F24
F21	(1,1,1)	(0.14,0.2,0.33)	(0.11,0.14,0.2)	(0.11,0.14,0.2)
F22	(3,5,7)	(1,1,1)	(0.2,0.62,1)	(0.2,0.62,1)
F23	(5,7,9)	(1,1.62,5)	(1,1,1)	(0.2,0.71,5)
F24	(5,7,9)	(1,1.62,5)	(0.2,1.41,5)	(1,1,1)

Table 7. Fuzzy weights of sub-factor within Organization (F2)

Sub-criteria	Fuzzy Weights
F21	(0.021,0.049,0.122)
F22	(0.061,0.23,0.582)
F23	(0.103,0.329,1.386)
F24	(0.103,0.391,1.386)

Table 8. Aggregate comparison matrix of sub-factor within Environment (F3)

	F31	F32	F33
F31	(1,1,1)	(1,4.26,7)	(1,3,5)

F32	(0.14,0.23,1)	(1,1,1)	(0.2,0.33,1)
F33	(0.2,0.33,1)	(1,3,5)	(1,1,1)

Table 9. Fuzzy weights of sub-factor within Environment (F3)

Sub-criteria	Fuzzy Weights
F31	(0.167,0.621,1.73)
F32	(0.051,0.114,0.529)
F33	(0.098,0.266,0.905)

Table 10. Aggregate comparison matrix of sub-factor within Human (F4)

	F41	F42	F43
F41	(1,1,1)	(1,1,1)	(0.11,0.17,0.33)
F42	(1,1,1)	(1,1,1)	(0.11,0.15,0.33)
F43	(3,6.04,9)	(3,6.57,9)	(1,1,1)

Table 11. Fuzzy weights of sub-factor within Human (F4)

Sub-criteria	Fuzzy Weights
F41	(0.084,0.122,0.228)
F42	(0.084,0.119,0.228)
F43	(0.364,0.759,1.423)

As shown in Table 12 and Figure 1, users trust sub-factor became the greatest weight (0.788) in IoT adoption. This finding is in line with that of previous studies [60], [61], [62], [63] which indicated a strong effect of users' trust in comparison to other factors in technology adoption. Users are concerned that their sensitive information will fall into the wrong hands or be misused. It is linked to security since ensuring system security and user safety is critical to building trust. It was discovered that customer trust influenced their decision to use an advanced technology (IoT adoption). Customers are more likely to use the technology if they have trust in it. This orientation is based on the exchange of information and services with a trusted partner [64].

Table 12. Global weight and rank of factors and sub-factors

Factor	Factor weight	Sub-factor weight in relation to the factor weight	Global weight	Global weight (crisp value)	Rank
Technology (F1)	(0.059,0.161,0.605)			0.187	3
Technology readiness (F11)		(0.061,0.139,0.395)	(0.004,0.022,0.239)	0.030	11
Technology complexity (F12)		(0.031,0.118,0.345)	(0.002,0.019,0.209)	0.026	12
Compatibility (F13)		(0.044,0.089,0.164)	(0.003,0.014,0.099)	0.013	14

Factor	Factor weight	Sub-factor weight in relation to the factor weight	Global weight	Global weight (crisp value)	Rank
Relative advantage (F14)		(0.03,0.064,0.25)	(0.002,0.01,0.151)	0.018	13
Security and privacy (F15)		(0.251,0.589,1.246)	(0.015,0.095,0.753)	0.099	3
Organization (F2)	(0.054,0.115,0.404)			0.130	4
Firm size (F21)		(0.021,0.049,0.122)	(0.001,0.006,0.049)	0.006	15
Organizational culture (F22)		(0.061,0.23,0.582)	(0.003,0.026,0.235)	0.030	10
Management support (F23)		(0.103,0.329,1.386)	(0.006,0.038,0.561)	0.066	6
Available resources (F24)		(0.103,0.391,1.386)	(0.006,0.045,0.561)	0.068	5
Environment (F3)	(0.081,0.193,0.605)			0.199	2
Regulatory environment (F31)		(0.167,0.621,1.73)	(0.013,0.12,1.046)	0.134	2
Competitive pressure (F32)		(0.051,0.114,0.529)	(0.004,0.022,0.32)	0.038	9
Vendor partnership (F33)		(0.098,0.266,0.905)	(0.008,0.051,0.547)	0.068	4
Human (F4)	(0.131,0.532,1.471)			0.484	1
Employee competency (F41)		(0.084,0.122,0.228)	(0.011,0.065,0.335)	0.049	7
Employee acceptance (F42)		(0.084,0.119,0.228)	(0.011,0.063,0.335)	0.049	8
Users trust (F43)		(0.364,0.759,1.423)	(0.048,0.404,2.092)	0.305	1

As shown in Table 12, Human (F4) is the highest ranked critical success factor, followed by Environment (F3) in second place, Technology (F1) in third place, and Organization (F2) in fourth place.
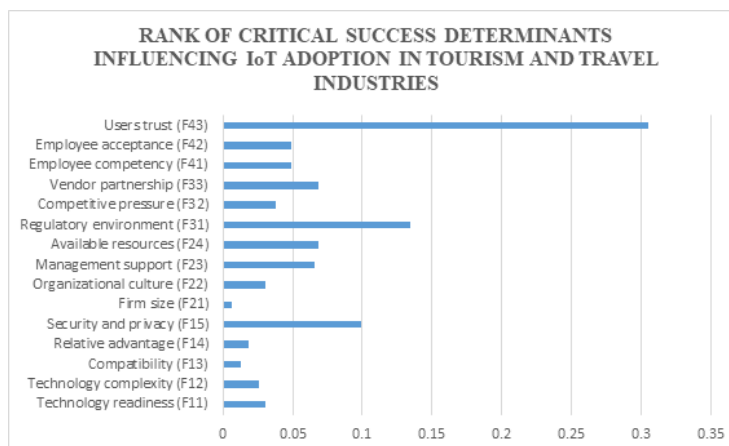

Figure 1. Rank of sub-factors influencing IoT adoption in tourism and travel industries

Regulatory environment (F31) stands second in the critical success factors of IoT adoption in tourism. Risk awareness, regulatory requirements, and intervention in the tourism service environment have increased in the aftermath of the global financial crisis. Government regulations have played an essential part in driving IoT adoption. Similarly, the current study's findings regarding IoT adoption indicate the same. Conventional data

protection is a core business of the tourism sector. Regulatory limitations, among other things, have limited the financial and personal resources of the tourism sector, while governmental regulations establish opportunities for new market participants and IoT adoption is hampered by ethical concerns [65].

Security and privacy (F15) hold the third position among the vital success factors of IoT adoption in the tourism industry. This IoT application in tourism efficiently assists the organization in data analysis. Organizations relies mostly on an IoT-integrated system that meets their business requirements. However, working with data involves a number of challenges, including security and privacy concerns. Tourists must be certain that their personal information will not be abused [66]. They must be satisfied that their data's security and privacy are protected. They will then openly share their information with the other groups. As a result, organizational authorities must take client data security and privacy very seriously and honestly. This finding is aligned with the fact that perceived safety and security risk and perceived privacy risk, as well as that of ease of use, usefulness, and attitudes as a pathway for shaping the behavioral intention for IoT-enabled technologies at a smart destination [39].

Nevertheless, firm size (F21) and compatibility (F13) were the least influential factors. Several academics in the field of innovation have analyzed firm size factor, which is regarded as a leading indication of organizational complexity. However, several other research, including this one, found little connection between firm size and technology adoption (e.g., cloud computing [67]). Meanwhile, compatibility, according to the Diffusion of Innovation Theory, is a critical technology attribute recognized by consumers. The decision to choose a new system is driven by compatibility. Several studies have been carried out in order to provide a description of the compatibility role and its influence on IT innovation adoption [68], [69], [70]. The degree to which an invention is perceived as being consistent with the current values, historical experience, and needs of potential adopters is referred to as compatibility. It can be inferred from the finding that IT applications are popular in the Vietnamese context, and individuals and organizations are familiar with their application in a variety of disciplines. As a result, compatibility plays little role in the adoption of IoT technologies in the tourism sector.

6. CONCLUSIONS

The study offers a literature review to explore the CSFs influencing IoT adoption. The proposed theoretical model is for IoT, an innovative technology in tourism. The suggested factors and sub-factors are based on existing literature. This work responds to the call for additional research and empirical studies on intelligent automation in the tourism sector by providing a conceptual model for IoT adoption, as there is currently a scarcity of studies that investigate the change in the ways tourism organizations are performed due to the emerging technologies such as IoT, AI and robotics. Scholars can utilize the findings to investigate various new advanced technology adoption practices in tourism. This find-

ing may be used by researchers to further investigate factors influencing IoT adoption in tourism sector and create a trustworthy literature in the other sectors.

By identifying the factors influencing IoT adoption in tourism, this study delivers important insights for practitioners and managers. This study provides some of the managerial viewpoints that can be used to understand the adoption of IoT in the tourism sector. By considering the rank of factors found, organizations can better assess their ability to adopt IoT successfully and know which changes to make. According to the findings, the most crucial factor in IoT adoption is user trust. Marketers and designers of IoT applications in tourism need to ensure that users' trust issues should be extensively investigated. To increase consumer trust in IoT applications and grow the market, the product should appear useful to consumers with clear benefits, capabilities, and features that focus on the customer experience. Furthermore, in order to gain user trust in IoT technology, it must be reliable and trustworthy, meet standards, and meet some user expectations and standards. Overall, product functionality and durability, particularly in hostile environments, are critical to ensuring consumer trust in IoT goods and services. In addition, IoT application operators must persuade users that they have a high level of trust.

In addition to users' trust, regulatory environment has been recognized as one of the factors that firms need to consider. The regulatory environment's goals have been to design a policy framework that would encourage and support disruptive innovation to improve financial inclusion and economic growth while also protecting the safety. In designing regulations, regulators should seek to provide clear rules, maintain market integrity, and encourage advanced technology adoption.

Future research can be done in several directions. In this study, a group of experts discussed the factors affecting IoT adoption in tourism. However, there may be some differences in cultural beliefs or political regulations between groups of people. Therefore, further studies should be conducted in different communities to validate the validity of the proposed model given in this study. Moreover, the survey was completed in January 2024, with 35 valid responses from the Vietnamese tourism sector. The selection of 35 experts should not be considered as a generalization. As a result, more responses should have been examined in order to give it a general shape over a longer period of time. This was not completed. This could be considered as an unexpected limitation. It is up to new investigators to figure out this.

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SMART TOURISM EDUCATION:
OPPORTUNITIES FOR HANOI UNIVERSITY OF INDUSTRY

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Abstract: *In an era of fast technological breakthroughs, the global tourist scene is shifting toward smart tourism, which emphasizes digitalization and innovation. Recognizing the critical role that smart tourism plays in creating the industry's future, higher education institutions must urgently integrate smart tourism education into their curricula. This study investigates the prospects provided to Hanoi University of Industry (HaUI) to include smart tourism-related subjects into its tourism and hospitality curricula, therefore harmonizing with the workforce's growing expectations. Employing a secondary research technique, this paper investigates established smart tourism courses from diverse countries. The findings provide ways for HaUI to build and alter its curriculum, including relevant smart tourism courses. The study not only suggests curricular changes, but it also acts as a roadmap for educators, supporting the synchronization of academic programs with the changing needs of the smart tourism industry. By bridging this gap, HaUI can provide its students with the necessary skills to succeed in the ever-changing world of smart tourism, helping to the industry's long-term growth and innovation.*

Keywords: *Smart tourism, secondary research, smart tourism education.*

Tóm tắt: *Trong thời đại của sự tiến bộ công nghệ nhanh chóng, du lịch toàn cầu đang chuyển dịch sang du lịch thông minh, nhấn mạnh vào số hóa và đổi mới. Nhận thức được vai trò quan trọng của du lịch thông minh, các trường đại học cần tích hợp giáo dục du lịch thông minh vào chương trình học của họ. Nghiên cứu này tìm hiểu về triển vọng mà Trường Đại học Công nghiệp Hà Nội (HaUI) có thể tích hợp các môn học liên quan đến du lịch thông minh để đáp ứng nhu cầu ngày càng tăng của lực lượng lao động. Bằng cách sử dụng phương pháp nghiên cứu thứ cấp từ các khóa học về du lịch thông minh đã được áp dụng ở các quốc gia khác nhau, bài nghiên cứu đề xuất các phương pháp cho HaUI trong việc thiết kế và điều chỉnh chương trình học của mình, nhằm đồng bộ hóa với nhu cầu thay đổi của ngành du lịch thông minh.*

Từ khoá: *Du lịch thông minh, dữ liệu thứ cấp, du lịch thông minh trong giáo dục.*

1. INTRODUCTION

Currently, tourism is a widespread and significant industry globally. Tourism has emerged as a vital economic industry in numerous countries worldwide due to its significant socio-economic impact, which is a significant economic activity that generates cash, employment opportunities, and contributes to the development of services and infrastructure (Rasool, Maqbool & Tarique, 2021). Additionally, it serves as a platform

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for fostering harmony, peace, and cultural exchange, producing lasting intangible qualities. Vietnam, as a developing country in the Asia-Pacific area, has experienced a notable increase in its tourist industry, playing a crucial role in stimulating economic development and enhancing foreign currency reserves for the government (Nguyen & Bui, 2022). Vietnam has many benefits in its tourism sector, attracting an increasing number of international tourists. This sector plays a significant role in the country's overall development by being closely connected to many aspects of the economy such as transportation, infrastructure, and finance (Le, 2020). The tourist business creates ripple effects that significantly enhance its impact on the national economy.

The integration of mobile technology, location data, the Internet of Things, sensors, open data, and social media has established a direct link between the physical and virtual realms, facilitating instantaneous communication between them. This technological landscape has given rise to smart tourism, a societal trend leveraging information technology to enrich tourists' experiences (Dana et al, 2017). Smart tourism aims to establish new information infrastructure and business ecosystems, foster innovative enterprises within these frameworks, and improve tourism experiences by incorporating advancements in mobile technology into the industry (Buhalis, 2014). Also, the 2018 Revised Law on Higher Education is prompting significant changes to move Vietnam toward a more open higher education system. USAID is supporting MOET with a new project that will provide direct technical assistance to review and improve higher education policies, advancing university autonomy, quality assurance, digital transformation, and innovations in key sectors critical to Vietnam's continued economic growth and development. Also in the interview with *Vietnamnews*, Dr. Nguyễn Thu Thuỷ, Head of the Ministry of Education and Training's Department of Higher Education claimed that after a decade of reforms, higher education institutions have strived to diversify their training programmes, teaching techniques, improve facilities and learning environments, and offer modern, internationally integrated student support services. The quality assurance and certification system for higher education in Vietnam is a recent development but has been progressing steadily to suit the quality assurance needs of educational institutions and programmes across all levels of higher education. Universities create their curricula according to national higher education standards for each academic degree, focusing on intellectual capacity development, ethics, and skills that match the National Framework of Qualifications and the National Qualification Framework of Vietnam. Higher education institutions have dramatically boosted the number of new training programmes in recent years to satisfy the demands of the employment market.

Even with the abundance of research articles discussing how information and technology have been integrated into the development of smart tourism, there is still a noticeable lack of scholarly investigation into smart tourism education, especially in

relation to curriculum frameworks. Although the technology parts of smart tourism have been thoroughly covered by existing literature, its pedagogical implications have received less attention. Acknowledging this gap, researchers have started a project to examine and assess university curricula across the globe. Through an analysis of these frameworks, the research aims to clarify the integration of topics and modules linked to smart tourism in educational programs. By offering insights into the instructional methodologies used by different institutions to prepare students for the opportunities and problems posed by the rapidly expanding sector of smart tourism, this project seeks to close the research gap.

In this paper, the authors aim to look into the context at Hanoi University of Industry (HaUI) and explore abundant opportunities for Hanoi University of Industry to enhance its smart tourism in education which are in line with the higher education reform policy in Vietnam. In the following parts, we outline and examine the concept of smart tourism, tracing its development and current state both globally and within the Vietnamese context. Also, drawing insights from international best practices, we will explore the integration of smart tourism into higher education and its relevance to the Vietnamese context. By understanding how other countries have incorporated smart tourism into their educational frameworks, we can extract useful lessons and insights that are relevant to the Vietnamese higher education system in general and Hanoi University of Industry in particular. Researchers would assess the opportunities available for the institution to enhance its smart tourism education initiatives at HaUI, including curriculum enhancement, industrial collaborations, research projects, and technological incorporation, which will be in line with Vietnam's higher education reform strategy, guaranteeing that the institution maintains a leading position in innovation and excellence in smart tourism education.

2. LITERATURE REVIEW

2.1. Understanding of smart tourism

Smart tourism encompasses a range of technologies and strategies aimed at enhancing the efficiency, sustainability, and competitiveness of tourism destinations (Buhalis and Amaranggana, 2015). Key features include the use of mobile applications, big data analytics, Internet of Things (IoT) devices, and artificial intelligence (AI) to streamline travel processes, personalize services, and improve destination management. At its core, smart tourism harnesses digital innovations to create seamless, immersive, and memorable travel experiences for tourists while optimizing resource allocation and environmental sustainability (Gretzel, Zhong & Koo, 2016).

2.2. Development of smart tourism worldwide and in Vietnam

The development of smart tourism worldwide has been marked by significant strides in leveraging technology to enhance visitor experiences and destination management practices. Scholars such as Buhalis and Amaranggana (2015) have highlighted the

integration of information and communication technologies to provide personalized, innovative, and sustainable tourism experiences. This shift has led to the adoption of tools such as mobile applications, IoT devices, and data analytics to improve connectivity, streamline operations, and optimize resource management across the tourism ecosystem.

In Vietnam, smart tourism has emerged as a strategic priority to capitalize on the country's cultural heritage, natural attractions, and burgeoning tourism industry. Government initiatives, as noted by Vu (2021), underscore the importance of leveraging technology to enhance destination marketing, visitor services, and infrastructure. Efforts in key destinations like Hanoi, Ho Chi Minh City, and Danang are focused on integrating smart solutions to improve visitor experiences, optimize resource management, and foster collaboration among stakeholders.

Despite progress, challenges remain in Vietnam's smart tourism landscape. Ngo (2022) identifies barriers such as limited digital infrastructure, fragmented data ecosystems, and the need for skilled human resources. These factors hinder the effective implementation of smart tourism initiatives and underscore the importance of public-private partnerships and investments in digital literacy and skills development.

Moreover, the demand for smart tourism skills is reshaping the labor workforce in the tourism industry. Nguyen (2021) emphasizes the necessity of equipping tourism professionals with interdisciplinary competencies in information technology, data analytics, marketing, and sustainable tourism management. As smart tourism continues to evolve globally and in Vietnam, there is a growing need for professionals who can navigate the complexities of the digital landscape and contribute to the sustainable development of the industry.

2.3. Smart tourism education in higher education worldwide and in Vietnam

Smart tourism education has gained prominence in higher education institutions worldwide as the tourism industry undergoes a digital transformation. Scholars such as Xiang and Gretzel (2010) emphasize the importance of integrating smart tourism concepts into higher education curricula to prepare students for the evolving needs of the industry. With the increasing adoption of technology in tourism, universities and colleges around the world are incorporating courses and programs focused on smart tourism, covering topics such as digital marketing, data analytics, and destination management.

Despite the acknowledged importance of smart tourism education, its integration into higher education institutions varies globally. While some institutions have embraced smart tourism principles and incorporated related courses into their programs, others lag behind due to familiarity with traditional tourism education methods (Xu et al., 2023). In Xu's research (2023), problems arising from smart tourism education include the training of tourist management experts at colleges and universities, the mismatch between the

need and supply of talent, the practical and scientific classroom instruction, and the unsatisfactory work environment. Therefore, it is urgent to use experiential learning in the practical training of tourism management professionals and looks into the OTCPE (objective setting; teacher-student cooperation; curriculum integration (theoretical course + field course + online course); process implementation (experience, reflection, generalization, application); evaluation summary (activity performance + activity report + team task + result report) cognitive experience model.

Smart tourism education in higher education institutions is characterized by its interdisciplinary nature, drawing upon insights from fields such as information technology, marketing, and sustainability. It emphasizes hands-on learning experiences and practical applications, enabling students to develop critical thinking skills and problem-solving abilities (Hou, 2021). According to Hou (2021), students may more successfully apply their academic knowledge in the actual world of work, which enhances the learning process. For instance, during the explanation of the tour guide, the instructor can allow the students to join the training room for the 3D tour guide simulation and prepare them for the simulated tour guide training. In the process, it may help students relate to the work of a tour guide while also broadening their perspectives and strengthening their capacity for association, all of which contribute to the improvement of their overall professional aptitude. Simultaneously, enhance the student assessment system by assessing students' performance throughout the teaching process. This may enable students to see their own deficiencies and take prompt, appropriate action to strengthen them. Students' capacity for research and interpersonal communication should be continuously developed, and their professional and technical proficiency should be raised.

In Vietnam, higher education institutions are also recognizing the importance of smart tourism education in response to the country's growing tourism sector. Research by Tran et al. (2020) highlights efforts by universities to develop curriculum and training programs tailored to the needs of the smart tourism industry. Initiatives such as industry collaborations, guest lectures, and experiential learning opportunities are being utilized to equip students with the knowledge and skills needed to thrive in a digital tourism landscape.

The integration of smart tourism curricula in higher education institutions is crucial for several reasons. Firstly, it ensures that graduates are equipped with the competencies required to leverage technology effectively in tourism management and operations. As noted by Mandalia (2023), smart tourism curricula enable students to understand the complexities of digital platforms, data analysis, and consumer behavior in the context of tourism. Secondly, it enhances the competitiveness of higher education institutions by aligning their offerings with industry demands and trends, thus attracting students and fostering partnerships with tourism stakeholders.

Moreover, smart tourism curricula play a vital role in teaching tourism in higher education. According to Aaron and Husna (2023), as destinations and institutions

strive to prepare graduates to meet the needs and challenges of future work contexts where technology is pervasive, a smart tourism curriculum should be designed and developed to meet industry and consumer demands and expectations. Teaching content should include practical skills such as programming and risk assessment as well as other "soft smartness" skills such as planning and goal completion, collaboration, and communication.

3. METHODS

A Google search of smart tourism course/subject outlines was conducted in order to obtain an overview of the curriculum that is currently in the public domain. The primary data will be acquired by means of methodical searches of subject descriptions and course outlines that are made publicly available by academic institutions worldwide. The key sources will include institutional websites, academic databases, and Google searches. To contextualize the results, secondary data will include academic publications, conference proceedings, and pertinent reports. After gathering, the data will be carefully categorized according to the selected topics connected to smart tourism with clear content and detailed courses information listed in their curricula frameworks. Researchers have carefully examined each curriculum's content to extract detailed information on the course titles, descriptions, and essential subjects addressed. Accuracy and consistency will be guaranteed by data cleansing processes.

There have been 15 curricula of different majors related to tourism and hospitality management in Asian, European, and American countries found through the search method. By looking into each curriculum, there are six courses/ subjects related to smart tourism education found, namely Digital Marketing and Social Media, Data Management and Business Analytics for Tourism, Business and Technology, E-Commerce, Computer graphics and layout design, and Innovation Management. These subjects have been applied differently in tourism and hospitality institutions as shown in Table 1. Each course/subject shown in Table 1 can have different names across institutions, however, the core knowledge in that course/subject remains consistent.

4. RESULTS AND DISCUSSION

Table 1 displays a smart tourism curriculum based on the Google search results. One important finding from Table 1 is that there are only six universities offering smart tourism curricula in Europe, five in Asia, and four in the United States on the three continents. This may indicate that the field of smart tourism in higher education is still in its early stages. That means that the curricula of the fourteen institutions covering this topic primarily focus on topics related to digital marketing, data analytics, business, and technology, with less attention paid to other related topics like innovation management, e-commerce, and graphic design.

**Table 1. A synthesis of 6 smart tourism-related subjects/courses
from 15 higher education insitutions**

Country	Institutions	Smart tourism - related subjects/courses					
		Digital Marketing and Social Media	Data Management and Business Analytics for Tourism	Business and Technology	E-Commerce	Computer graphics and layout design	Innovation Management
European countries	HAAGA-HELIA University of Applied Sciences	√					
	University of Barcelona	√			√		
	Excelia Tourism School	√	√				
	Turiba University			√	√		
	Bath Spa University	√	√				√
	Vincent Pol University		√	√			
Asian countries	RMIT University Vietnam	√		√			
	PolyU	√	√	√			√
	Siam University		√				
	Burapha University	√	√				√
	Macau Institute for Tourism Studies				√		
America	Florida International University	√	√	√			
	Rochester Institute of Technology		√	√			
	Girna American University	√		√		√	
	American College	√				√	

Following on what Table 1 has shown regarding higher education curricula in smart tourism, the implications of this research paper indicate that more work has to be done to educate students for professions in smart tourism. More work should go into developing students' practical information technology and computerization skills in smart tourism curricula. Since graduates have grown up in an increasingly digital world, instructional materials should include multimedia skills like graphics design and practical abilities like data analytics.

5. CONCLUSION AND LIMITATION

In conclusion, smart tourism represents a transformative force in the tourism industry, offering opportunities for destinations to enhance competitiveness, sustainability, and visitor experiences. The evolution of smart tourism worldwide and in Vietnam underscores the importance of integrating technological innovations and data-driven approaches into destination management and higher education curricula. For Hanoi University of

Industry, embracing smart tourism education presents an opportunity to stay ahead of the curve, equip students with relevant skills, and contribute to the sustainable development of Vietnam's tourism industry.

Vietnam's tourism future seems promising due to its status as a developing destination with a youthful and technology-proficient workforce. The tourism sector here has plenty of chances to gain insights from international destinations and implement appropriate technologies to improve the guest experience, thereby boosting the long-term competitiveness of tourism. Vietnamese tourism locations should prioritize investing in information and communications technology (ICT) infrastructure to enhance the "5As of tourism": accessibility, attractions, activities, amenities, and ancillary services. Smart tourism encompasses more than simply integrating technology. It includes sustainability, efficiency, innovation, and management among other elements. Smart human skills are essential for effectively managing smart tourism. The university should ensure that students derive advantages from an emphasis on sustainability, genuine evaluation methods, and integrated work-based learning across all courses. Regarding the curriculum, there could be an integration of increased data analysis and digital business components into project assessments, aiming to equip students for the era of smart digitization.

Furthermore, HaUI can forge partnerships with leading tourism companies, technology firms, and government agencies involved in smart tourism initiatives. Collaborating with industry stakeholders provides valuable insights into industry trends, technological advancements, and emerging skill requirements, which can inform curriculum development. The collaboration with industry partners could broaden job opportunities beyond conventional on-site hotel work. These opportunities encompass online sales, virtual event management, and consultancy services focusing on emerging smart tourism and hospitality trends.

As we have mentioned before, the introduction of Information and Communication Technologies (ICTs) has been a crucial development in the ever-changing field of tourism education. At the outset, their relevance to organizational performance and business operations was acknowledged as the principal justification for their incorporation into tourism curricula (Buhalis, 1998). Besides hybrid classes which combine traditional face-to-face instruction with online learning components, HaUI has also provided virtual field trips and tours of tourist destinations. Through immersive experiences, students can explore different cultural sites, landmarks, and attractions, enhancing their understanding of destination management and tourism marketing strategies. In addition, students will be able to tailor their learning experiences according to their individual interests and preferences and explore virtual environments independently, revisit particular areas, and investigate themes further, which encourages self-directed learning and inquiry-based study.

An integrative approach to curriculum building can greatly improve HaUI's curriculum. By engaging diverse industries via collaborating with travel companies, agencies and experts in the tourism and hospitality sector, HaUI can ensure that its curriculum reflects the latest trends and advancements in intelligent tourism, enhancing the students' preparedness for the workforce. This collaborative effort fosters a dynamic learning environment that encourages innovation and equips graduates with the skills needed to thrive in the rapidly evolving tourism sector. Students at HaUI get an education that is reflective of the complex nature of smart tourism by drawing on the expertise of professors in areas as varied as computer science, marketing, cultural heritage preservation, environmental studies, and tourist management. Students can learn more about the interdependence of the tourist industry's many facets — from technical advancements and ecological practices to consumer behavior and cultural importance — through this multidisciplinary approach. Haui gives its students a well-rounded education that draws from many fields, so they can solve complicated problems and make meaningful contributions to smart tourism projects. Additionally, this approach encourages students to think creatively, critically, and collaboratively, which will serve them well in a variety of jobs within the exciting and ever-changing tourist industry.

This research note presents an initial understanding of the smart tourism curriculum landscape. However, it still has some drawbacks. While it presents an overview of the content taught related to smart tourism in tertiary education, it omits the content of subjects. The content is strictly protected by institutions due to privacy policy. In addition, this study has been carried out with a small sample size, which might not be generalizable to other institutions all over the world. Future research should explore the content of smart tourism - related subjects.

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RESEARCH ON THE IMPACT OF CIRCULAR ECONOMY APPLICATION ON TOURIST SATISFACTION: A CASE STUDY IN TAM DAO DISTRICT - VINH PHUC PROVINCE

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Abstract: The research was conducted to determine the influencing factors of circular economy application on tourist satisfaction: "case study in Tam Dao district - Vinh Phuc province. Results of analyzing survey data were collected from 200 subjects representing different age groups who have and want to travel to Tam Dao in many provinces and cities. Analyzing SPSS 20.0 and Amos 20.0 software, the authors cleaned the data in order of descriptive statistics, tested exploratory factors (EFA), tested confirmatory factors (CFA) and put produce the SEM linear structural model. The results show that there are 6 factors affecting the application of circular economy to tourist satisfaction including: Products/services (SP); Tour guide (HD); Service prices (GC); Infrastructure (CS); Local characteristics (DT); Circular tourism (CE). Research results can serve as a basis for proposing solutions to help develop the local economy. Research results help managers in their sustainable tourism development strategies, helping the tourism industry contribute to environmental protection, cultural preservation, extending product life cycles and bringing livelihoods to society.

Keywords: Circular economy; satisfaction; tourists; Tam Dao

Tóm tắt: Nghiên cứu được thực hiện nhằm xác định các yếu tố ảnh hưởng của áp dụng kinh tế tuần hoàn đến sự hài lòng của khách du lịch: nghiên cứu trường hợp tại huyện Tam Đảo – tỉnh Vĩnh Phúc. Kết quả phân tích dữ liệu khảo sát được thu thập từ 200 đối tượng đại diện cho các đội tuổi khác nhau đã và có nhu cầu đi du lịch tại Tam Đảo ở nhiều tỉnh thành. Sử dụng phần mềm SPSS 20.0 và phần mềm Amos 20.0, nhóm tác giả làm sạch dữ liệu theo thứ tự thống kê mô tả, kiểm định nhân tố khám phá (EFA), kiểm định nhân tố khẳng định (CFA) và đưa ra mô hình cấu trúc tuyến tính SEM. Kết quả cho thấy có 6 nhân tố ảnh hưởng đến áp dụng kinh tế tuần hoàn đến sự hài lòng của khách du lịch bao gồm: Các sản phẩm/dịch vụ (SP); Hướng dẫn viên du lịch (HD); Giá cả dịch vụ (GC); Cơ sở hạ tầng (CS); Đặc thù địa phương (DT); Du lịch tuần hoàn (CE). Kết quả nghiên cứu có thể làm cơ sở cho việc đề xuất giải pháp giúp phát triển kinh tế địa phương. Kết quả nghiên cứu giúp các nhà quản lý trong chiến lược phát triển du lịch bền vững giúp ngành du lịch đóng góp vào công cuộc bảo vệ môi trường, bảo tồn văn hóa, kéo dài vòng đời sản phẩm và mang lại sinh kế cho xã hội.

Từ khóa: Kinh tế tuần hoàn; hài lòng khách du lịch; khách du lịch, Tam Đảo

1. INTRODUCTION

Circular economy (CE) is an inevitable trend in the world's overall development in the context of increasingly degraded environmental conditions and limited resources. According to the Fllen Macarthur Foundation, by 2050 there will be more trash than fish in the ocean.

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Vietnam alone is one of the five countries in the world with the largest amount of untreated waste in the world with only 9% of plastic waste being recycled. However, paradoxically, Vietnam is having to import up to 80% of recycled plastic materials and 60% of recycled paper materials every year. Tourism is also an industry that contributes significantly to the amount of waste that is not recycled. According to statistics from the Institute of Tourism Research and Development (ITDR), in 2023 the tourism industry discharged 336,400 tons of unrecycled plastic waste into the environment.

Circular economy (CE) is an important way to contribute to a more sustainable tourism industry. The tourism industry has an important role to play because of its importance in the global economy. Therefore, it is imperative that there is a collective and multi-sectoral response to achieve a successful transition to a CE model in the tourism sector. Besides, applying circular economy to tourism companies is not only feasible but also reasonable, helping to restructure the company's value chain and value system (Angelis, 2018). And improving tourist satisfaction not only has positive effects on the tourism service provider and the destination's reputation, but also enhances tourist loyalty, lowering elasticity. of prices, lower future transaction costs and increase production efficiency. (Chen Y, 2012)

In Vietnam, these are just the first steps in applying circular economy to tourism, so there are no clear results yet. Recognizing the importance of circular economy (CE) in sustainable tourism development, the research team conducted a research on the impact of circular economy application on tourist satisfaction: a case study in Tam Dao district - Vinh Phuc province; Through this, we propose solutions to improve tourist satisfaction at the destination and at the same time propose solutions for sustainable tourism development to help reduce direct impacts on the environment, promote and develop sustainable tourism in Vietnam.

2. THEORETICAL BASIS

The concept of Circular Economy (CE) was first officially used by Pearce and Turner (1990). It is used to refer to a new economic model based on the basic principle that "everything is an input to something else", completely unlike the perspective of the traditional linear economy. (Pearce, & Turner, 1990)

According to Kotler and Amstrong (2013) customer satisfaction is the degree to which the perceived performance of a product matches the buyer's expectations. If the product's performance is perceived as not meeting customer expectations then the customer will be disappointed and vice versa. If the performance of the reviewed product matches the expected customer requirements then the customer will be satisfied. (Kotler & Amstrong, 2013).

There are not many research perspectives on circular economy in tourism, so the research team proposes the following understanding: "Circular economy in tourism is a

method of applying principles of circular economy to tourism sector. In which, products/services serving tourism after use can be recycled or can be used as ingredients or input materials for another product/service. The ultimate goal is to develop sustainable tourism, minimizing human impact on the environment and ecosystem."

2.1 Overseas studies

Today's economic activity is still based on a linear model of production and consumption: extraction/production and consumption/disposal, which depletes natural resources and creates waste. The current linear economy neither optimizes materials nor favors their recycling, reuse or recovery. Therefore, the Circular Economy (CE) concept is increasingly receiving attention from policymakers and stakeholders around the world. However, CE literature is mainly developed for the manufacturing sector and there are only a few references to the tourism sector even though this is a sector that consumes a lot of energy and water and wastes food, congestion issues and CO2 emissions. (Carlos Rodríguez, 2020)

At a special session of the European Economic Committee in Ganeva, May 9-12, 2022, serious consideration was given to the application of circular economy (CE) principles to tourism. With the aim of "Greening" the European economy towards sustainable tourism development; Set out circular economy principles to apply to tourism. However, the discussion session did not mention the contribution or influence of humans as the center of CE development.

Research by Grdićjel (2021) with the topic "Effect of circular economy on the sustainability of cultural tourism" (Croatia) shows that sustainable cultural tourism is based on the principles of circular economy. In addition to cultural tourism being linked to local values, pride in traditions, increased employment and life satisfaction of local people at the destination, it also creates significant pressures. tell the environment. Among them, waste generation is one of the most important issues, as it leads to larger environmental footprints and extreme environmental pressures, especially on coastal area ecosystems, mainly in the form of pollution and loss of biodiversity, discouraging others from traveling to such affected destinations. (Antonis A. Zorpas, 2021)

Research by Luna Santos-Roldán and colleagues with the topic "Sustainable Tourism as a Source of Healthy Tourism" (Luna Santos-Roldán, 2020) analyzed a sample of 308 tourists through structural equation models. structure using Partial Least Squares. The results show that tourists have a clear attitude towards developing Sustainable Tourism, motivated by the positive impacts and incentives it brings, as well as the satisfaction tourists feel when use responsible tourism.

Nedyalkova's research (2016), applying circular economy principles to sustainable tourism development, points out that one of the most attractive benefits of tourism is the

circular economic impact realized by using local history and heritage. A study by Chen (2021)on destination characteristics, travel satisfaction, and intention to return to Inner Mongolia was also conducted as rural tourism in China flourished.

In addition, the study "Socioeconomic Profile of Tourists with a Greater Circular Behavior and Factors Affecting the Implementation of Circular Practices in Hotels in a Mature Island Destination" (Programa de Doctorado & Turismo, 2022) said that the transition to a circular economy and tourism model CE models in island destinations will be a key element in current and future tourism policy. 86.5% of tourists perform the same CE activities on holidays as at their place of residence. Most tourists are willing to pay more for green environmentally friendly hotels, the majority of tourists believe that it is important for hotels to have energy saving policies.

Research by Carlos Rodríguez (2020) also shows that improper application of circular economy methods and principles is not only a factor affecting the environment but also a factor that causes reduce the attractiveness of the destination to tourists.

2.2. Domestic research

There are very limited topics related to the application of circular economy in tourism in the country. However, the application of circular economy to tourism to increase tourist experience has been mentioned and discussed in many economic conferences and articles.

In the seminar "Circular economy in tourism development", speaker Miquel Angel Perez Martorell pointed out that in tourism development, circular economy is considered an inevitable step when tourism resources are gradually changing, losing its inherent attractiveness under the impact of the environment and exploitation activities to serve tourists.

Developing community tourism in the direction of circular economy creates conditions for tourists to experience the lives of indigenous people, encouraging the role of indigenous people in forming typical tourism products and preserving and developing local people, promote traditional cultural values as well as local natural heritage. In community tourism, tourists are often very interested in and want to experience the natural environment, natural landscape, and cultural diversity of the community and locality. Therefore, education and communication to the community in protecting the environment and culture when developing tourism is essential. (Kien, 2023)

A study by Son (2015) showed that a number of factors affect tourist satisfaction when visiting Kim Bong traditional craft village - a famous carpentry craft village of Hoi An. The results show that tourist satisfaction is influenced by three components shown in order of importance (1) empathy; (2) trust; and (3) warranties. There are 5 factors that affect tourist satisfaction including reliability, responsiveness, assurance, empathy and tangibles. The study "Factors affecting tourist satisfaction at tourist destinations in Ho Chi Minh City" shows that tourist satisfaction has a relationship with the following factors: access cost

(ticket price); promptness and timeliness; uniqueness and attractiveness of tour content; Reasonable physical and technical facilities; service staff (friendly, knowledgeable in the field in charge); guest capacity; safety (travel, security, food, garbage) (Tuan, 2015)

Research by Nguyen Van Dinh (2021) with the topic "Factors affecting satisfaction and intention to return to tourist destinations in Bac Lieu city of domestic tourists" has built and verified factors affecting tourists' satisfaction and intention to return to tourist destinations in Bac Lieu city with representative factors in descending order of influence include: Satisfaction; Cultural and natural environment; Infrastructure for tourism; Accommodation facilities; Catering and entertainment services; Security, order and safety.

3. RESEARCH MODELS AND RESEARCH METHODS

3.1 Research models

The study conducted an investigation and survey of 200 valid questionnaires. In the study, the authors built a model and scale of factors affecting tourist satisfaction, ensuring the reliability of the research results. Thus, based on the opinions given from discussion, research team members and inheritance from published research models, the research team proposes the following research model:

The proposed research hypotheses are as follows:

H1: Local products/services have a positive impact on tourist satisfaction.

According to Loan (2023), diversity and richness, as well as the quality of products and services, contribute to enhancing the overall experience, and vice versa. Service quality has a significant impact and a positive correlation with customer satisfaction in the retail industry in Greece (Gounaris, 2003). Jamal and Anatassiadou (2007) affirm that service quality has a positive relationship with customer satisfaction in the banking sector in Greece. Similarly, the studies conducted by Hossain (2008) and Chen and Lee (2008) also support this viewpoint.

H2: Tour guides have a positive impact on tourist satisfaction.

According to Lin (2017), tour guides have a significant impact on customer experience. Being honest, reliable, and respectful towards tourists is crucial for promoting and enhancing the effectiveness of tourism activities (Ninpradith, 2020). Research has found a substantial relationship between customer satisfaction, customer loyalty, the competence of tour guides, and tour guiding services (Centikaya, 2016).

H3: Destination price has a positive impact on tourist satisfaction.

According to Loan (2023), the prices of tourism services have a positive impact on the evaluation of destination quality and tourist satisfaction. Also, according to Định (2021), perceived prices are considered one of the important factors used by researchers to measure the level of customer satisfaction.

H4: Infrastructure at the destination has a positive impact on tourist satisfaction

According to the study by Định (2021), both tourism infrastructure and accommodation facilities are two factors that positively influence the intention of tourists to return to Bạc Liêu province. According to Klimoska (2018), enhancing the construction of new facilities such as hotels and improving the efficiency of airports in Ohrid has attracted more tourists, especially from Poland, Turkey, and neighboring countries such as Bulgaria and Serbia.

H5: Local characteristics have a positive impact on tourist satisfaction

Regarding the factor of Local characteristics: This is also a factor that has a significant impact on tourist satisfaction (Cao Thị Thanh, 2021). In terms of influencing nature, authors such as Haider W. & (1990), Morey (1991), Crompton (1979), Hsu, Tsai, & Wu (2009), and Schroeder, H.W., & Louviere, J. (1999) argue that the characteristics/features of the destination are the most significant factors influencing the choice of travel destination. The research model by Keating, B. W., & Kriz, A. (2008) asserts that the more attractive the destination, the more it attracts tourists to seek out that destinatin.

H6: Applying circular economy has a positive impact on tourist satisfaction

Carlos Rodriguez (2020) indicates that the improper application of the methods and principles of the circular economy is not only an environmental concern but also a factor that diminishes the attractiveness of destinations for tourists. According to a study by Programa de Doctorado en Turismo (2022), transitioning to a Circular Economy model in island destinations will be a key factor in current and future tourism policies.
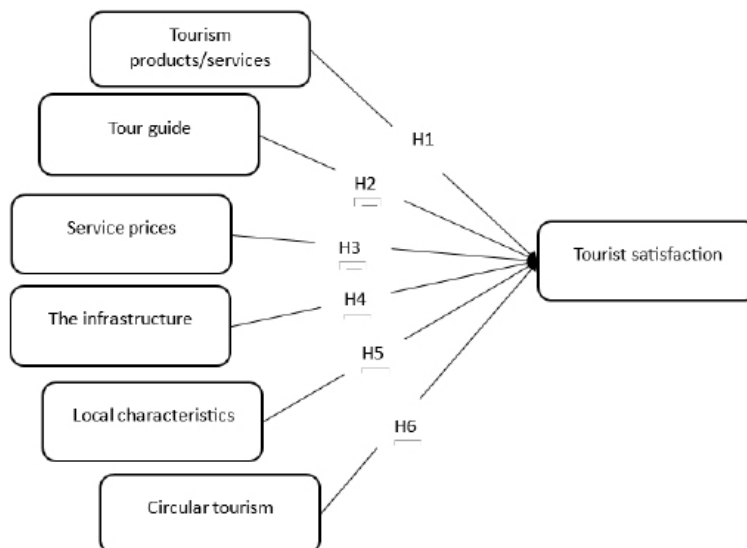

Figure 3.1. Research models

(Source: Compiled by the author group)

The theoretical model is built on the basis of identifying the main factors that can affect tourist satisfaction. The research team added a new variable called "circular economy", although there is no major research on how this variable affects tourist satisfaction, but on the basis of inheriting the results of previous studies. Here on this topic, the research team presented an overview and combined with quantitative research results through surveys, variables were screened to find factors and scales to evaluate influencing factors.

3.2. Research Methods

The research uses the approach of qualitative research combined with quantitative research.

For the quantitative research component, the research team utilized a random sampling method, focusing on tourists who have visited Tam Dao at least once. Following Hair *et al.*'s guidelines (2014), for Exploratory Factor Analysis (EFA), the minimum sample size should be five times the number of observed variables. In this study, there are 27 observed variables, so the minimum required sample size is 125. After data collection, we received 213 survey responses, of which 200 were deemed valid and included in the analysis.

Data processing: Using SPSS software with descriptive statistical analysis tools, Cronbach's alpha reliability analysis, EFA exploratory factor analysis.

Using AMOS software with CFA confirmatory factor analysis tool, analyze the linear structural model SEM.

3.3 Research results

3.3.1 Descriptive statistics

The group researched many subjects by occupation to ensure reliability, shown in Figure 3.1 as follows:
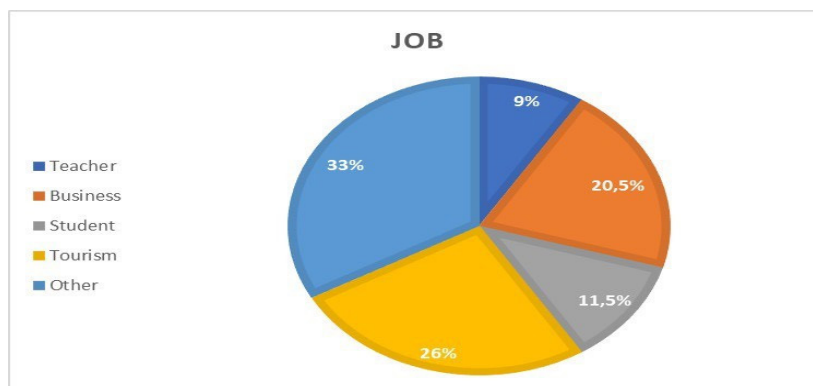

Figure 3.1. Occupation of research subjects

(Source: authors' statistics)

To ensure group representativeness, the research subjects surveyed groups with different distances to Tam Dao tourism according to 4 specific levels as shown in Figure 3.2. as follows:
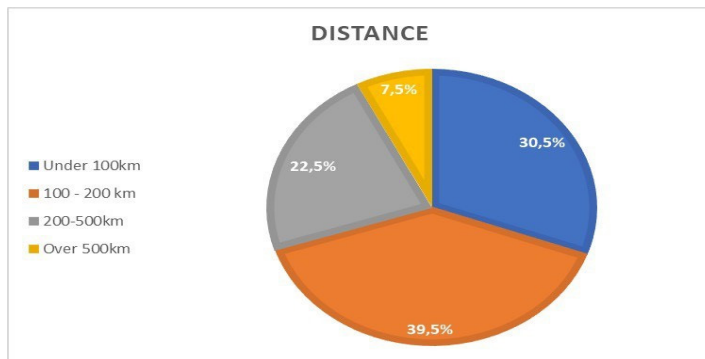

Figure 3.2. Distance from residence to Tam Dao

(Source: Authors' group statistics)

Regarding the type of visitors to Tam Dao, the authors surveyed 5 different types, shown specifically in Figure 3.3. Especially with resort tourism, which is the form chosen by many tourists.
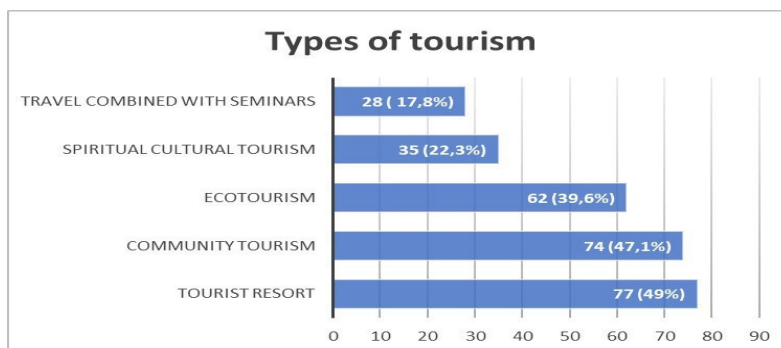

Figure 3.3. Type of tourism chosen to Tam Dao

(Source: Compiled by the author group)

The survey did not show much difference in gender, the majority were domestic tourists accounting for 86.5%. Tourists belong to a variety of professions, with the majority aged 18-30 years old (58.5%). Main income is from 5-10 million, accounting for 43%. The tourists surveyed were all visitors to Tam Dao at least once. The majority of tourists prefer resort tourism, accounting for 49%.

3.3.2. Conbach-alpha reliability test

Research by (Hair, 2009) suggests that a scale that ensures unidimensionality and reliability should set the Cronbach's Alpha threshold at 0.7 or higher. Nunnally (1978)

also believes that a good scale should have reliability. Reliable Cronbach's Alpha is 0.7 or higher. Considering the other important index Corrected Item - Total Correlation, the higher this value is, the better the observed variable is, indicating that the observed variables have a strong positive correlation with other variables in the scale. According to Cristobal *et al.* (2007): a good scale is when the observed variables have Corrected Item - Total Correlation values of 0.3 or higher.

Exploratory factor analysis (EFA)

After testing Conbach-alpha reliability with a sample size of 200, the research team eliminated 2 observed variables including CS3 and CE2 because the 2 observed variables had a total correlation coefficient > 0.3.

The results show that all scales have high reliability, the conbach-alpha coefficient is greater than 0.7. The variable-sum correlation coefficient of observed variables representing a concept is > 0.4, showing that these variables have a good correlation with the overall scale and are suitable to represent each concept. Products/services, Tour guides, Service prices, Local characteristics, Circular tourism, Tourist satisfaction. The scales will continue to be included in EFA and CFA analysis.

3.3.3 Exploratory factor analysis (EFA) for independent variables

According to Hair *et al.* (2004), factor loading coefficients are indicators to ensure the practical significance of EFA.

Factor loading

+ greater than 0.3 is considered the minimum level;

+ greater than 0.4 is considered important;

+greater than 0.5 is considered to have practical significance.

Therefore, after EFA, factors with factor loadings greater than 0.5 will be selected. Factor analysis is used when the Kaiser-Meyer-Olkin (KMO) coefficient has a large value (0.5→1) and the total variance extracted is greater than 0.5. In this study, method.

Principal Component with Varimax rotation will be used for factor analysis.

Table 3.1. Factor rotation matrix table:

Variable	Local characteristics	Service prices	The infrastructure	Circular tourism	Tour guide	Service products
DT5	0,882					
DT2	0,852					
DT4	0,831					
DT1	0,791					
DT3	0,780					

GC1	0,872				
GC4	0,808				
GC2	0,776				
GC3	0,746				
CS5		0,881			
CS1		0,808			
CS4		0,784			
CS2		0,758			
CE5			0,832		
CE3			0,760		
CE1			0,751		
CE4			0,744		
HD4				0,839	
HD1				0,732	
HD2				0,724	
HD3				0,674	
SP4					0,804
SP1					0,735
SP3					0,702
SP2					0,626
KMO = 0.841; Sig = 0.000; Extracted variance = 67.452; Eigenvalues = 1,302					

(Source: model running results of the authors)

According to the above results, all observed variables converged into 5 separate factor groups. KMO coefficient = 0.841 ensures reliability for factor analysis, extracted variance coefficient = 67.452 represents the variation of 6 factors representing 67.452% of the overall variation. This is a high rate, proving that the collected data has quite good convergence, representing well the 6 factors.

3.3.4 Exploratory factor analysis (EFA) for the dependent variable

Table 3.2. Exploratory factor for dependent variable

Biến	Hệ số tải
Tourist satisfaction	
HL3	0,902
HL4	0,901
HL1	0,900
HL2	0,872
KMO = 0,855; Sig = 0,000; Variance extract = 79,868; Eigenvalues = 3,195	

(Source: model running results of the authors)

The results show that exploratory factor analysis for the dependent variable also ensures reliability when KMO coefficient = 0.855, extracted variance = 79.868, representing a variation of 79.868%. Thus, factor analysis gives completely reliable results.

3.3.5. Confirmatory factor analysis

The results of exploratory factor analysis (EFA) showed the structure between the independent variables. To test the suitability of the model, the research team continued to use confirmatory factor analysis (CFA). According to Hu & Bentler (1999), Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives, Structural Equation Modeling, the indicators considered to evaluate Model Fit include:

CMIN/df ≤ 3 is good, CMIN/df ≤ 5 is acceptable

CFI ≥ 0.9 is good, CFI ≥ 0.95 is very good, CFI ≥ 0.8 is acceptable

GFI ≥ 0.9 is good, GFI ≥ 0.95 is very good

RMSEA ≤ 0.06 is good, RMSEA ≤ 0.08 is acceptable

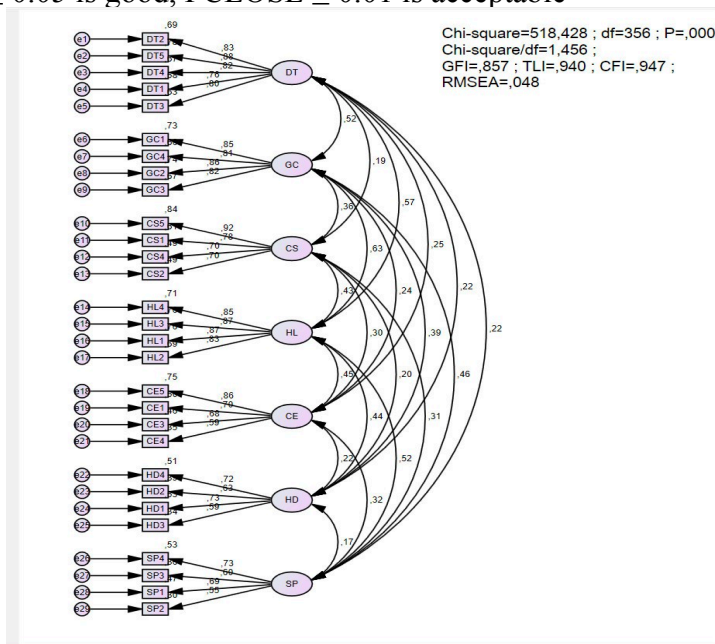PCLOSE ≥ 0.05 is good, PCLOSE ≥ 0.01 is acceptable

Figure 3.5. Results of confirmatory factor analysis CFA

(Source: Results of CFA software processing by the authors)

The results of confirmatory factor analysis CFA show that the standardized critical model has 356 degrees of freedom, the indicators measuring the model's fit with the value Chi-square/df = 1,456 < 3, TLI = 0.940 > 0.8, CFI = 0.947 > 0.9, GFI = 0.857 > 0.8 and RMSEA coefficient = 0.048 < 0.08 all meet the requirements. Thus, the results of confirmatory factor analysis ensure the necessary level of significance. The measurement scales ensure reliability.

3.3.6. Linear structural model analysis

The model has standardized 7 concepts that are included to test the appropriateness of the research model, including:

1- Products/services (SP)

2- Tour guide (HD)

3- Service price (GC)

4- Infrastructure (CS)

5- Local characteristics (DT)

6- Circular tourism (CE)

7- Tourist satisfaction (HL)

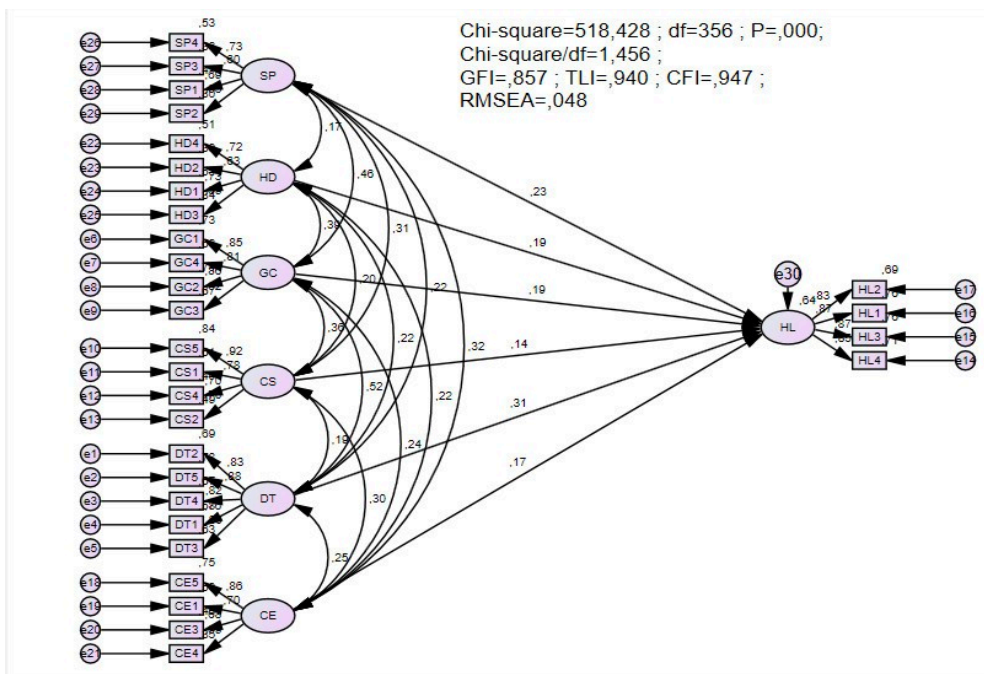**Figure 3.6. Test the Hypothesis using the SEM model**

(Source: Results of CFA software processing by the authors)

The structural model gives the following test values: Chi-square/df = 1.456 < 3, TLI = 0.940 > 0.8, CFI = 0.947 > 0.9, GFI = 0.857 > 0.8 and RMSEA coefficient = 0.048 < 0.08 all meet the requirements. All indicators meet the requirements, so the model is suitable for the market.

Table 3.3. The results give the test value

Dependent variable	Direction of impact	Independent variables	P-values	Estimate
HL	<------------	SP	0,002	0,229
HL	<-----------	HD	0,004	0,194
HL	<-----------	GC	0,016	0,193
HL	<-----------	CS	0,022	0,139
HL	<-----------	DT	0,000	0,310
HL	<-----------	CE	0,007	0,171

Source: Results of software processing by the author group

The results show: Local products/services (SP); Tour guide (HD); Service price (GC); Infrastructure (CS); Local characteristics (DT); Circular tourism (CE) has a positive and statistically significant impact on the dependent variable, Tourist Satisfaction (HL).

Conclusion: the hypotheses: H1, H2, H3, H4, H5, H6 are accepted and the standardized regression model is written as follows:

HL = 0.229*SP + 0.194*HD + 0.193*GC + 0.139*CS + 0.310*DT + 0.171*CE

The results show: Local products/services (SP); Tour guide (HD); Service price (GC); Infrastructure (CS); Local characteristics (DT); Circular tourism (CE) has a positive and statistically significant impact on the dependent variable, Tourist Satisfaction (HL).

4. DISCUSS THE RESULTS

4.1 Contribution

a. In terms of theory

This research delves into the profound impact of implementing a circular economy on tourist satisfaction, making a contribution by being the first to demonstrate the relationship between circular economy application factors and the tourist experience. It reaffirms the factors influencing tourist satisfaction while also asserting the relationship between the application of circular economy factors and the tourist experience.

b. In terms of practice

From the conclusions of the study, propose solutions and methods to apply circular economy in tourism. To improve destination quality, thereby increasing tourist satisfaction. Enhace tourists' awareness of environmental protection.Top of Form

4.2 Results

The results show that there are 6 factors including: Products/services (SP); Tour guide (HD); Service prices (GC); Infrastructure (CS); Local characteristics (DT); Circular tourism (CE) has a positive impact on Tourist Satisfaction (HL)

Tourism products are everything that customers feel during the travel process, including experiences, services, emotions, knowledge and memories (Kotler P., Keller, 2006). Product / tourism services have a positive impact on tourist satisfaction (b=0.229; P=0.002). The research results are supported by the studies of (Gounaris, 2003), (Jay, A.a, 2007), (Jamal, Anatassiadou, 2007), (Bui Thi Thu Loan, 2023).

According to the European Federation of Tour Guide Associations (EFTGA), a tour guide is defined as a person who "guides groups of individual tourists from abroad or from their home country to monuments, sites, and museums of a city or region; to interpret in an inspiring and interesting way, in the language of the visitor's choice, the cultural, natural and environmental heritage". Tour guides have a positive impact on tourist satisfaction (b=0.194; P=0.004). The research results are supported by studies by (Yi-Chien Lin, M.L.L., 2017); (Centikaya & Oter, 2016); (Pereira, 2015).

Tosun and colleagues (2013) believe that: the price of tourism services is all the costs that tourists have to pay during the journey: travel costs, accommodation costs, accommodation costs, and guide costs. pellets. Service price has a positive impact on tourist satisfaction (b=0.193; P=0.016). The research results are supported by research by (Bui Thi Thu Loan, 2023); (Nguyen Van Dinh, Le Thi Mai Huong, Cao Thi Sen, 2021).

Infrastructure is the physical elements that create the landscape and environment at thedestination. Infrastructure is one of the investment items that requires large investment capital. Infrastructure has a positive influence on tourist satisfaction (b=0.139; P=0.022). The research results are also supported by research by (Nguyen Van Dinh, Le Thi Mai Huong, Cao Thi Sen, 2021; Tuan,2015; Klimoska, 2018).

Local characteristics are the geographical, cultural, economic, social, and natural environment characteristics of the destination. This factor can make a big difference for each different destination. Local characteristics have a positive impact on tourist satisfaction (b=0.310; P=0.000). The research results are supported by research by (Cao Thi Thanh, Pham Thu Ha, 2021); (Haider, 1990); (Morey, E.R, 1991); (Crompton, 1979); (Hsu, Tsai, & Wu., 2009); (Schroeder, H. W., & Louviere, J. ., 1999); (Keating, B. W., & Kriz, A., 2008).

Circular economy in tourism is a method of applying circular economy principles to the tourism sector. In which, products/services serving tourism after use can be recycled or can be used as ingredients or input materials for another product/service. The ultimate goal is to develop sustainable tourism, minimizing human impact on the environment and ecosystem. Circular tourism has a positive impact on tourist satisfaction (b=0.171; P=0.007). This is a completely new factor that has been researched into the model, however the research results are supported by (Carlos Rodríguez, 2020); (Programa de Doctorado en Turismo, E. y., 2022).

4.3. Limitations of the study

The research team acknowledges that the study model has limitations in terms of sample size. The new CE factor has not achieved a satisfactory level of assessment. Therefore, further studies should continue to collect and analyze data more rigorously to develop a more comprehensive and accurate research model. This also opens up new avenues for future research on the circular economy (CE).

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ENHANCING THE CAPACITY TO MEET THE ASEAN 2023 "GREEN HOTEL" STANDARDS OF HOTEL DES ARTS SAIGON

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Abstract: *Standardizing service quality is a crucial goal for member countries in the ASEAN region in the field of tourism. The ASEAN Tourism Standards 2023 are built on the unified foundation of member countries, comprising 8 elements. To assess hotel quality, the ASEAN Secretariat has introduced the ASEAN Green Hotel Standards. Through on-site surveys, this article analyzes the Hotel des Arts Saigon's compliance with the ASEAN Green Hotel Standards based on 11 criteria within the standard set. The results indicate that the hotel operates with a sustainable development orientation, meeting most criteria. However, to achieve the "ASEAN Green Hotel" designation, the hotel needs to implement additional measures to ensure comprehensive compliance with the standards.*

Keywords: *ASEAN Tourism Standards, Green Hotel, Hôtel des Arts Saigon, sustainable development.*

Tóm tắt: *Việc tiêu chuẩn hóa chất lượng dịch vụ là một mục tiêu quan trọng đối với các quốc gia thành viên trong khu vực ASEAN trong lĩnh vực du lịch. Tiêu chuẩn Du lịch ASEAN 2023 được xây dựng trên cơ sở thống nhất của các quốc gia thành viên, bao gồm 8 yếu tố. Để đánh giá chất lượng khách sạn, Tổ chức Bí mật ASEAN đã giới thiệu Tiêu chuẩn Khách sạn Xanh ASEAN. Thông qua các cuộc khảo sát trực tiếp, bài viết này phân tích sự tuân thủ của Khách sạn des Arts Sài Gòn đối với Tiêu chuẩn Khách sạn Xanh ASEAN dựa trên 11 tiêu chí trong bộ tiêu chuẩn đặt ra. Kết quả cho thấy khách sạn hoạt động với hướng phát triển bền vững, đáp ứng đa số các tiêu chí. Tuy nhiên, để đạt được danh hiệu "Khách sạn Xanh ASEAN", khách sạn cần triển khai các biện pháp bổ sung để đảm bảo tuân thủ toàn diện với các tiêu chuẩn.*

Từ khóa: *Tiêu chuẩn Du lịch ASEAN, khách sạn Xanh, Hôtel des Arts Sài Gòn, phát triển bền vững.*

1. INTRODUCTION

The "ASEAN Tourism Development Strategy 2016-2025" sets the vision for ASEAN to become a "high-quality tourism destination" by 2025, offering diverse and unique experiences to visitors while promoting sustainable, responsible, comprehensive, and balanced development. This approach aims to significantly contribute to the socio-economic development of the region's inhabitants. To realize this vision, the strategy outlines two major directions: (1) Enhancing the competitive capacity of ASEAN tourism as a collective destination and (2) Ensuring sustainable and comprehensive development (Vietnam National Tourism Administration, 2016).

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According to the ASEAN Secretariat, in 2019, international tourist arrivals to the ASEAN region reached approximately 143.5 million, accounting for 9.6% of the global total, with a growth rate of 6.1%, surpassing the world's average growth rate of 4% (Tourism Information Center, 2022). In 2022, after coping with the challenges posed by the COVID-19 pandemic, the tourism sector in ASEAN countries has rebounded, demonstrating readiness to welcome international visitors. The increasing number of international tourists in ASEAN not only contributes to high economic efficiency but also creates growing pressure on sustainable management in the tourism sector. To mitigate the negative impacts of rapid development, consensus and commitment from all stakeholders are essential.

In this context, the ASEAN Tourism Standards in general and the ASEAN Green Hotel Standards in 2023, in particular, emerge as a significant initiative to promote sustainable tourism measures in the region. Widely implemented in ASEAN member countries, these standards aim for environmentally friendly and energy-efficient practices.

The ASEAN Green Hotel Standards not only provide guidelines and methods for implementation but also emphasize essential requirements and actions that every accommodation facility should undertake (Vietnam National Tourism Administration, 2023). The main goal is to develop tourism sustainably while preserving and conserving the surrounding environment, aligning with the crucial objective of eradicating hunger and reducing poverty in communities (Nguyen. T. V. H. , 2022). This is a crucial step in reshaping the way tourism is conducted, creating positive experiences for tourists and contributing to the sustainable prosperity of the ASEAN region.

As part of the upscale Boutique hotel chain MGallery by the global Accor group, Hôtel des Arts Saigon officially commenced operations in Vietnam in 2015. Going beyond providing unique experiences, the hotel is committed to sustainable development, focusing on environmental considerations through technological solutions. Aligned with the goals of the ASEAN tourism industry, Hôtel des Arts Saigon has ample opportunities to achieve the 'ASEAN Green Hotel' designation.

This article analyzes the initial steps in assessing Hôtel des Arts Saigon's compliance with the ASEAN Green Hotel Standards. This critical evaluation not only identifies the strengths and weaknesses of the hotel but also presents specific solutions, helping the hotel not only meet but exceed the criteria. This effort not only enhances competitive advantages but also attracts travelers interested in sustainable tourism.

2. RESEARCH CONTENT

2.1. Research Methodology

Document analysis method: To contribute to the theoretical foundation, the author utilized information collected and analyzed from the ASEAN Tourism Standards 2023 and

related research works. Additionally, internal documents of Hotel des Arts Saigon were also incorporated by the author to gain a deeper understanding of the current situation and the hotel's capacity to serve guests.

Observational method: The observational method was conducted by the author group following the document analysis step regarding the standards. The author group conducted an evaluation survey of the hotel's quality based on 11 standards. Additionally, for aspects not observable through direct observation, the author group conducted in-depth interviews with the hotel's manager and staffs. The observational method was employed as a means to validate the hotel's quality against the ASEAN Tourism Standards 2023.

2.2. Introduction to Hôtel des Arts Saigon

Hôtel des Arts Saigon is a luxury boutique hotel under the MGallery brand of the Accor group. Blending classic and modern design, the space at Hôtel des Arts Saigon resembles an art museum, creating a private and unique experience. Located at 76-78 Nguyen Thi Minh Khai, District 3, Ho Chi Minh City, the hotel is strategically situated near popular tourist attractions such as Ben Thanh Market, Notre-Dame Cathedral Basilica of Saigon, and Diamond Plaza shopping center. Highly acclaimed within the MGallery system, Hôtel des Arts Saigon has received numerous prestigious awards, notably "The Best Boutique Hotel in Vietnam 2021" and "The Best Culinary Experience in Vietnam 2021" (Hôtel des Arts Saigon, 2019).

The hotel not only focuses on space and interior design but also emphasizes personalized experiences, ranging from cuisine to music. With four restaurants and bars, Hôtel des Arts Saigon offers unique and diverse culinary experiences. The 23rd-floor Social Club, designed by the Japanese firm Super Potato, recreates the ambiance of Indochina in the 1930s. Guests can also enjoy a relaxing atmosphere at the Social Pool Bar, offering beautiful city views. The hotel boasts 168 rooms, from Deluxe to Executive Studio Suites, all equipped with modern amenities and infused with an artistic flair (Carl Gagnon, 2019).

Hôtel des Arts Saigon's vision is to build a diverse and professional staff, creating a positive working environment and connecting with all MGallery hotels worldwide. The hotel's mission is to become a top-notch brand, providing sophisticated services and excellent cuisine, constantly improving and training its staff. Hôtel des Arts Saigon is not just a place to stay but also an artistic destination, celebrating art in various forms.

2.3. Introduction to the ASEAN Green Hotel Standards 2023

The ASEAN Tourism Standards in general, and the ASEAN Green Hotel Standards in 2023 specifically, are widely implemented to promote sustainable tourism in the region. These standards set high goals for environmental friendliness and energy conservation. To assess ASEAN Green Hotels, there are 11 criteria, including environmental policies, use of green products, community collaboration, workforce development, waste management,

energy efficiency, water use efficiency, air quality management, noise control, wastewater treatment, and chemical management (Vietnam National Tourism Administration, 2023).

Environmental policies focus on active engagement of staff and customers, raising awareness, and managing the hotel's environmental impact. The use of green products involves prioritizing local and environmentally friendly products. Community collaboration focuses on improving the quality of life and environmental awareness. Workforce development includes environmental management training. Waste management emphasizes reduction, reuse, recycling, and waste categorization. Energy efficiency and water use efficiency require the application of energy-saving technologies and rigorous management. Air quality management concentrates on smoking and non-smoking areas. Both noise control and wastewater treatment are carried out to ensure a quiet and clean environment. Lastly, chemical management ensures the safe and efficient use and disposal of hazardous substances, including education and information for staff and customers.

All these measures highlight the hotel's commitment to sustainable tourism and environmental protection, creating a positive experience for customers and contributing to the sustainable prosperity of the ASEAN region.

2.4. Evaluation of the Implementation of the ASEAN Green Hotel Standards 2023 for Hôtel Des Arts Saigon

Table 1: Preliminary Assessment Results of ASEAN Green Hotel Standards Criteria at Hôtel Des Arts Saigon

Requirement	Evaluation Criteria	Check	
		1	0
Environmental Policy and Hotel Management	Encourage participation of staff, customers, and suppliers in environmental management activities	✓	
	Have a plan to enhance employee awareness of the environment	✓	
	Have a plan for environmental management in hotel operations	✓	
	Implement a program to monitor the hotel's environmental management activities	✓	
Use of Green Products	Encourage the use of local products in hotel operations (food, handmade crafts, etc.)	✓	
	Encourage the use of environmentally friendly products	✓	
Collaboration with the Community and Local Organizations	Have a plan/activity to improve the community's quality of life	✓	
	Have a program to raise local community awareness of environmental protection		✓
	Organize activities to promote and introduce local culture, folk art, and lifestyle...	✓	
	Create employment opportunities for the local community	✓	
Workforce Development	Have training programs on environmental management for hotel staff and management	✓	

		✓	
Solid Waste Management	Implement waste management technologies, e.g., waste reduction, reuse, recycling, and waste categorization	✓	
	Encourage staff to implement waste reduction, reuse, recycling, and waste categorization	✓	
	Encourage guests to participate in waste reduction, reuse, recycling, and waste categorization	✓	
Energy-Efficient Use	Introduce energy-saving technologies, devices to reduce energy consumption		✓
	Install devices to monitor and control energy consumption		✓
	Encourage guests to save energy	✓	
Efficient Water Use and Water Quality	Introduce technologies, techniques, and equipment to conserve water and reduce consumption		✓
	Regularly maintain water-saving equipment	✓	
	Encourage guests to save water	✓	
	Ensure the quality of water used in the hotel	✓	
Air Quality Management (Indoor and Outdoor)	Design non-smoking and smoking areas	✓	
	Regularly monitor, maintain equipment and facilities of the hotel to ensure air quality. Examples: air conditioning, ventilation systems...	✓	
Noise Control	Have a program to control noise in hotel operations	✓	
Wastewater Treatment and Management	Have measures to prevent water pollution and minimize wastewater	✓	
	Enhance the use of recycled/gray water in operations (watering plants, etc.)	✓	
	Encourage appropriate use of treated wastewater	✓	
Chemical and Hazardous Waste Management	Clearly provide signs for hazardous substances	✓	
	Properly manage hazardous waste	✓	
	Regularly inspect, clean, and maintain storage areas to prevent leaks of gases, gas, or hazardous chemicals	✓	

The preliminary survey results based on the 11 standards with 30 specific criteria of the ASEAN Green Hotel Standard at Hôtel Des Arts Saigon indicate that the hotel has achieved 26 out of 30 criteria. Specifically:

Four criteria do not meet the ASEAN Green Hotel Standard 2023, including: 1-Having a program to enhance the local community's awareness of environmental protection; 2-Introducing energy-saving technologies, devices to reduce energy consumption; 3-Installing devices to monitor and control energy consumption; 4-Introducing technologies, techniques, and equipment to conserve water and reduce consumption.

Eight out of eleven standards meet 100% of the criteria, including: 1-Environmental Policy and Hotel Management; 2-Use of Green Products; 3-Workforce Development; 4-Solid Waste Management; 5-Air Quality Management (Indoor and Outdoor); 6-Noise Control; 7-Wastewater Treatment and Management; 8-Chemical and Hazardous Waste Management.

Three out of eleven standards haven't meet 100% of the criteria, including: 1-Collaboration with the Community and Local Organizations (achieving 75%, 3/4 criteria); 2-Efficient Energy Use (achieving 25%, 1/4 criteria); 3-Efficient Water Use and Water Quality (achieving 75%, 3/4 criteria).

3. DISCUSSION

3.1. Strengths

The Hôtel des Arts Saigon demonstrates an unwavering commitment to environmental sustainability and effective hotel management, achieving a perfect score of 100% in the Environmental Policy and Hotel Management category. This underscores the establishment of a robust sustainable strategy, ensuring that the entire spectrum of stakeholders adheres to stringent environmental rules and policies. The hotel's utilization of green products, also scoring 100%, not only minimizes negative impacts on the environment but also bolsters its standing within both the local community and the broader industry.

Furthermore, the hotel excels in Solid Waste Management, achieving a flawless 100% score. This indicates the successful implementation of comprehensive measures to curtail and manage waste effectively. The commendable performance in Noise Control, scoring 100%, reflects the hotel's adept handling of this crucial aspect, benefiting both customer experience and the broader environmental context.

3.2. Weaknesses

While Hôtel des Arts Saigon has achieved significant milestones in meeting the ASEAN Green Hotel Standard 2023, it is imperative to address certain areas where the hotel falls short.

The absence of a prominent program to enhance community awareness of environmental protection is evident in the 0% score in Enhancing Local Community Awareness of Environmental Protection. To fortify the hotel's commitment to sustainability, it is crucial to formulate and implement plans and strategies aimed at promoting community engagement and awareness.

Similarly, the scores of 0% in the Introduction of Energy-Saving Technologies and Equipment, Installation of Energy Consumption Measurement and Monitoring Devices, and Introduction of Technologies, Techniques, and Equipment to Conserve Water highlight key areas requiring attention. To mitigate energy consumption, the hotel should review and implement specific measures related to energy-saving technologies. Additionally, installing devices for measuring and monitoring energy consumption, as well as adopting water conservation technologies and techniques, are essential steps in bolstering the hotel's sustainability initiatives.

In conclusion, while Hôtel des Arts Saigon has made significant strides in achieving the ASEAN Green Hotel Standard 2023, focused efforts are needed to address the

identified weaknesses. Comprehensive compliance with these standards will not only enhance the hotel's overall sustainability performance but also solidify its position as a leader in environmentally responsible hospitality.

3.3. Recommendations

Enhance Community Awareness Program: To fortify the commitment to environmental protection, Hôtel des Arts Saigon should initiate a comprehensive "Enhance Community Awareness Program." This multifaceted initiative involves organizing a series of events, workshops, and communication campaigns aimed at strengthening community awareness of environmental issues. Collaborating closely with the local community, the hotel should develop educational programs that empower residents with knowledge and inspire proactive involvement in environmental projects.

Energy Savings with IoT Technology: A transformative step towards energy conservation involves the implementation of cutting-edge IoT (Internet of Things) technology. The smart system can monitor the environment via sensors and IoT objects and carry out automatic activities. According to Chuah (2014), IoT operates across three distinct layers: smart systems for data acquisition, connectivity for data transmission, and analytics for triggering actions in other IoT devices. For a hotel to be considered intelligent, it must uphold ecological, economic, and socio-cultural sustainability principles, thereby creating value for all stakeholders, as suggested by Kua & Lee (2002). Such a building should prioritize environmental friendliness, adaptability in space utilization, operational effectiveness and efficiency, reliance on renewable energy sources, and dynamic monitoring of safety and security concerns like fire and earthquakes. Moreover, it should align with stakeholders' expectations and demonstrate flexibility in embracing new technologies, as noted by Ghaffarianhoseini et al. (2015). By creating a smart hotel environment, Hôtel des Arts Saigon can exercise precise control over energy consumption. Smart energy grids, equipped with sensors and IoT devices, will be instrumental in preventing energy wastage and optimizing energy transmission, thereby minimizing inefficiencies across the entire spectrum of operations.

Application of AI for Energy Consumption Monitoring: Innovatively integrating Artificial Intelligence (AI) into the energy management framework, the hotel can achieve unparalleled efficiency. AI can dynamically adjust temperature and airflow based on predictive models, ensuring optimal guest comfort without unnecessary energy consumption. Moreover, real-time monitoring of HVAC device usage using AI can detect potential issues, such as water leaks or malfunctioning equipment, facilitating prompt and proactive maintenance. Artificial Intelligence (AI) not only facilitates human-to-machine interaction but escalates to machine-to--machine interoperation. Hitherto, AI has been involved in customer services, strategic planning and forecasting. With the incorporation of external data and parameters, decision-making processes become more comprehensive, leading to enhanced resource utilization and competence. This esults to a better marketing strategy planning, financial management and manpower adjustments (Claveria, Monte, &

Torra, 2015; Huang, 2014). More applications and usages are emerging to add value to all processes such as voice recognition enables hotel guest to interact with robot concierge and obtain required travel information at their own language and pace.

Amphiro Meter Measurement Device: Introducing the state-of-the-art Amphiro Meter from the esteemed German company Amphiro can revolutionize water usage monitoring during bathing. This device provides real-time data, enabling flexible energy-saving management. To complement its introduction, the hotel should conduct awareness campaigns using visual simulations of climate change effects, encouraging guests to adopt shorter shower times and actively participate in water conservation efforts.

Community Collaboration and Efficient Energy Use: The hotel should proactively strengthen collaboration with the local community and relevant organizations to ensure the adoption of energy-efficient measures. Through meaningful cooperation, Hôtel des Arts Saigon can actively promote and contribute to the development of clean energy projects, reinforcing its role as a responsible and sustainable entity within the community.

Wastewater Management and Treatment: Modernizing wastewater management is imperative for environmental responsibility. The hotel should invest in contemporary methods and technologies to improve wastewater treatment. Simultaneously, conducting awareness campaigns among staff and customers will foster a culture of responsible wastewater management, aligning with global sustainability goals.

Addressing Remaining Weaknesses: A well-defined plan and strategy are essential for addressing the four criteria where the hotel has not met the standards. Hôtel des Arts Saigon should organize targeted campaigns and programs to ensure all elements of the local community are connected and actively engaged in environmental protection activities. This holistic approach will not only rectify existing weaknesses but also create a sustainable framework for continuous improvement.

Technology within the hospitality sector serves multiple purposes beyond merely enhancing operational efficiency, as noted by Yu & Lee (2009). It also plays a pivotal role in co-creating customer experiences (Neuhofer et al.,2015), improving organizational performance (Melián-González & Bulchand-Gidumal, 2016), and disseminating marketing information (Okumus, 2013). With the advent of electronic marketing campaigns, there has been a significant shift towards collaborative creation through social media platforms. These platforms not only influence customers' pre-purchase and on-site behavior but also provide a real-time interactive avenue for communication with both existing and potential customers throughout their journey, as emphasized by Buhalis & Foerste (2015).

By diligently implementing these recommendations, Hôtel des Arts Saigon can significantly enhance its compliance with the ASEAN Green Hotel Standard 2023. This commitment not only contributes to environmental conservation but also strengthens the hotel's ties with the local community, establishing it as a beacon of sustainable hospitality in the region.

4. CONCLUSION

Drawing conclusions from the analysis and evaluation of Hôtel des Arts Saigon's compliance with the ASEAN Tourism Standard 2023, noteworthy insights emerge regarding the hotel's dedication and performance in meeting sustainability criteria.

The hotel has exhibited a robust commitment to sustainable development, attaining a commendable level of compliance with 26 out of the 30 criteria assessed. This underscores the considerable efforts made by the hotel in seamlessly integrating sustainable standards into its overarching business model and day-to-day management practices.

However, despite this overall positive performance, there remain four criteria that fall short of meeting the ASEAN 2023 standards, with a notable emphasis on enhancing local community awareness of environmental protection. This discrepancy presents an opportune moment for the hotel to redirect its focus toward these specific areas, implementing targeted activities and programs to elevate social consciousness about environmental protection.

The evaluation not only identifies areas for improvement but also proposes concrete solutions to enhance compliance, encouraging the hotel to pursue the prestigious "ASEAN Green Hotel" designation. This not only serves as a meaningful acknowledgment of the hotel's sustainability endeavors but also acts as a catalyst to augment its public image, appealing to a growing demographic of customers inclined towards sustainable tourism.

While Hôtel des Arts Saigon has made substantial progress, continual improvement and innovative approaches to meet the ASEAN Tourism Standard 2023 are imperative. These efforts are crucial not only for sustaining the hotel's position in the competitive sustainable tourism industry but also for meeting the escalating expectations of environmentally conscious customers. By steadfastly embracing these initiatives, the hotel can solidify its standing as a leader in sustainable hospitality and align itself with the evolving landscape of responsible tourism.

Although the article only analyzes the compliance with the ASEAN Tourism Standards 2023 of Hôtel des Arts Saigon, it demonstrates the hospitality industry's interest in sustainable development, particularly in the environmental aspect aligned with the region's general direction. Establishing 11 standards with 30 criteria for constructing green hotels will standardize the quality of services in the hospitality industry. The goal of setting evaluation standards, along with the findings of the study, aims to contribute to the dissemination of the ASEAN 2023 Green Tourism Standards and the environmental protection message, towards the sustainable development of the tourism sector.

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INFLUENTIAL FACTORS ON THE INTENTION TO CHOOSE TO STAY AT SUSTAINABLE ACCOMMODATION SERVICE BUSINESS MODELS OF VIETNAMESE TOURISTS

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Abstract: *This study proposes solutions to help accommodation businesses better align with customer preferences, improving their reputation and revenue. Drawing on domestic and international research with a sample of 132 observations is analyzed using multivariable linear regression. Key findings show that the most impactful factor is the availability of tangibles, followed by attitude towards society, motivation, attitude towards the environment, economic considerations, and subjective norms. Perceived quality does not significantly impact choice. Administrative recommendations aim to help accommodation owners understand tourist psychology and enhance competitiveness through improved service quality and unique, meaningful experiences. This approach supports sustainable tourism and environmental preservation while creating positive value for businesses and local communities.*

Keywords: *Vietnamese tourists, choice intention, sustainable accommodation, service; Business models.*

Tóm tắt: *Nghiên cứu này đề xuất các giải pháp để giúp các doanh nghiệp lưu trú điều chỉnh tốt hơn với sở thích của khách hàng, nâng cao uy tín và doanh thu của họ dựa trên nghiên cứu trong nước và quốc tế với một mẫu gồm 132 quan sát được phân tích bằng phương pháp hồi quy tuyến tính đa biến. Các kết quả chính cho thấy rằng yếu tố ảnh hưởng lớn nhất là sự có sẵn của các yếu tố hữu hình, tiếp theo là thái độ đối với xã hội, động cơ, thái độ đối với môi trường, xem xét kinh tế và quan điểm chủ quan. Chất lượng được nhận thức không ảnh hưởng đáng kể đến sự lựa chọn. Các khuyến nghị quản lý nhằm giúp chủ nhân chỗ ở hiểu tâm lý du khách và tăng cường sự cạnh tranh thông qua cải thiện chất lượng dịch vụ và trải nghiệm độc đáo, ý nghĩa. Phương pháp này hỗ trợ du lịch bền vững và bảo tồn môi trường trong khi tạo ra giá trị tích cực cho doanh nghiệp và cộng đồng địa phương.*

Từ khóa: *Du khách Việt Nam, ý định lựa chọn, chỗ ở bền vững, dịch vụ, mô hình kinh doanh.*

1. INTRODUCTION

Vietnam is observing a positive development from one of the key economic sectors that has an important contribution to the country's GDP - Tourism. Based on analysis from the first quarter of 2023 by the General Statistics Office, the service sector contributed

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95.91% to the overall GDP growth (increase by 6.79%); In contrast to the deceleration of industries in the industrial and construction sectors (decrease by 0.4%); and the relatively slow-growing of the agriculture, forestry, and fishery sector (only a slight increase of 2.52%) (General Statistics Office of Vietnam, 2023). As soon as reopening after the COVID-19 pandemic, in 2022, far exceeding the initially targeted number of 60 million domestic tourists, Vietnam's tourism industry welcomed about 101.3 million tourists from all over the world. The total Vietnam tourism revenue was estimated to be up to 495 trillion VND (General Department of Tourism, 2022). Vietnam's economic situation is creating very ideal conditions for accommodation service businesses to develop.

Accompanying the growth of tourism are negative impacts on the environment such as destruction of natural areas, pollution, land degradation, and assimilation of unique cultural identities of a nation. Deal with these negative issues, sustainable tourism development inevitably becomes a trend that plays an important role, creating long-term tourism value for the entire tourism industry system. In addition, facing the global economic recession at the end of 2022 and 2023 (Ministry of Finance, 2022), the pandemic corollary, and the complicated climate change in recent years, many tourists have gradually become interested in sustainable consumption in tourism spending and in choosing sustainable tourist destinations and accommodation locations.

In a highly competitive environment, understanding the factors influencing tourists' choice of sustainable accommodation is crucial for businesses in this sector, however, there is limited research on factors affecting Vietnamese tourists' choices in this regard. Therefore, the study was carried out in order to reflect the insight needs of Vietnamese tourists in the most objective way when choosing to stay at sustainable business models. From there, providing valuable information and detailed analysis of influencing factors so that tourism businesses can adjust their business strategies and provide the best accommodation services to attract and retain customers, creating long-term competitive advantages for the sustainable accommodation service industry in the future.

2. THEORETICAL FRAMEWORK

2.1. Sustainable tourism development

Sustainable tourism is a multifaceted approach that strives to balance immediate tourism demands with the long-term preservation of essential resources. It encompasses resource management to address socio-economic requirements, cultural heritage preservation, biodiversity, ecosystems, and the support of local communities (World Tourism Organization, 1998).

Sustainable tourism is composed of three core elements: environmental sustainability, social sustainability, and economic sustainability (International Ecotourism Society, 2004).

2.2. Sustainable accommodation service business model

Accommodation services are one of the business elements of tourism, where short-term accommodation facilities serve the accommodation needs of people traveling on vacation or business (Vietnam Tourism Law, 2017).

Green or eco-friendly hotels, as defined by Lee and Cheng in 2018, focus on environmental protection, energy efficiency, and carbon emission reduction. These business models integrate sustainable practices and standards into their daily operations, per the Green Hotel Association in 2011, appealing to environmentally-conscious travelers.

2.3. Consumer intention

As per Ajzen and Fishbein (1980), consumers' beliefs regarding their consumption behavior form the basis for their consumption intentions. In simpler terms, customers' intention, as explained by Ramayah and colleagues in 2010, reflects an individual's determination to act in a specific way. However, purchase intention can waver under the influence of perceptions related to quality, price, and value (Zeithaml, 1988) and (Grewal, 1998)

The intention to consume sustainable services and products represents a particular avenue for environmental protection, denoting consumers' considerations of the environment during consumption (Zia-ur-Rehman et al., 2013). Han and his team (2010) employed Ajzen's theory of planned behavior model, revealing that attitudes, subjective norms, and perceived behavioral control positively impact the intention to stay in green hotels.

2.4. Approach to model building and hypotheses

2.4.1. Attitude towards the environment and Attitude towards society

According to the theory of reasoned action (TRA) by Ajzen and Fishbein, behavioral intention, driven by attitudes and subjective norms, is a crucial determinant of human behavior. In TRA, consumer behavioral attitudes are shaped by beliefs, perceptions, and evaluations of product attributes. Subjective norms typically involve the influence of individuals like friends, family, or colleagues on consumption decisions.

The Theory of Planned Behavior (TPB) model (Ajzen and Fishbein, 1985) extends the TRA theory by introducing behavioral control. It identifies three core determinants of actual behavioral tendencies: personal factors (i.e., subjective attitude towards behavior), subjective norms (reflecting perceived societal pressure), and the crucial element of behavioral control, synonymous with self-awareness and the ability to execute the behavior.

Moreover, Moutinho's model (1993) underscores the pivotal role of attitudes and social factors in shaping behavioral intentions, particularly within the tourism industry. Social factors, including family, culture, and the influence of others, can exert pressure and impact consumer decisions.

As such, the author proposes two hypotheses: "Attitude towards the environment" and "Attitude towards society" positively influence the intention of Vietnamese tourists to select sustainable accommodation services.

H1: Attitude towards the environment exert a positive influence (+) on the intention of Vietnamese tourists to opt for sustainable accommodation services.

H2: Attitude towards society exert a positive influence (+) on the intention of Vietnamese tourists to opt for sustainable accommodation services.

2.4.2. Subjective norms

Subjective norms pertain to the significant influence of an individual's consumption intentions by the surrounding social environment. In addition to the TPB model, research conducted by Cathy H.C. Hsul and Songshan (2010) highlights that this factor wields the most substantial impact on consumers' behavioral intentions. In light of this, the research team puts forth research hypothesis H3 as follows:

H3: Subjective norms exert a positive influence (+) on the intention of Vietnamese tourists to opt for sustainable accommodation services.

2.4.3. Perceived quality

Zeithaml's model (1998) asserts that brand and price constitute core elements of perceived quality. A model developed by Dodds, Monroe, and Grewal (1991) examines how external factors (brand, price, etc.) influence consumer product perceptions and awareness. These factors not only directly affect but also create an indirect impact on consumer awareness and behavior. This research underscores the importance of consumer-perceived value. From here, the author proposes the fourth factor, Perceived Quality, and hypothesizes:

H4: Perceived quality exerts a positive influence (+) on the intention of Vietnamese tourists to opt for sustainable accommodation services.

2.4.4. Motivation and tangibles

Based on Dann's "push and pull" model (1981), widely used in travel intention research, "pull" factors involve destination attractions like climate, services, culture, and price, while "push" factors stem from travelers' needs and desires, such as rest, gaining experience, or seeking change. The amalgamation of these personal desires is termed travel motivation (O'Leary & Deegan, 2005). In light of this, the author introduces the fifth factor, Motivation (push), and postulates the following hypothesis:

H5: Motivation exert a positive influence (+) on the intention of Vietnamese tourists to opt for sustainable accommodation services.

The author based on the "pull" factor to propose the sixth factor which is Tangibles and postulates the following hypothesis:

H6: Tangibles exert a positive influence (+) on the intention of Vietnamese tourists to opt for sustainable accommodation services.

2.4.5. Economic considerations

In examining the significance of financial aspects in purchase predictions, Sahni's 1994 study modified the "behavioral control" component within the TPB model, replacing it with "cognitive financial control." In a related study, Notani (1997) also found that consumers' financial capacity influences their choice of accommodation location. Based on these insights, the author introduces the final factor, Economic considerations, and postulates the following hypothesis:

H7: Economic considerations exert a positive influence (+) on the intention of Vietnamese tourists to opt for sustainable accommodation services.

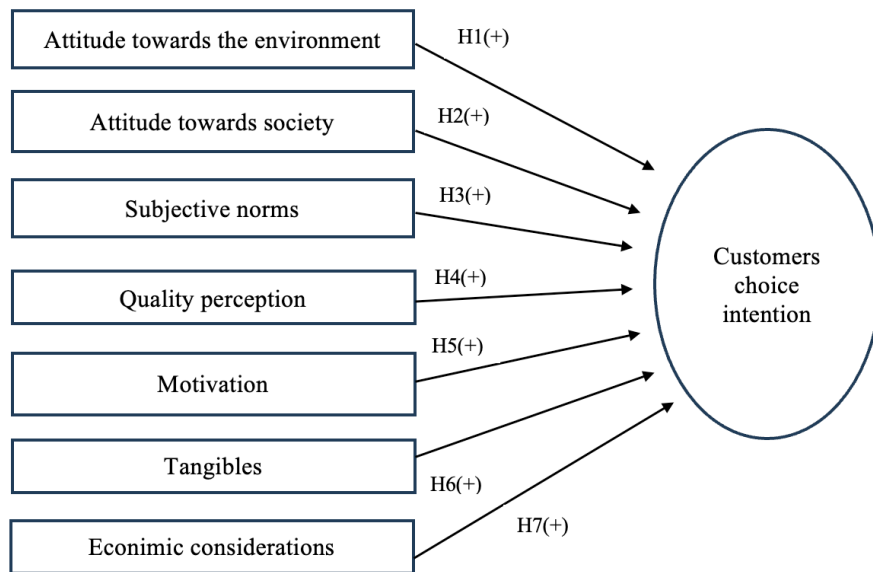Through the above research hypotheses, the authors propose a proposed research model as follows:

Figure 1. Research model

3. RESEARCH METHODOLOGY

Data for this article came from two main sources: secondary and primary. Specifically, secondary data included information from literature, such as books, newspapers, and scientific journals which was assessed for its relevance to the research; Primary data was collected through online surveys conducted on the online platform and processed with Excel and SPSS by the research team.

The study used Convenience Sampling and snowball sampling. Survey participants were tourists in Hanoi Capital who could independently make consumption decisions. The online survey ran for three days in July 2023, yielding 154 responses, of which 132 were valid.

Among the respondents, those aged 18 to under 25 formed the majority at 75.8%, followed by the 25 to under 35 age group at 15.9%. The 16 to under 18 age group represented the smallest segment at 3.8%, with those over 35 making up 4.5%. These results highlight a strong preference for tourism and related services among the 18 to 35 age group.

SPSS 24.0 were employed for statistical analysis. The data was analyzed by the two-step modelling approach. In order to gain the higher reliability for the statistical results, before doing the analyzing process, research execute the Cronchbach's Anpha tests for all research variables.

Table 1. Descriptive statistics

No.	Criteria		Frequence/ Quantity	Ratio %
1	Age	From16 years old to under 18 years old	5	3.8
		From 18 years old to under 25 years old	100	75.8
		From 25 years old to under 35 years old	21	15.9
		Over 35 years old	6	4.5
2	Education Level	Below High School	18	13.6
		High School	13	9.8
		Intermediate college	1	0.8
		University	90	68.2
		After University	10	7.6
3	Occupation	Student	80	60.6
		Unemployed	1	0.8
		Working	43	32.6
		Freelance	7	5.3
		Retired	1	0.8
4	Income	Under 3 million VND	35	26.5
		From 3 million to 5 million VND	36	27.3
		From 5 million to 10 million VND	27	20.5
		Over 10 million VND	34	25.8

4. RESULTS

4.1. Preliminary assessment of the scale by Cronbach Alpha analysis

To determine the Cronbach Alpha coefficient, an assessment of 6 scales is essential within the Cronbach Alpha test, comprising: (1) Attitude towards the environment (MT), which is evaluated through 4 measurement criteria, from MT1 to MT4; (2) Attitude towards society (XH), with measurement criteria spanning from XH1 to XH4; (3) Subjective norms (CCQ), encompassing measurement criteria ranging from CCQ1 to CCQ4;

(4) Quality perception (CL), which is gauged via measurement criteria from CL1 to CL4; (5) Motivation (DC), evaluated through 4 measurement criteria, from DC1 to DC4; (6) Tangibles (PTHH), assessed with criteria covering PTHH1 to PTHH6; (7) Economic considerations (KT), encompassing 4 criteria from KT1 to KT4; (8) Customers Choice intention (YD), which is analyzed through 3 criteria, from YD1 to YD3.

Table 2. Test results of reliability of the scale

No.	Factor	Number of items	Cronbach's Alpha	Reference scale and magnetic correction
1	Attitude towards the environment	4	0.847	Ajzen and Fishbein, 1985; Chan & Lau, 2000; Fraj-Andres & Martinez- Salinas, 2007; Han et al., 2010; Laroche et al., 2001
2	Attitude towards society	4	0.852	Ajzen and Fishbein, 1985; Moutinho, 1993
3	Subjective norms	4	0.860	Cathy H.C. Hsul and Songshan, 2010
4	Quality perception	4	0.827	Zeithaml, 1998; Dodds, Moroe, and Grewal, 1991
5	Motivation	4	0.833	Dann, 1981; O'Leary & Deegan, 2005
6	Tangibles	6	0.848	Dann, 1981; O'Leary & Deegan, 2005
7	Economic considerations	4	0.949	Notani, 1997; Sahni, 1994
8	Choice intention	3	0.869	Ajzen, 2002; Zia-ur-Rehman et al., 2013; Ramayah, 2010

The Cronbach's Alpha reliability analysis table above demonstrates the high reliability of all 33 independent variables across 8 observed factors. The Cronbach's Alpha coefficients, ranging from 0.827 to 0.949 and exceeding 0.6, confirm the data's reliability and generalizability. Notably, no factor exceeds Cronbach's Alpha coefficient of 0.95, indicating variability among the observed variables.

Additionally, all total variable correlation coefficients exceed 0.3, and the non-variable type surpasses the overall Cronbach's Alpha coefficient. This compliance with requirements ensures that all variable types are within an acceptable range.

4.2. Exploratory factor analysis

Table 3. Results of KMO test with dependent variable

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.749
Bartlett's Test of Sphericity	Approx. Chi-Square	2622.437
	df	435
	Sig.	.000

The Kaiser-Meyer-Olkin (KMO) results analysis indicates a KMO value of 0.749, which exceeds the threshold of 0.5. The results suggest that the data is suitable for factor analysis. Furthermore, the Bartlett Test, with a Sig. value of 0.000, confirming a significant correlation among the observed variables collectively.

Table 4. Rotated matrix Figure with independent variables

Observed variables	Component						
	1	2	3	4	5	6	7
PTHH1	0.767						
PTHH2	0.766						
PTHH3	0.737						
PTHH5	0.647						
PTHH6	0.639						
PTHH4	0.621						
KT2		0.952					
KT3		0.951					
KT1		0.907					
KT4		0.905					
CCQ2			0.842				
CCQ1			0.840				
CCQ3			0.794				
CCQ4			0.744				
XH2				0.874			
XH3				0.825			
XH4				0.801			
XH1				0.787			
MT2					0.805		
MT3					0.790		
MT1					0.735		
MT4					0.626		
DC2						0.856	
DC3						0.846	
DC1						0.774	
DC4						0.738	
CL2							0.859
CL1							0.839
CL4							0.606
CL3							0.580

The Varimax rotation matrix table shows 30 variables organized into 7 factors, which closely align with the original structure. These factors are: Tangibles, Economic Considerations, Subjective Norms, Attitudes toward Society, Attitudes toward the Environment, Motivation, and Perceived Quality, maintaining robust inter-variable correlations during exploratory factor analysis (EFA).

4.3. Pearson correlation analysis

Table 5. Correlation analysis

		YD	MT	XH	CCQ	CL	DC	PTHH	KT
YD	Pearson correlation coefficient	1	0.602**	0.469**	0.402**	0.510**	0.174*	0.608**	0.223*
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.046	0.000	0.010
MT	Pearson correlation coefficient	0.602**	1	0.211*	0.394**	0.494**	0.083	0.589**	0.157
	Sig. (2-tailed)	0.000		0.015	0.000	0.000	0.343	0.000	0.071
XH	Pearson correlation coefficient	0.469**	0.211*	1	0.101	0.156	-0.110	0.149	0.077
	Sig. (2-tailed)	0.000	0.015		0.250	0.074	0.208	0.088	0.381
CCQ	Pearson correlation coefficient	0.402**	0.394**	0.101	1	0.332**	0.000	0.334**	0.013
	Sig. (2-tailed)	0.000	0.000	0.250		0.000	0.999	0.000	0.878
CL	Pearson correlation coefficient	0.510**	0.494**	0.156	0.332**	1	0.216*	0.483**	0.059
	Sig. (2-tailed)	0.000	0.000	0.074	0.000		0.013	0.000	0.499
DC	Pearson correlation coefficient	0.174*	0.083	-0.110	0.000	0.216*	1	0.115	-0.001
	Sig. (2-tailed)	0.046	0.343	0.208	0.999	0.013		0.189	0.987
PTHH	Pearson correlation coefficient	0.608**	0.589**	0.149	0.334**	0.483**	0.115	1	0.001
	Sig. (2-tailed)	0.000	0.000	0.088	0.000	0.000	0.189		0.991
KT	Pearson correlation coefficient	0.223*	0.157	0.077	0.013	0.059	-0.001	0.001	1
	Sig. (2-tailed)	0.010	0.071	0.381	0.878	0.499	0.987	0.991	

The Pearson correlation analysis results demonstrate that all independent variables — MT, XH, CCQ, CL, DC, PTHH, KT — have a significant correlation with the dependent variable YD, as indicated by Sig. values consistently below 0.05.

4.4. Evaluate the influence of the independent variable on the dependent variable

The F-test results in ANOVA analysis test the hypothesis about the suitability of the general linear regression model, shown in the following table:

Table 6. Table of ANOVA test results

	Sum of Squares	df	Mean Square	F	Sig.
Regression	24.242	7	3.463	33.016	0.000[b]
Residual	13.007	124	0.105		
Total	37.249	131			

Through ANOVA analysis of variance, the F test has the value Sig. is $0.000 < 0.05$, proving that the constructed regression model is meaningful and can be generalized.

Results of regression analysis:

Table 7. Results of regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig	VIF
	B	Std. Error	Beta			
Constant	-0.250	0.341		-0.733	0.465	
Attitude towards the environment	0.139	0.055	0.183	2.543	0.012	1.845
Attitude towards society	0.215	0.034	0.351	6.373	0.000	1.077
Subjective norms	0.095	0.039	0.143	2.420	0.017	1.240
Quality perception	0.075	0.041	0.121	1.843	0.068	1.528
Motivation	0.150	0.062	0.134	2.433	0.016	1.080
Tangibles	0.264	0.056	0.326	4.725	0.000	1.693
Economic Considerations	0.132	0.046	0.157	2.906	0.004	1.043

The regression analysis reveals that several independent variables (MT, XH, CCQ, DC, PTHH, and KT) significantly influence Vietnamese tourists' intention to choose sustainable accommodation service business models. However, the variable CL is found to be statistically insignificant, leading to the rejection of the Perceived Quality hypothesis.

The unstandardized coefficient B values indicate the degree of influence of each independent variable on the dependent variable. Notably, the Tangible Means variable has the strongest impact, followed by Attitude towards Society, Motivation, Attitude towards Environment, Economic Consideration, and Subjective Norms.

From the above regression results, the author proposes a standardized equation through the following formula (in which, Y is the dependent variable; X1 is Tangibles; X2 is Attitude towards Social; X3 is Motivation; X4 is Attitude towards the Environment; X5 is Economic Consideration; and X6 is Subjective Norms):

$$Y = -0.250 + 0.264*X1 + 0.215*X2 + 0.150*X3 + 0.139*X4 + 0.132*X5 + 0.095*X6$$

Importantly, there is no multicollinearity, as indicated by VIF values below 2.0 for all independent variables. Additionally, all independent variables positively affect the dependent variable, with Attitude towards Society having the most substantial impact and Motivation the least.

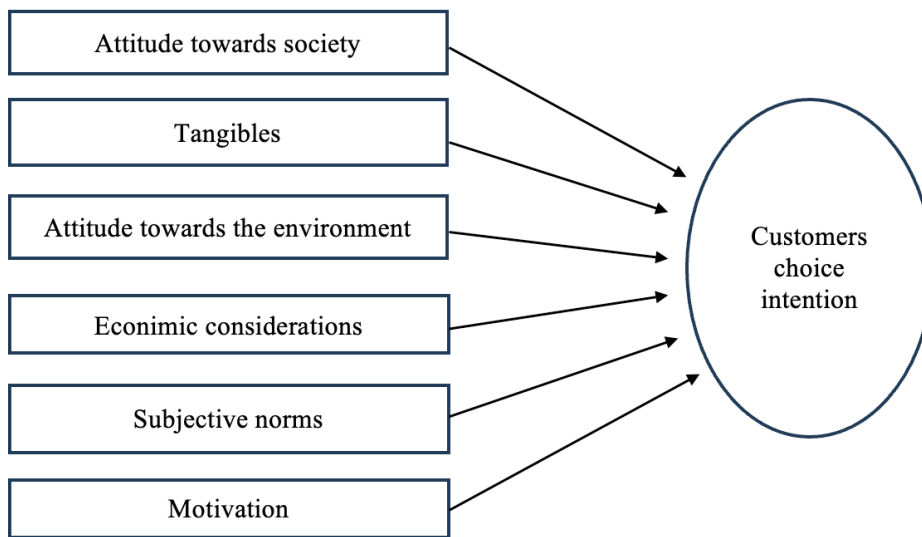From the above data, the adjustment model can be represented as follows:

Figure 2. Adjusted research model

5. CONCLUSION AND RECOMMENDATIONS

The author has successfully met the research objectives and addressed the questions by analyzing data from 132 surveys of Vietnamese tourists regarding factors influencing their choice of sustainable accommodation services. Respondents generally demonstrated agreement with these factors in the following order: Attitude towards society, Tangibles, Attitude towards Environment, Economic Considerations, Subjective Norms, and Motivation (with the removal of the Perceived Quality factor after regression analysis).

Based on the research findings, the author provides recommendations for Vietnamese sustainable accommodation businesses to attract more domestic tourists. These suggestions include:

Tangibles Factor: Invest in Infrastructure and Facilities. Invest significantly in infrastructure, room quality, and amenities to meet the growing demands of tourists. High-quality rooms and amenities play a vital role in tourists' choices. Provide reliable transportation facilities for easier access to sustainable tourism destinations.

Attitude towards Society Factor: Foster Social Engagement. Design and promote programs encouraging positive interactions with local communities and society. It includes participating in volunteer activities and community projects. Engagements create strong bonds and shared values between tourists and local communities, leading to a more profound cultural understanding.

Motivation Factor: Create Unique Experiences. Boost visitors' motivation by offering unique, stimulating tourism programs and experiences. Ensure they meet customer

expectations. Develop a compelling brand story and share sustainability efforts with tourists to capture their attention and enhance their intention to explore these experiences.

Attitude towards the Environment Factor: Promote Environmental Education. Focus on educational activities and initiatives that promote environmental awareness among tourists. Implement educational programs on environmental protection and conservation. Lead by example by adhering to environmental sustainability standards in your operations.

Subjective Norms Factor: Increase Promotion and Media Coverage. Enhance the promotion of sustainable tourism benefits through collaboration with local authorities and media outlets. Communicate the advantages of sustainable tourism and accommodations to a broader audience and the community.

Economic Considerations Factor: Optimize Pricing. Optimize pricing by evaluating input costs and operational expenses to match the quality you offer. Create attractive incentive programs and service packages to attract and retain tourists' interest.

Perceived Quality Factor: Diversify Services. Since Perceived Quality has minimal influence, allocate resources to diversify services and introduce unique amenities. Focus on service variety and creating distinctive experiences to stand out in the market.

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INFLUENCE OF COMMUNITY RESIDENTS ON SUSTAINABLE TOURISM DEVELOPMENT: THE ROLE OF PERCEIVED BENEFITS AND ENVIRONMENTAL AWARENESS

Lê Ba Phong[1], Thân Thanh Sơn[1], Trần Ngọc Quyết[2]

Abstract: *Local community's attachment, involvement, perception of economic benefits, and awareness of environment protection are factors that play a vital role in the sustainable development of tourism. Drawing upon a systematic synthesis of 26 studies on the impact of community residents on sustainable development, the authors proposed a comprehensive theoretical model to elucidate the roles of perceived benefits and environmental awareness in the process of sustainable tourism development. The research findings indicate that community attachment and community involvement play pivotal roles as independent variables supporting sustainable tourism development through the intermediary roles of perceived benefits and moderating role of environmental awareness. Research findings emphasize the need to develop tourism on the basis of promoting cooperation between parties related to tourism resources (community-based tourism development), especially the participation of local communities to create motivation and positive support for sustainable tourism development.*

Keywords: *Community attachment; Community involvement; Perceived benefits; Environmental awareness; Sustainable tourism, Support for sustainable tourism development.*

Tóm tắt: *Mối liên kết với cộng đồng, sự tham gia của cộng đồng, nhận thức của cộng đồng dân cư về lợi ích của hoạt động du lịch và vấn đề môi trường được xem là những nhân tố quan trọng có tác động tích cực đối với sự phát triển du lịch bền vững. Dựa trên việc tổng hợp một cách có hệ thống 26 công trình nghiên cứu điển hình phản ánh mối quan hệ giữa cộng đồng dân cư và sự phát triển bền vững, tác giả đã đề xuất một mô hình lý thuyết hoàn chỉnh phản ánh vai trò của các nhân tố tiền đề và điều kiện cần thiết để thúc đẩy sự phát triển bền vững về du lịch. Kết quả của nghiên cứu chỉ ra rằng, sự gắn bó với cộng đồng và sự tham gia của cộng đồng đóng vai trò là nhân tố độc lập, có tác động hỗ trợ cho sự phát triển du lịch bền vững thông qua vai trò trung gian của nhận thức về lợi ích và vai trò điều tiết của nhận thức về môi trường. Kết quả nghiên cứu nhấn mạnh sự cần thiết phải phát triển du lịch trên cơ sở thúc đẩy sự hợp tác giữa các bên liên quan đến tài nguyên du lịch, đặc biệt là sự tham gia của cộng đồng địa phương nhằm tạo động lực và sự ủng hộ cho phát triển du lịch bền vững.*

Từ khoá: *Mối liên kết với cộng đồng; Sự tham gia của cộng đồng; Nhận thức về lợi ích; Nhận thức về môi trường; du lịch bền vững; sự hỗ trợ cho phát triển du lịch bền vững.*

1. INTRODUCTION

According to the World Travel and Tourism Council (2020), the Travel & Tourism sector experienced a growth rate of 3.9% in 2018, surpassing that of the global economy

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(3.2%) for the eighth consecutive year [1]. Sustainable tourism development entails the optimal utilization of social, natural, cultural, and financial resources to foster the country's growth in a manner that offers a unique experience for visitors, while meeting economic, social, and aesthetic needs, and preserving cultural integrity, essential ecological processes, biological diversity, and life support systems. It addresses the current needs of tourists and host regions while safeguarding and enhancing opportunities for the future [2]. Community is considered the most important component and the key to sustainable tourism development, as suggested by authors such as Murphy (1985) [3], McIntyre. G *et al* (1993) [4], Muhanna (2007) [5], Niezgoda and Czernek (2008) [6], and Matarrita - Cascante *et al* [7]. Community-based tourism development has emerged as a crucial tool for sustainable management, not only generating financial resources but also helping to mitigate the adverse effects of mass tourism, such as environmental degradation [8, 9, 10]. Furthermore, Figgis and Bushell assert that: "Development and conservation that disregard the rights and involvement of local communities are doomed to fail, and may even be considered illegal" [11]. Therefore, the key issue lies in demonstrating the community's influence on sustainable tourism development.

The authors have systematically synthesized and analyzed the findings of exemplary research works published in reputable domestic and international journals to elucidate the theoretical relationship between community attachment, community engagement, perceived benefits, and environmental perception within the community. Based on the analysis results, a theoretical model reflecting the role of each factor in supporting sustainable tourism development for a given tourist destination will be developed and proposed.

It is expected that this study will positively contribute to providing competent managerial agencies, service providers, and destination marketers in Vietnam with a solid theoretical foundation and reliable evidence to formulate appropriate strategies and pivotal investment decisions aimed at enhancing tourists' attachment to key tourist destinations.

2. THEORETICAL FRAMEWORK

2.1. Community attachment

Community attachment was viewed as the identification with the local community, dependence on that community, and the creation of bonds with its members. It was not only an important element that was taken into account in tourism studies but also in practice when assessing residents' support towards tourism development and their perceptions of tourism impacts [10]. Community attachment is considered as a significant element which creates impacts on support for tourism development. It has repeatedly been used in tourism support models by tourism scholars to examine its effects on communities' perceptions of tourism impacts and their attitudes regarding tourism industry [9]. In other words:

"Community attachment is defined as the resident's social participation and integration into community life and reflects an affective bond or emotional link between a resident and a specific community. It reflects an individual's rootedness and sense of belonging to a community" [8].

Community attachment is considered a crucial factor in the construction and maintenance of sustainable tourism development. Understanding and respecting the values and needs of the local community are regarded as decisive elements in establishing a sustainable tourism environment and delivering benefits to all stakeholders involved.

2.2. Community involvement

Community involvement describes the extent to which residents participate in sharing their life issues with the community [8]. Community involvement is regarded as a tool for fostering tourism development in a way that benefits the local community [12]. In other words:

Community involvement describes the willingness and readiness of residents to involve in tourism activities as social actors rather than as passive subjects, and to exercise control over the activities that affect their lives [13].

Previous studies have indicated that community involvement is a crucial factor in implementing tourism plans and strategies [14,15]. Additionally, community involvement contributes to the development of sustainable tourism and enhances tourist satisfaction [16]. Developing tourism alongside community involvement can create opportunities for local communities to benefit from tourism.

2.3 Perceived benefits

The perceived benefits of sustainable tourism consist of perceived economic benefits, social benefits, and cultural benefits [8]. Perceived benefits are closely related to support for sustainable tourism development [9]. In other words:

Perceived benefits refers to awareness of residents about the benefits or positive effects of sustainable tourism development on economic, sociocultural and environmental issues [17].

The benefits derived from tourism activities will directly impact the local community, creating maximum benefits for them. Local residents will be more likely to embrace tourism activities and actively support the conservation of local tourism resources. Enhancing the benefits for local residents from the tourism industry will encourage their involvement in preserving cultural and natural heritage, while also supporting tourism activities. [18].

2.4. Environmental awareness

Environmental awareness refers to residents' understanding or consciousness of the natural environment and making choices that benefit the earth, rather than hurt it, especially in the context of local people [19].

In other words, residents' support for tourism is shaped by their attitudes towards the environment. The existence of resident groups with significant environmental concerns and strong negative views about tourism is notable [20]. Residents' attitudes depend on perceived environmental impacts of tourism and emphasize a range of intervening factors such as the level and nature of tourism development and their degree of control [21].

Positive perceptions of the environmental impacts of tourism are positively associated with support for tourism [22]. Environmental awareness not only helps improve understanding of current environmental issues and potential losses but also fosters awareness of the importance of promoting sustainable tourism behaviors.

2.5. Support for sustainable tourism development

Support for sustainable tourism development is essential for long-term growth. Researchers have applied the Social Exchange Theory test modeling for residents' attitudes toward sustainable tourism and support for sustainable tourism development [23]. The relationships between perceived benefits and perceived costs with support for sustainable tourism, and perceived benefits were positively related to sustainable tourism development while perceived costs were negatively related to sustainable tourism development [8]

Support for sustainable tourism development refers to the residents' positive attitudes toward sustainable tourism development because they believe that the expected benefits exceed the costs (by evaluating the positive and negative effects of tourism is influenced by a number of factors such as economic, social, cultural, and environmental factors) [17, 24].

In other words, the perceived benefits of the local community significantly and positively influence support for tourism development [25, 26].

3. THE PROPOSED RESEARCH MODEL

Based on the systematic synthesis and analysis of research works above, aiming to reflect the relationship between community attachment, community participation, perceived benefits, environmental perception regarding support for sustainable tourism development, the authors summarize and propose a structural model with eight propositions (Figure 1).
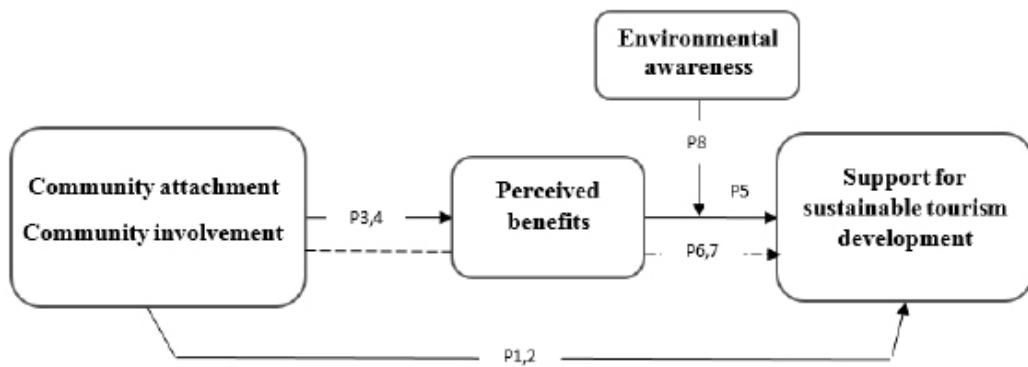
Figure 1. Proposed research model

(Notes: indirect effect)

P1: Community attachment directly affects support for sustainable tourism development

P2: Community involvement directly affects support for sustainable tourism development

P3: Community attachment directly affects perceived benefits

P4: Community involvement directly affects perceived benefits

P5: Perceived benefits directly affect support for sustainable tourism development

P6: Perceived benefits have a mediating role in the relationship between community attachment and support for sustainable tourism development.

P7: Perceived benefits have a mediating role in the relationship between community involvement and support for sustainable tourism development.

P8: Environmental awareness has a moderator role in the effect of perceived benefits on Support for sustainable tourism development.

4. CONCLUSIONS

Research provides proposal model of a positive relationship between community involvement, residents' perceived benefits of tourism development, community engagement, environmental awareness for supporting sustainable tourism development. To assess residents' support for tourism development, the perceived value indices, such as various benefits from tourism, have been utilized. The research results emphasize the necessity to develop tourism based on fostering cooperation among stakeholders, especially local community engagement to generate motivation and support for sustainable tourism development. Building upon the proposed theoretical model results, future studies should continue to employ qualitative research methods, particularly quantitative methods, to

quantify the relationships among factors in this theoretical model to help tourism managers and businesses gain deeper insights and make more informed decisions to harness tourism potential and ensure sustainable tourism development.

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ELECTRONIC HUMAN RESOURCE MANAGEMENT IN SMART TOURISM AND SUSTAINABLE DEVELOPMENT: A STUDY ON THE HOTEL AND RESTAURANT INDUSTRY IN VIETNAM

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Abstract: The digital era has brought about significant changes in the business environment. Electronic Human Resource Management (e-HRM) is a concept related to the use of web-based technologies to provide services related to human resource management within organizations and broader access to the organization's stakeholders - starting from the human resource management department, through managers to employees. The study aims to provide an overview of research on e-HRM, as well as show the level of e-HRM use by hotels and restaurants associated with smart tourism and sustainable development in Vietnam. This study uses qualitative research method. The results of the study show the current situation and propose e-HRM solutions to contribute to promoting smart tourism and sustainable development in the context of the hotel and restaurant industry in Vietnam.

Keywords: Electronic human resource management, hotel, restaurant, smart tourism, sustainable development.

Tóm tắt: Thời đại kỹ thuật số gây ra những thay đổi đáng kể trong môi trường kinh doanh. Quản lý nguồn nhân lực điện tử (e-HRM) là một khái niệm liên quan đến việc sử dụng các công nghệ dựa trên Web để cung cấp các dịch vụ liên quan đến quản lý nguồn nhân lực trong tổ chức và quyền truy cập có phạm vi rộng hơn các bên liên quan của tổ chức - bắt đầu từ bộ phận quản trị nguồn nhân lực, thông qua các nhà quản lý đến nhân viên. Nghiên cứu nhằm cung cấp một cái nhìn tổng quan về các nghiên cứu về e-HRM, cũng như chỉ ra mức độ sử dụng e-HRM của các khách sạn, nhà hàng gắn với du lịch thông minh và phát triển bền vững ở Việt Nam. Nghiên cứu này sử dụng phương pháp nghiên cứu định tính. Kết quả của nghiên cứu cho thấy thực trạng, đề xuất giải pháp e-HRM để góp thúc đẩy du lịch thông minh và phát triển bền vững trong bối cảnh ngành khách sạn, nhà hàng ở Việt Nam

Từ khóa: Quản lý nguồn nhân lực điện tử, khách sạn, nhà hàng, du lịch thông minh, phát triển bền vững.

1. INTRODUCTION

Digital technology is one of the most revolutionary developments in business and society over the past few decades, with the potential to fundamentally alter the way organizations operate and create value (Loebbecke and Picot, 2015). Many companies consider digital transformation in their operations to be crucial, a process defined as transforming business activities, processes, capabilities, and models to fully leverage the changes and opportunities brought about by digital technology (Demirkan et al., 2016).

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The goal of digital transformation is for companies to enhance competitiveness and keep pace with digital-born organizations (Vial, 2019).

Thanks to the application of information technology today, activities related to human resource management have changed, specifically in the collection, storage, and updating of employee data, followed by activities in the field of recruitment and candidate selection, employee training methods, performance management, etc., which have contributed to cost reduction, improved service quality, and increased productivity. As a result, an increasing number of organizations are using information technology solutions in human resource management. By digitizing and automating administrative activities and transactions, the application of information technology in the human resource management (HRM) function allows employees to spend more time on activities that create greater value for the organization, i.e., designing more effective policies in the HRM field contributes to enhancing the effectiveness of the organization's operations, thereby making HRM a true strategic partner in business (Parry and Tyson, 2011).

The widespread use of information technology in carrying out HRM activities has led to the emergence of a new HRM concept. This concept is known in academic literature as e-HRM, while in practice, it is often referred to as e-HR (Foster, 2009). In any case, this concept implies the use of information technology to provide various services from the field of human resource management within an organization and an approach that involves many stakeholders, starting from the HRM department, through managers, employees, potential employees, and other related parties

Furthermore, sustainable development, including sustainable tourism development, is being promoted worldwide as a goal for human development in the future (UNEP and UNWTO 2005). Sustainable tourism development has been on the international agenda for over 30 years, with awareness gradually expanding along with the process of concretizing into actions (Hardy et al., 2002). A crucial aspect of smart tourism is sustainability. Tourism companies that want to successfully apply smart tourism initiatives need to focus heavily on sustainability; reduce carbon emissions, apply environmentally friendly methods. The tourism industry in Vietnam is developing rapidly and dynamically, closely linked with the region and the world in a professional, modern direction, is a condition to enhance digital connectivity, promote smart tourism and sustainable development. The close, synchronous connection on a digital platform among stakeholders in the tourism industry; resources to develop a synchronous and sustainable smart tourism ecosystem in the context where most tourism businesses are of medium and small scale with limited resources; knowledge, level, skills of the tourism workforce about smart tourism, human resource management, information technology are challenges in smart tourism and sustainable development

In the context of strong digital transformation, research on electronic human resource management in the Vietnamese hotel and restaurant industry is still scarce.

Therefore, this study aims to explore how to apply digital technology to manage human resources in the hotel and restaurant industry in Vietnam towards smart tourism and sustainable development. This study helps readers better understand the ways in which digital technology can help enhance efficiency in human resource management, including functions such as recruitment, training, performance management, and employee development. In addition, the study also refers to the challenges that businesses in the hotel and restaurant industry may face when applying digital technology to human resource management in the context of smart tourism and sustainable development. From this, it helps businesses in the industry better understand the benefits of using digital technology in human resource management and how to optimize this process.

2. LITERATURE REVIEW

2.1. E-HRM

When it comes to Human Resource Information Systems, it encompasses systematic processes for collecting, storing, maintaining, updating, and distributing data about an organization's human resources (Tannenbaum, 1990), where the main users of this system are the HRM function (Ruel, Bondarouk, and Looise, 2004). The goal of using this information system is to improve the efficiency of the HRM function, thereby indirectly creating a positive impact on the entire operation of the organization. On the other hand, when it comes to e-HRM, this concept refers to the application of strategies, policies, and practices related to human resources in organizations that are fully supported or dependent on web technology (Ruel, Bondarouk, and Looise, 2004) whereby this technology can be used by employees of the HRM department, as well as other employees in the organization, potential employees, and the organization's management (Bradić Martinović, 2011)

In elucidating the essence of e-HRM, some authors emphasize the transactional aspect of e-HRM, implying that HRM activities are more easily managed. Other authors highlight the technology that provides access to resource data, while a third group of authors emphasize the strategic aspect of e-HRM. Referring to the first group of authors, some of them suggest that e-HRM is a concept that allows for improved management of human resource activities and transactions (Kettley and Reilly, 2003). Bondarouk and Brewster (2016) indicate that e-HRM focuses on all integrated mechanisms and all human resource management content transmitted through information technology, with the aim of making HRM processes more consistent, more efficient, of better quality, and creating long-term opportunities for the organization's stakeholders.

Ee-HRM provides mechanisms that facilitate the collection, retrieval, and updating of data related to the knowledge, skills, and abilities of employees (Fındıklı & Beyza Bayarçelik, 2015). Furthermore, e-HRM can streamline processes by undertaking tasks such as categorizing candidate profiles, scheduling interviews, and sending rejection emails. With the assistance of e-HRM, the recruitment process

can become more objective. The system proactively searches for and identifies candidates who meet the employer's criteria in a fair manner, eliminating subjectivity and bias (Fındıklı & Beyza Bayarçelik, 2015). e-HRM also contributes to enhancing the effectiveness of employee training and development by providing knowledge, techniques, and work methods; it helps employees compare the knowledge and skills they possess with the capabilities required in their current and future positions (Fındıklı & Beyza Bayarçelik, 2015, 2015). In particular, e-HRM provides detailed metrics to serve prediction purposes. Human resource managers can consolidate their long-term human resource strategy and minimize issues related to recruitment, turnover rates, and future work performance. Decision-making and orientation based on information and data will be more accurate than relying on personal opinions or intuition. Simultaneously, employees can also access their profiles to update and use them if necessary (Seyyed Abdorasoul Hoseini et al.)

2.2. The specificity of human resource management in the hotel and restaurant industry

Human Resource Management (HRM) in the hotel and restaurant industry is a distinctive and complex field, as it necessitates meeting the increasingly diverse and stringent demands of customers. Enterprises in this sector must identify several crucial peculiarities of HRM to ensure their success, specifically:

Customer-centricity: The hotel and restaurant industry requires a high level of customer focus. Service staff must ensure that customers receive the best service to create an excellent customer experience.

Temporary labor demand: The hotel and restaurant industry has a large demand for temporary labor to meet customer needs. HR managers must have the skills to manage temporary labor to enhance flexibility and ensure that employees are properly trained and can work effectively in a short period of time.

Communication skills: Employees in the hotel and restaurant industry must have good communication skills to interact with customers and other staff members. HR managers must ensure that employees are properly trained to communicate effectively with customers and colleagues.

Training and development: The hotel and restaurant industry requires continuous training and development of employees to improve service quality and enhance management capabilities. HR managers must have a clear training and development plan to ensure that employees always have the latest knowledge and skills to meet customer needs.

Flexibility: The hotel and restaurant industry requires high flexibility to meet changing customer needs. HR managers must be flexible in managing and arranging tasks and employees in different situations.

Diversity management: The hotel and restaurant industry has a diverse workforce in terms of age, gender, and cultural background. HR managers must ensure that employees are treated fairly and respectfully to create a positive and diverse working environment.

High competitiveness: The hotel and restaurant industry is highly competitive, so enterprises must have an effective HRM plan to retain employees and attract talented employees from competitors.

Digital transformation: In the era of digital transformation, enterprises in the hotel and restaurant industry must also transform to meet customer needs. HR managers must have knowledge of technology and train employees to use new technologies to enhance service quality and optimize operations.

In conclusion, HRM in the hotel and restaurant industry is a distinctive and complex field. Enterprises must ensure that HR managers have a clear plan to meet customer needs and ensure the flexibility and competitiveness of the enterprise. In the era of digital transformation, enterprises must also transform to meet customer needs and use technology to enhance service quality and optimize operations.

3. METHODOLOGY

This study employs qualitative research methods, including document analysis, content analysis combined with synthesis, analysis, comparison, and descriptive statistics, to identify the current state and propose e-HRM solutions to promote smart tourism and sustainable development in the context of the hotel and restaurant industry in Vietnam. To analyze the most recent literature on e-HRM associated with smart tourism and sustainable development, the authors systematically searched for studies from articles published in reputable journals, as they are considered to be validated knowledge (Podsakoff et al., 2005). In this article, relevant studies will be selected to examine theories related to e-HRM; simultaneously, a comprehensive analysis of the actual situation of electronic human resource management in the context of smart tourism and sustainable development of the hotel and restaurant industry in Vietnam will be conducted.

4. RESULTS AND DISCUSSION

4.1. The current state of smart tourism and sustainable development in Vietnam

The advent of new technologies in recent years has transformed the way information is sought and shared, leading to significant changes in tourist behavior. The explosion of mobile applications and social networks has positively influenced tourists' approach to accessing and sharing travel information, as well as their choices of destinations, accommodations, and dining locations. Consequently, smart tourism has emerged as an inevitable trend to enhance the competitive advantage of businesses and destinations. In this context, the Vietnamese tourism industry has comprehensively applied information technology to develop a smart tourism ecosystem. This proactive approach meets the specific and specialized needs of the tourist market, supports tourism businesses in effectively connecting with relevant entities, and creates an environment for the community and innovative startups that align with the trends of the Fourth Industrial Revolution. It meets the requirements for innovating methods, enhancing the effectiveness and

efficiency of state management work, and contributes to promoting growth and enhancing the competitiveness of Vietnamese tourism.

The tourism industry has been vigorously applying digital technology to support tourists before and after their trips, enhancing the efficiency of destination management, developing smart tourist destinations, developing the tourism information system and applications, supporting businesses, and fostering a startup community to apply information technology in the field of tourism, as well as propagating, training, fostering, and raising awareness about the application of information technology.

The General Department of Tourism, localities, and businesses have focused on implementing activities, including: Building a digital database system for the tourism industry to effectively serve state management work and promote tourism. Currently, a database has been formed on international travel businesses, tour guides, tourist accommodation establishments, tourist areas, tourist spots, and the tourism statistics data system; Coordinating with the Department of E-commerce and Digital Economy, the General Department of Market Management, businesses, and international partners such as Google, Youtube to develop applications that connect the information system to serve the operation, state management of tourism to localities, businesses; and applying advanced technology to serve tourists; Accompanying, supporting the startup business community to apply information technology to develop tourism to incubate new, creative, breakthrough ideas in the industry; Supporting, training the team of tourism managers in localities and tourism businesses to enhance capacity.

4.2. E-HRM in the hotel and restaurant industry in Vietnam

Similar to traditional human resource management, managing human resources in a hotel and restaurant business involves overseeing the labor forces of an organization, company, society, or human resources. It carries out the responsibility of attracting, recruiting, training, evaluating, and rewarding workers, while also supervising the leadership and culture of the organization, and ensuring compliance with labor and employment laws. In the hotel and restaurant industry, the quality of customer service and the responsiveness of employees directly impact the image and reputation of the hotel and restaurant. The efficiency of managing staff allocation is crucial to promote competition and truly enhance the effectiveness of hotel and restaurant chains. To achieve this, human resource management must propose numerous effective solutions to attract, recruit, train, develop, and retain truly passionate, capable, and responsible employees, and find ways to retain them in the organization. The function of human resource management in hotels and restaurants is to propose a correct strategy to manage strong talent and create a continuously developing, high-performance, and committed corporate

culture across the organization to provide excellent service to customers in a practical way. The operation program to provide hotel and restaurant services is sometimes an open service, highly flexible, requiring timely adaptation of staff allocation, therefore the task of managing human resources serving the operational and business objectives for hotels and restaurants is an extremely important and very complex task.

Hotel and restaurant human resource management is a series of activities from job description construction, recruitment attraction, selection, training, evaluation, labor organization, and salary management within a service business entity such as a hotel or restaurant. Good human resource management helps hotels and restaurants operate stably, efficiently, ensuring revenue and profit. To satisfy the increasingly high demands of customers, the most important thing that hotels and restaurants need to do is to improve service quality, more precisely, to manage and train a good team of hotel and restaurant staff. To train a high-quality, enthusiastic team dedicated to their work, bringing overall business operation efficiency, requires highly synchronized and effective human resource management. Thus, with increasingly diverse and complex tasks, the traditional HRM management model now shows 'overload' and reduced 'management efficiency'. Management experience in many countries in the region such as Thailand, Indonesia, and Malaysia shows that large enterprises in the tourism sector (travel tourism, hotels-restaurants, resorts, resort areas, and complex amusement parks) often focus on investing in eHRM as a 'core tool' because of the effectiveness it brings   E-HRM was established to monitor the demands of human resources as well as the imbalance of supply within a company, serving the ultimate goal: automating the human resource management process. E-HRM in the hotel and restaurant industry in Vietnam has made significant progress when businesses use software to support human resource management tasks such as: Basic administrative tasks such as payroll calculation, record storage or data management; recruitment activities, training and maintaining employee engagement; policy management and strategic orientation activities,… With the dizzying speed of technology development, e-HRM has completely changed the human resource management process. However, the transition from the traditional HRM model to the eHRM model in the hotel and restaurant sector is truly a challenge and a major turning point for service-oriented businesses. To do this requires first and foremost that senior leadership needs high consensus, boldness to change thinking as well as redefine the role of the human resources department in the enterprise.

In the digital transformation period, human resource management in the hotel - restaurant industry in Vietnam is facing many challenges and opportunities. Some main realities include:

Untapped potential of technology: Although businesses in the hotel and restaurant industry in Vietnam have begun to apply technology to human resource management, such as using human resource management software or recruitment websites, there is still much potential of technology that has not been fully exploited.

Lack of experience and expertise in electronic human resource management: Electronic human resource management in the hotel and restaurant industry is still new in Vietnam, many businesses do not have enough experience and expertise to deploy and manage effectively.

Employees lack the skills to use technology: Although technology has been applied to human resource management, there are still some employees who lack the skills to use new technologies, reducing the effectiveness of electronic human resource management.

Fierce competition: The hotel and restaurant industry in Vietnam is growing strongly, with fierce competition among businesses. Electronic human resource management plays an important role in retaining employees and attracting talented employees to increase the competitiveness of the business.

Not fully focused on customers: In the process of transitioning to electronic human resource management, some businesses have lost focus on customers. This can affect the quality of service and the reputation of the business in the eyes of customers

5. MANAGERIAL IMPLICATIONS

Electronic human resource management in the hotel and restaurant industry in Vietnam is facing many challenges, but it also offers many development opportunities. To address these challenges and exploit opportunities, businesses in the industry need to have a proper and effective electronic human resource management strategy. Specifically:

Businesses need to clearly define their goals and develop an electronic human resource management strategy that is suitable for each employee group and business goal. This will help businesses achieve high efficiency in electronic human resource management.

Promote investment in information technology infrastructure, ensure e-HRM is user-friendly, ensure the specificity of the hotel and restaurant industry in Vietnam to ensure the effectiveness of the deployment of this system in the organization.

E-HRM helps to process employee information faster, more accurately and easier, saves costs, frees human resource managers from administrative tasks, increases access to human resource data, standardizes human resource processes in the company, updates and more consistent data about employees and their performance, and similar things. Businesses operating in the hotel - restaurant sector need to pay attention to investing in e-HRM, training human resources to fully understand the functions of the system, manage the use of e-HRM. At the same time, encourage members of the organization to participate in the e-HRM system.

In conclusion, electronic human resource management in the hotel - restaurant industry in Vietnam is a challenge but also brings many development opportunities. Businesses need to have a proper and effective electronic human resource management strategy to take advantage of opportunities and cope with the challenges of the digital transformation era

6. CONCLUSION

E-HRM helps to promote the potential and productivity of employees, creating a new path to implement the traditional functions of human resource management, leading the organization to success. This study points out the current situation and proposes solutions to promote e-HRM in response to smart tourism and sustainable development in the context of the hotel and restaurant industry in Vietnam.

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RANKING OF FACTORS AFFECTING HOMESTAY DESTINATION SELECTION: A FUZZY AHP ANALYSIS

Đỗ Quang Hưng[1], Đoàn Thị Thanh Hằng[2]

Abstract: In tourism industry, the homestay service brings economic benefits to the local community, locate the tourism products strategically while preserving traditional culture and heritage. Therefore, evaluating the order of factors affecting homestay destination selection will help managers improve service quality, attract tourists, create jobs, and improve the living standards in local communities. The objective of this study is to explore factors homestay destination selection and evaluate their importance level using the fuzzy AHP. First, a literature review is conducted to identify the nine influential factors in the context of Vietnamese tourism industry. Then, based on the experts' opinion, the Fuzzy Analytic Hierarchy Process (FAHP) method will be utilized to rank factors. The results indicate that destination location and Leisure activities are the most influential factors affecting homestay destination selection. The findings of this study will help managers better understand the attractive factors of homestay tourism and provide a basis for marketing strategy decisions. The study will be also valuable for tourism organizations and government agencies in developing appropriate regulations to promote community-based tourism.

Keywords: influential factors, homestay, tourism destination, Fuzzy - AHP.

Tóm tắt: Việc đánh giá mức độ quan trọng các nhân tố ảnh hưởng đến việc lựa chọn điểm đến dịch vụ lưu trú nhà dân sẽ cung cấp thông tin cho các nhà quản lý để nâng cao chất lượng dịch vụ, thu hút khách du lịch, tạo việc làm và cải thiện mức sống cho cộng đồng tại địa phương. Mục tiêu của nghiên cứu này là khám phá các nhân tố ảnh hưởng đến việc lựa chọn điểm đến lưu trú tại nhà dân và đánh giá mức độ quan trọng của các nhân tố này bằng cách sử dụng AHP mờ. Đầu tiên, nghiên cứu tổng quan tài liệu được thực hiện và xác định được 9 nhân tố ảnh hưởng đến việc lựa chọn dịch vụ lưu trú tại nhà dân trong bối cảnh Việt Nam. Sau đó, dựa trên khảo sát ý kiến của các chuyên gia, phương pháp phân tích thứ bậc mờ (Fuzzy Analytic Hierarchy Process - FAHP) sẽ được sử dụng để xếp hạng các nhân tố. Kết quả chỉ ra rằng địa điểm điểm đến và các hoạt động giải trí là những nhân tố quan trọng nhất trong việc lựa chọn dịch vụ lưu trú tại nhà dân. Kết quả nghiên cứu này sẽ giúp các nhà quản lý hiểu rõ hơn về các yếu tố hấp dẫn của hình thức du lịch lưu trú nhà dân và cung cấp thông tin cho việc xây dựng chiến lược tiếp thị. Nghiên cứu này cũng sẽ có giá trị đối với các tổ chức du lịch và cơ quan chính phủ trong việc xây dựng các quy định, hướng dẫn phù hợp nhằm thúc đẩy, tạo điều kiện cho phát triển du lịch cộng đồng.

Từ khóa: Yếu tố ảnh hưởng, dịch vụ lưu trú nhà dân, điểm đến du lịch, phương pháp AHP mờ.

1. INTRODUCTION

The tourism industry has long been considered as a "smokeless industry" since its output value is based on tourist visits rather than the establishment or construction of a

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factory. Tourism has long been seen an approach to sustainable development for developing nations. The national economy will then benefit from this, and job opportunities will arise. Vietnam has abundant natural and cultural resources, which highlights its enormous potential for the growth of tourism. The government is currently focusing a lot of attention on rural tourism in an effort to diversify the travel industry and actively manage economic activity to raise the standard of living in the locality. A popular sustainable rural tourism offering is the homestay. In general, it is described as a kind of lodging where guests stay in locals' houses. Homestay provides tourists with a sense of feeling at home, interaction with the host family, firsthand relationship with locals, the experience of the local culture and low-cost accommodation [1].

Researchers indicate that the main component of homestay is cultural diversity [2], [3], [4]. Homestay is among the diverse types of tourism for customers who like to experience and explore local cultures [2], [3], [5]. Various researchers [6], [7], [8], [9] argue that Vietnam's homestay tourism model mainly exploits available resources and does not have a methodical development orientation. Their studies indicate the limitation of meeting visitors' expectations in experiencing local culture. Dey et al. [10] and Lakmali and Kajendra [11] note that tourists who select homestays often expect to stay in unique local culture destinations. Buu Nam and Le Diem Trang [6] and Nguyen [12] show that homestay tourism in Vietnam is developing in a fragmented and small manner. Meanwhile, Chin et al.[13], Janjua et al. [3], Lakmali and Kajendra [11], and Mura [14] argue that once the homestay will get economic benefits to the local community, locate the tourism products strategically while preserving traditional culture and heritage. Therefore, evaluating the order of attractive attributes for homestay tourism will help managers improve service quality, attract tourists, create jobs, and improve the living standards in local communities [2]. Although studies related to homestay tourism have been conducted, including on various topics such as tourist satisfaction, travel motivation, destination choice, and visitor loyalty [5], [6], [10], [15], [16], [17], studies on prioritising attractive attributes for homestay destination selection are still limited.

In this study, Fuzzy Analytic Hierarchy Process (FAHP) method is used to determine the rank of factors for homestay destination. Saaty (1980) developed AHP to solve complex decision problems with many selection criteria and people involved in decision-making. Although the conventional AHP method is sufficiently powerful in explaining and describing expert knowledge, it cannot reflect human behaviour and thinking fully and in detail [18]. Thus, the FAHP method is a solution to help scientifically and clearly classify factors affecting selections and address the limitations of the conventional AHP [19].

Furthermore, this study aims to help managers better understand the attractive attributes of homestay tourism and provide a basis for marketing strategy decisions. Lai and Vinh [9], Truong and King [20], and Truong and Foster [21] have explored specific

attributes and their impact on tourist behaviour in Vietnam [22], [23], [24] considers expert opinion surveys to be a suitable method for objectively accessing information and gathering opinions based on experience and expertise. Therefore, expert opinions in the tourism sector also need to be considered and analysed in the context of the many attributes related to homestay destinations [25].

The rest of this paper is organized as follows. Section 2 briefly presents the literature review on homestay tourism and. Section 3 presents the method to identify essential factors. Section 4 and Section 5 present the results, discussions and implications, respectively. Finally, conclusions are presented in Section 6.

2. LITERATURE REVIEW

2.1. Homestay tourism

The practice of commercializing one's residence in order to make profitable use of living space is known as home staying. Homestays are a type of lodging that fall somewhere between the private settings of a friend's or relative's house and the completely commercial, casual settings of hotels and other more traditional lodging establishments. Homestays appeal to guests seeking novelty, individualized attention, and real social connections with hosts because they provide regionally grounded and authentic alternatives to the generic and formulaic hospitality standards seen in places like motels. Naturally, people have been starting businesses in their homes for a long time. However, operating a business from home differs from entertaining guests in one's home in that the former entails conducting business from the home, while the latter turns the entire concept of "home" into a place for business [26].

According to Hsu and Lin [27] and Yahaya [28], tourism and entertainment have combined to form homestay tourism because the demand for enjoying rural life and fresh air is increasing in the context of stressful urban life, high work pressure, and environmental pollution. In addition, combining indigenous cultural tourism and recreational activities is the result of the demand for tourists to discover and experience distinct values. Kunjuraman and Hussin [29] and Mbulu and Gunadi [30] show that cultural attractions have become an essential factor in motivating people to travel, and homestay is becoming a favourite choice for both international and domestic tourists. Janjua et al [3] notes that homestay is also a type of sustainable tourism and preserves local cultural values [31]. Meanwhile, in the context of the COVID-19 pandemic, homestay is a business strategy that can help the tourism industry adapt and recover from the crisis [2], [32]. The COVID-19 pandemic has had a profound impact on the tourism industry, leading to disruptions and changes in consumer behaviour. Homestay, as a business strategy, can be instrumental in helping the tourism industry adapt and recover from the crisis for several reasons: (1) Safety and Privacy: Travelers may feel more comfortable in a controlled, home-like setting where

they can maintain physical distancing; (2) Local Experiences: With the ongoing concerns about health and safety, travellers may prefer avoiding crowded tourist areas and opt for unique, personalized experiences offered by local hosts; (3) Cost-Efficiency: Travelers may be more budget-conscious due to economic uncertainties, and homestays can provide affordable accommodation options; and (4) Digital Platforms and Marketing: The rise of online platforms and digital marketing has made it easier for homestay businesses to reach a global audience.

2.2. Homestay attributes

The attractiveness of a destination is often considered a 'pull' factor in tourist behaviour research. While attractiveness is defined as an individual's feelings, beliefs, and perceptions about a destination that will would their holiday expectations [33], this concept refers to the benefits tourists receive during their holiday. Krešić and Prebežac [34] argue that the attractiveness of a destination lies in the specific attributes capable of attracting tourists, such as climate, landscapes, and activities. Similarly, Chuang et al. [35] and Widjaja et al. [36] show that the attractiveness of a destination includes facilities, location, nature, and cultural resources. Understanding the attractive attributes of a destination is important in developing new products and services and enhancing tourism competitiveness [37], [38]. Studies on tourist behaviour often explain the causes or factors that affect tourist decisions [11], [39], while studies on the attractiveness of destinations often focus on attributes such as destination brand, price, resources (cultural and natural), location, and services [11], [39], [40].

A homestay destination's typical attributes include cultural activities, cuisine, social environment, accessibility, atmosphere, safety and security, weather, scenery, shopping, activities at night, sports facilities, accommodation services, entertainment services, and unique and exotic [9], [23], [41], [42], [43]. Furthermore, some studies emphasise factors related to the natural landscape, tourist atmosphere, environment, weather, historical buildings, architecture, outdoor activities, and service quality [29], [44], [45]. Dey et al. [10] present homestay destination attributes including natural, cultural, sports activities, destination location, traffic, accommodations and meals, and social conditions. Vinh [17] and Bửu Nam and Lê Diễm Trang [6] show the attractive attributes of homestay destinations in Vietnam, such as security, accessibility, weather, service quality, scenery, cuisine, cultural events, and shopping. In addition, Doan et al. [46] and Lakmali and Kajendra [11] indicate that hosts and members should be friendly and consider tourists as family. Moreover, it is indicated that the price factor strongly influences tourist destination selection. It is also shown that tourists buy tourism products based on price rather than the product's properties [47], [48], [49]. Based on previous research on homestays, the present study proposes the model of attractive homestay attributes shown in Table 1 and Figure 1.
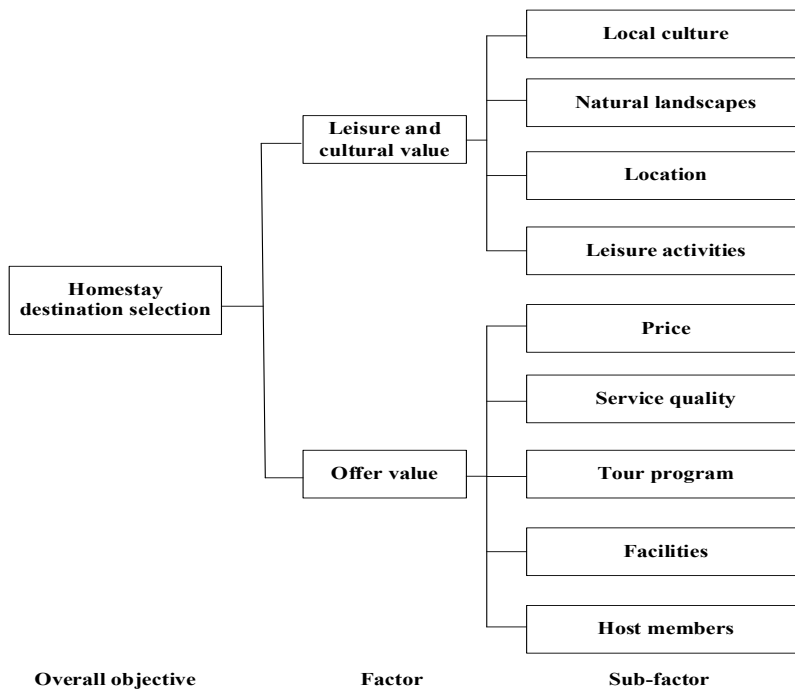
Figure 1: The hierarchy of factors

Table 1: Factors and sub-factors

Factor	Sub-factor	Definition	Sources
Leisure and cultural value (F1)	Local culture (F11)	Local culture is related to residents' typical cultural and lifestyle activities, customs, ancient architecture, historical sites, festivals, and cuisine.	Moon & Han [39]; Vinh [17]; Buu Nam & Le Diem Trang [6]
	Natural landscapes (F12)	Natural landscapes include the ecological environment, topography, climate, and hydrology.	El-Said & Aziz [40]; Lakmali & Kajendra [11]; Buu Nam & Le Diem Trang [6]
	Location (F13)	The location of the destination must be safe and secure, easily accessible, have fresh climate conditions, and provide romantic peaceful scenery.	Vinh [17] and Buu Nam & Le Diem Trang [6]; El-Said & Aziz [40]
	Leisure activities (F14)	These are relaxation activities associated with the homestay destination, such as folk games, traditional art programs, community cultural activities, local handicrafts, and night and shopping activities.	Kunjuraman & Hussin [29] Mutinda & Mayaka [44]; Zhao et al [45].

Offer value (F2)	Price (F21)	The price is that which tourists exchange with the company to purchase the tourism product. It also includes promotion, discount, and gift.	Shajedul and B. Abdoul [47]; Chou [48]; Lan et al [49]
	Service quality (F22)	The service quality of a destination includes staff skills and attitudes, service types, hygiene, convenience, perception, and credibility.	Kunjuraman & Hussin [29]; Mutinda & Mayaka [44]; Zhao et al. [45]
	Tour program (F23)	The tour program includes the schedule, time of the trip, price policy, and especially the services and activities included in the program.	Kunjuraman & Hussin [29]; Mutinda & Mayaka [44]; Zhao et al. [45]
	Facilities (F24)	Facilities must meet the criteria for design and construction location, architecture, equipment, furniture, environmental protection, security, safety, fire prevention, hygiene, and food safety.	Ghose & Johann [41]; Han et al. [42]; Lai & Vinh [9]; Van Trung & Mohanty [23]
	Host members (F25)	Hosts and members should be friendly and treat tourists as family members.	Doan et al. [2]; Lakmali & Kajendra [11]

3. METHODS

3.1. Fuzzy Analytic Hierarchy Process

In this section, a brief description of the FAHP method is given as follows.

A matrix $\tilde{A}$ is constructed according to fuzzy pairwise comparisons.

$$\tilde{A} = \begin{bmatrix} 1 & \tilde{a}_{12} & \cdots & \tilde{a}_{1n} \\ \tilde{a}_{21} & 1 & \vdots & \tilde{a}_{2n} \\ \vdots & \cdots & \cdots & \vdots \\ \tilde{a}_{n1} & \tilde{a}_{n2} & \cdots & 1 \end{bmatrix} \tag{1}$$

where $\tilde{a}_{ij} = (l_{ij}, m_{ij}, u_{ij})$ is the fuzzy comparison value of criterion i to criterion j

The fuzzy weights of each criterion are calculated as

$$\tilde{r}_i = (\widetilde{a_{i1}} \otimes \widetilde{a_{i2}} \otimes \dots \otimes \widetilde{a_{in}})^{1/n} \text{ for } i = 1, 2, ..., n \tag{2}$$

$$\widetilde{w_i} = \frac{\tilde{r}_i}{\widetilde{r_1} \oplus \widetilde{r_2} \dots \oplus \widetilde{r_n}} \quad \text{for } i = 1, 2, ..., n \tag{3}$$

where $\tilde{r}_i$ is the geometric mean of fuzzy comparison value of criterion i to each criterion, and $\widetilde{w_i}$ is the fuzzy weight of the i th criterion.

The fuzzy weight vector $\widetilde{W}$ is constructed as:

$\widetilde{W} = (\widetilde{w}_1, \widetilde{w}_2, ..., \widetilde{w}_n)^T$ (4) Due to the space limitation, the establishment of a group decision making based on FAHP is not presented here.

3.2. Data collection

To collect data, a team of 42 experts was formed for the decision-making panel, which includes 27 managers and academics from universities, 11 experts from tourism associations, two travel agency directors, and two current owners of homestays who work in the tourism sector in Vietnam and have more than ten years of expertise in the field. The finalized list of 9 sub-factors have been grouped into two key groups based on the research framework after several phases of discussion with experts. These are Leisure and cultural value and Offer value. Finally, the factors and sub-factors are completely depicted and introduced in Table 1.

The questionnaire instrument was designed using the primary attributes of the FAHP method's factor comparison and a scale of 1-5 for each comparison between factors. In January 2024, the questionnaire was distributed to experts who were involved in the previous step of factor investigation and had roles and responsibilities that might provide a holistic view of the Leisure and cultural value and Offer value factors during the study. After the experts' comparison matrices of factors and sub-factors are formed, then the consistency ratios (CRs) are calculated. Four questionnaires had inappropriate answers among the returned responses. As a result, their feedback was removed from the analysis. Thirty-eight respondents have CR values that are all less than 0.1. As a result, the outcomes of this study are based on the viewpoints of 38 experts.

4. RESULTS AND DISCUSSIONS

The FAHP method is used to determine the ranking of the influence of factors and sub-factors affecting homestay destination selection. After the questionnaire results are received and accepted, a geometric mean calculation is performed to form a consensus pairwise comparison matrix for Leisure and cultural value and Offer value factor and sub-factor; then the consistency ratio of each pairwise comparison matrix is calculated; then calculate the weight of each factor and sub-factor to determine the local ranking and global ranking. To calculate the global weight of sub-factors and global rank, multiply the weight of each factor by the weight of the sub-factor. The results of consensus pairwise comparison matrices, global weights and ranks are found in Tables 2-7. Figure 2 shows the rank of sub-factors affecting homestay destination selection.

Table 2: Aggregate comparison matrix of factor

	F1	F2
F1	(1,1,1)	(0.2,0.73,5)
F2	(0.2,1.37,5)	(1,1,1)

Table 3: Fuzzy weights of factor

Criteria	Fuzzy Weights
F1	(0.1,0.421,2.5)
F2	(0.1,0.578,2.5)

Table 4: Aggregate comparison matrix of sub-factor within Leisure and cultural value (F1)

	F11	F12	F13	F14
F11	(1,1,1)	(0.14,0.58,9)	(0.11,0.26,1)	(0.11,0.67,7)
F12	(1,1.72,7)	(1,1,1)	(0.2,0.75,1)	(0.2,0.75,1)
F13	(1,3.79,9)	(1,1.34,5)	(1,1,1)	(0.2,0.89,5)
F14	(0.14,1.49,9)	(1,1.34,5)	(0.2,1.12,5)	(1,1,1)

Table 5: Fuzzy weights of sub-factor within Leisure and cultural value (F1)

Sub-factor	Fuzzy Weights
F11	(0.017,0.134,1.627)
F12	(0.037,0.234,0.939)
F13	(0.054,0.344,2.236)
F14	(0.034,0.288,2.236)

Table 6: Aggregate comparison matrix of sub-factor within Offer value (F2)

	F21	F22	F23	F24	F25
F21	(1,1,1)	(1,1.66,7)	(1,1,1)	(1,2.91,7)	(0.11,0.42,1)
F22	(0.14,0.6,1)	(1,1,1)	(1,1.26,5)	(0.2,1.16,5)	(1,2.31,5)
F23	(1,1,1)	(0.2,0.79,1)	(1,1,1)	(1,3.67,9)	(1,3.42,7)
F24	(0.14,0.34,1)	(0.2,0.87,5)	(0.11,0.27,1)	(1,1,1)	(0.11,0.27,1)
F25	(1,2.39,9)	(0.2,0.43,1)	(0.14,0.29,1)	(1,3.67,9)	(1,1,1)

Table 7: Fuzzy weights of sub-factor within Offer value (F2)

Sub-factor	Fuzzy Weights
F21	(0.059,0.214,0.852)
F22	(0.045,0.214,1.0278)
F23	(0.067,0.294,0.896)
F24	(0.019,0.0869,0.539)
F25	(0.045,0.189,0.942)

Table 8: Global weight and rank of factors and sub-factors

Factor	Factor weight	Sub-factor weight in relation to the factor weight	Global weight	Global weight (crisp value)	Rank
Leisure and cultural value (F1)	(0.1,0.421,2.5)			0.478	2
Local culture (F11)		(0.017,0.134,1.627)	(0.002,0.056,4.067)	0.1	7

Factor	Factor weight	Sub-factor weight in relation to the factor weight	Global weight	Global weight (crisp value)	Rank
Natural landscapes (F12)		(0.037,0.234,0.939)	(0.004,0.098,2.348)	0.075	8
Location (F13)		(0.054,0.344,2.236)	(0.005,0.145,5.59)	0.155	1
Leisure activities (F14)		(0.034,0.288,2.236)	(0.003,0.121,5.59)	0.148	2
Offer value (F2)	(0.1,0.578,2.5)			0.522	1
Price (F21)		(0.059,0.214,0.852)	(0.006,0.124,2.131)	0.108	6
Service quality (F22)		(0.045,0.214,1.0278)	(0.005,0.124,2.57)	0.121	4
Tour program (F23)		(0.067,0.294,0.896)	(0.007,0.171,2.241)	0.125	3
Facilities (F24)		(0.019,0.0869,0.539)	(0.002,0.05,1.35)	0.059	9
Host members (F25)		(0.045,0.189,0.942)	(0.005,0.11,2.356)	0.11	5

As shown in Table 8, Offer value (F2) is the highest ranked factor, followed by Leisure and cultural value (F1).
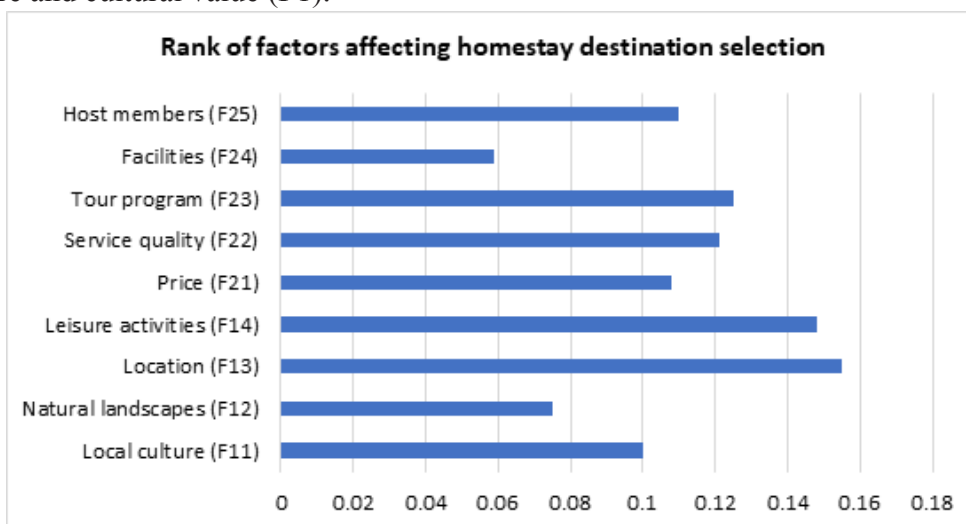
Figure 2: Rank of sub-factors influencing AI adoption in banking sector

The results in Table 8 represent the experts' evaluations based on their experience with and knowledge of homestay tourism services. As shown in Table 8 and Figure 2, The "location (F13)" of the destination was ranked as the first important factor (0.155) for homestay tourist selection. The second factor is 'Leisure activities (F14)' (0.148). These two factors have very close scores. However, the third and fourth priority-order factors, 'Tour program (F23)' (0.125) and 'Service quality (F22)' (0.121), respectively, have a large gap with the first two factors. Ranked as the fifth important factor in this study is 'Host members (F25)' (0.11).

From the research results above, the most attractive level is factor, which includes characteristic factor of homestay tourism: destination location. This shows an interesting aspect, in that the highest priorities related to the specific needs of community tourism include the location as the first-ranked attractiveness factor. Previous studies, such as Lakmali and Kajendra [11], Ma et al. [25], and Moon and Han [39], also show the safety and security of the destination with ease of access, cool and fresh climate conditions, and peaceful romantic scenery considered as priority factors in destination selection.

Leisure activities (F14) is the second-ranked attractiveness factor. This finding shows the needs of tourists to experience cultural differences and participate in community activities to find moments of comfort and relaxation. This study reinforces previous research findings on homestay tourism [17], [22], [23], [29], [45].

The third-ranked attractiveness factor is the tour program which includes the criteria of schedule, real-time to perform the trip, price policy, and the services included in the travel program. Although ranked third, the gap between this factor and the first and second factors is relatively large, which shows the attractiveness of homestay tourism related to the local culture and the natural conditions of the destination [29], [44].

5. MANAGERIAL IMPLICATIONS

This study prioritizes attractive attributes for selecting homestay destinations. While previous studies often conduct tourist surveys that focus on service quality, satisfaction, travel motivation, and loyalty [6], [9], [10], [17], [20], [21], [29], [45], research is lacking that assesses attractive attributes for homestay tourism destinations based on expert opinions. Dunn (2005) argues that expert judgment based on experience and expertise will lead to objective and reliable results. Furthermore, although the FAHP has been used extensively in tourism research, they have not previously been combined to evaluate the attractive attributes of homestay tourist destinations. Kahraman et al. [19] states that the FAHP method uses scientific multi-criteria decision-making to help classify factors that affect selection decisions. In this study, the issue that has not been done before will be clarified by using FAHP to prioritize attractive attributes for homestay destination selections.

This study contributes to the construction of specific attributes for homestay tourism from the perspective of tourism experts. The results indicate specific attractive attributes and classify them into two groups. Group 1 includes factors considered characteristic of homestay tourism (e.g., geographical location, local culture). Group 2 relates to tourism operation (e.g., tour program, recreational activities, service quality). Although previous studies are often classified based on push factors [8], [14], [15], [16], [29], [51], this study shows the role of pull factors (attracting tourists) in homestay tourism. Dey et al. [10] note the role of pull factors; however, their research results do not prove it. The present results provide evidence supporting pull theory in homestay tourism. In addition, the results also

indicate the FAHP method's applicability in multi-criteria decision-making in many other fields, including tourism sector [25], [52], [53]. The study also shows that the FAHP will provide more multidimensional and clearer results in evaluating attractive properties for each destination and shows the distance to reach the ideal coefficient of each destination.

This study's findings provide support for tourism businesses in developing marketing activities and homestay tourism products. In the post-COVID-19 era, attracting domestic and international visitors for homestay tourism is a solution that ensures tourists' safety and improves the tourism business. This research is also helpful for homestay marketers in developing strategies to improve competitiveness. Strategists should focus on maintaining or improving visitor preferences. This study indicates that homestay tourism managers and marketers must provide quality services, such as leisure opportunities and cultural activities. The results imply that tourist preferences for homestay programs may not necessarily depend on other factors, such as facilities. To attract visitors, tourism managers must pay attention to information about the destination and create a comfortable and safe atmosphere with relaxing services.

From this viewpoint, homestay managers should consider essential attributes for boosting tourist motivation, including the destination's geographical location and accessibility, lifestyle of residents, and cultural events. Local policymakers and homestay households must understand these aspects and focus resources on activities related to destination access, such as visas, COVID-19 testing, and a convenient and prioritized quarantine policy, especially for international tourists. Although all three destinations selected in this study have very diverse cultural resources, they should emphasize specific cultural activities, such as residents' daily activities, folk arts, traditional festivals, and community activities. Furthermore, regarding managers and tour operators, the results show the importance of the attractiveness of a tourism program, leisure activities, and service quality of the destination.

Travel businesses and local managers must also design experience-oriented activities for visitors staying at homestay destinations. For example, they could create attractions with agricultural activities, such as planting and harvesting rice on terraced fields in Sapa, planting and caring for clean vegetables, gardening with the host, cultural exchanges, and learning how to make folk cakes or other local craft products. Mangers could also create cooking experiences with authentic local cuisine and teach visitors to eat in the tradition style and use local ingredients. In addition, they could help visitors discover and learn the local culture and customs through exploring the daily work of farmers, craft villages, pagodas, communal houses, and festivals.

In relation to homestay owners, experts assess that knowledge and professionalism are necessary for the supplier in homestay tourism. However, professional knowledge and

skills in homestay tourism are the most severe difficulties households face in the three homestay destinations in this study, indicating this is a large obstacle for households. Therefore, the authorities must organize training sessions for host households to strengthen their business skills, professionalism, and customer service processes. For both people who are participating in homestay tourism and those who are not, it is necessary to encourage friendliness and hospitality towards tourists, since these are necessary conditions for homestay tourism activities.

Despite the specific findings mentioned above, this study encountered some limitations in finding relevant literature, owing to limited access to data systems. In addition, through the application of FAHP method to evaluate prioritization, only nine attributes were applied, without an in-depth analysis of the indicators or the influence of each indicator on the other indicators' different localities. Another limitation of this study is that the survey was only conducted with 38 experts. Therefore, further studies should conduct research using a more comprehensive database to provide a more in-depth analysis of the attractive attributes of homestay destinations, and with more destinations. The proposed properties in this research need more specific indicators and surveys with more experts, as well as other empirical research methods.

6. CONCLUSIONS

A number of factors that affect homestay destination selection have been evaluated in this study. In order to rank the factors affecting homestay destination selection, the paper proposes employing the FAHP methodology. A literature review and the opinions of an expert panel have resulted in the identification of a total of 9 critical factors. The relative importance of each of these characteristics and how they affect the various experience dimensions have been determined through the use of FAHP. The results show that, out of all the factors, the "Location" element is the most important. The findings provide direction for practitioners in increasing the number of tourists using homestay service. Future research can be done in several directions. In this study, a group of experts discussed the factors affecting homestay destination selection. However, there may be some differences in cultural beliefs or regulations between groups of people. Therefore, further studies should be conducted in different communities to validate the validity of the proposed model given in this study. Furthermore, FAHP makes the assumption that all of the different decision-making factors and sub-factors are independent of one another, but while dealing with the real-world problems, it is not always possible to consider this assumption. This may be considered an additional limitation. This is left to future researchers to nurture.

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EXPLOITING SUSTAINABLE COMMUNITY-BASED TOURISM IN ASSOCIATION WITH PRESERVING AND PROMOTING CULTURAL VALUES IN MAI HICH COMMUNE, MAI CHAU DISTRICT, HOA BINH PROVINCE

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Abtract: Community tourism is a type of tourism towards sustainable development. The purpose of community-based tourism activities is to create conditions for local communities to participate in tourism activities, generate income sources, and improve their lives. Develop community-based tourism to help exploit unique indigenous cultural values to serve tourists. Thereby, helping the local community preserve the unique cultural features. Mai Hich is a commune located in the northwest of Mai Chau district, Hoa Binh province, that has many villages developing community tourism activities with many tourism development models that have been put into operation. This study aims to assess the current situation of community tourism development through the exploitation of traditional cultural values of the Thai community here. Within the scope of the article, utilizing the methods collecting materials through the process of ethnographic fieldwork and carrying out the survey of questionnaires; combined with the methods of processing documents, the authors wish to give the most objective assessment of the situation of sustainable community tourism development in Mai Hich commune, Mai Chau district, Hoa Binh province. Therefore, the authors proposed several solutions to contribute to the development of community tourism in a sustainable way, linking tourism activities with the preservation and promotion of local cultural values.

Keywords: Community-based tourism; Sustainable development; Mai Hich commune, Mai Chau district, Hoa Binh province.

Tóm tắt: Du lịch cộng đồng là loại hình du lịch hướng tới sự phát triển bền vững. Mục đích của hoạt động du lịch cộng đồng là tạo điều kiện cho cộng đồng dân cư địa phương tham gia vào hoạt động du lịch, tạo ra nguồn thu nhập, cải thiện đời sống. Phát triển du lịch cộng đồng giúp khai thác những giá trị văn hóa bản địa đặc sắc phục vụ cho khách du lịch, thông qua đó, giúp cộng đồng dân cư địa phương gìn giữ và bảo tồn được những nét văn hóa đặc trưng. Hiện nay, xã Mai Hịch, huyện Mai Châu, tỉnh Hoà Bình có nhiều xóm phát triển các hoạt động du lịch cộng đồng với nhiều mô hình phát triển du lịch đã và đang được đưa vào khai thác. Trong phạm vi bài viết này, bằng các phương pháp được sử dụng là phương pháp thu thập tư liệu thông qua quá trình điền dã dân tộc học và thực hiện việc điều tra phiếu, bảng hỏi; kết hợp với các phương pháp xử lý tư liệu. nhóm tác giả đã tập trung phân tích thực trạng hoạt động khai thác du lịch cộng đồng tại xã Mai Hịch, từ đó đưa ra những giải pháp phù hợp để phát triển du lịch cộng đồng theo hướng bền vững nhằm gắn hoạt động du lịch với việc bảo tồn và phát huy giá trị văn hoá của địa phương.

Từ khóa: Du lịch cộng đồng; Phát triển bền vững; xã Mai dịch huyện Mai Châu, tỉnh Hoà Bình

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1. INTRODUCTION

Developing community tourism is essentially a perspective of sustainable tourism development, with the community at its core, playing a decisive role in conserving and enhancing the values of local culture, while also contributing to the preservation of resources and protection of the environment at the destination. Community tourism activities contribute to creating additional employment opportunities for residents, helping them increase income and improve their quality of life. Sustainable community tourism development is based on the exploitation of the unique cultural values of the locality, contributing to the preservation and promotion of those traditional cultural values.

Mai Hich is a mountainous commune of Mai Chau district, Hoa Binh province, 14 km northwest of the district center. There are a total of 935 households, of which 80% are ethnic Thai. Since 2011, after implementing the Cohed project, Mai Hich has been a destination for many domestic and foreign tourists, with the desire to immerse themselves in nature and explore the life of the local community.

Currently, the whole commune consists of seven villages, of which four villages (Cha Lang hamlet, Hich 1 hamlet, Hich 2 hamlet, Hai Son hamlet) have accommodation facilities and many community tourism activities. The remaining three villages (Ngoa hamlet, Den hamlet, Mai Hoang Son hamlet) are also working on policies to develop tourism.

With the materials collected from field surveys, within the scope of the article, we want to give the most objective view of the current situation of community tourism activities in Mai Hich commune, and at the same time propose some solutions to promote community tourism activities towards sustainable development.

2. THEORETICAL BASIS AND RESEARCH OVERVIEW

- *Community tourism*

Community tourism (CBT) appeared in the '80s and '90s of the last century in the countries of Africa, Australia, and Latin America. This form of tourism was initially developed through NGOs and the World Union for Conservation of Nature. Today, community tourism has spread and become attractive in countries and territories in Asia such as Indonesia, Philippines, Thailand, India, Nepal, Taiwan... These are places with diverse and unique cultures that still maintain their indigenous cultural identity.

The Endowment Fund for Nature (WWF, 2001) states that "CBT is an activity in which local communities directly participate and play an important role in management and development. Much of the benefit goes to the community." Hausle and Strasdas (2000) expand the definition of CBT by affirming that it is not merely a type of tourism

but also an active and active participation of the community in all aspects, while directly contributing to economic development for the people as well as for the locality. Often ethnic minorities, are quite isolated from modern society and still retain some part of the traditional way of life, which visitors from developed areas often find strange and mysterious to come into contact with (WWF, 2001).

According to the view presented in the "Standards for Community Tourism" agreed by Southeast Asian countries in 2016, CBT is a form of tourism that the community owns, operates, coordinates, and manages, to improve the economic condition of the community through activities that support sustainable development, maintain and protect valuable cultural and social traditions, as well as natural resources (ASEAN, 2016).

According to the Vietnam Tourism Law 2017, Clause 15, Article 3, Chapter 1 "Community tourism is a type of tourism developed based on the cultural values of the community, managed, organized, exploited and benefited by the local community".

- *Develop community-based tourism in a sustainable way*

According to A. Guizzardi *et al.* (2022), the main indicator for the success of sustainable tourism development is the conservation of natural, environmental, and cultural resources. In addition, tourism has comparative advantages that can drive economic growth in an area.

According to S. Asker *et al.* (Boronyak *et al.* 2010) and NB Salazar (2012), community tourism development has been developed since the 1990s to increase the participation of local communities in tourism development. Community tourism means tourism activities that the community owns, operates, and manages or coordinates at the community level. These activities contribute to the well-being of communities by supporting sustainable livelihoods protecting traditional socio-cultural values and conserving cultural and natural heritage resources (Novelli, Klatte, and Dolezal 2017).

Rachmawati *et al.* (*et al.* 2021) mention that the concept of sustainable community tourism can be an effective model to benefit local communities. S. Nitikasetsoontorn (2014) explains that the seven factors that are key to the success of community tourism are: community involvement in decision-making, local ownership, collective responsibility, leadership, governance, uniqueness, and differentiation. In the view of E. Ruiz-Ballesteros (2023), community tourism is a smart strategy to build and strengthen community resilience in realizing social and environmental sustainability. Ballesteros and Tejedor's research examines the interrelationship between the implementation of community tourism and community resilience in the social ecosystem. Anuar and Sood (2017) affirm that community tourism has a very positive influence on rural development in terms of economy, society, and environment. In other words, community tourism is expected to

implement the principles of sustainable development and community development in general.

Developing sustainable community tourism is intricately tied to conserve of cultural values. Preserving and promoting cultural values entails endeavors aimed safeguarding and maintaining the integrity of heritage in its original state. Concurrently, enhancing cultural values involves initiatives to integrate cultural heritage into social reality, recognizing it as an internal resource and potential contributor to societal progress, thereby offering tangible merits and intangible benefits to individuals while embodying cultural aspirations for societal advancement.

In international and Vietnamese legal frameworks, terms like protection, preservation, and conservation frequently appear, denoting shared objectives concerning management, preservation, and promotion of cultural values, aiming to mitigate degradation, deterioration, and distortion of cultural heritages. Conservation and promotion of cultural heritage assume pivotal roles in tourism, attracting increased concern withthose of tourists. Indigenous cultural values at destinations are significant assets for local tourism development, enriching experiences and drawing tourists. However, preservation of cultural heritage necessitates collective community efforts across all fronts. Preservation and promotion endeavors should cater to the material and spiritual needs of the community, ensuring mutual benefit from heritage.

With sustainable community tourism development, the nexus between cultural values preservation and promotion is paramount. It fosters cultural exchange and facilitates the creation of tourism programs and activities to interaction and dialogue between tourists and the local community. That fosters tourists' appreciation for local culture, preventing harm or infringement upon community cultural values. Respect for local culture enhances tourists' reception and interest in tourism experiences. Additionally, it bolsters support for and encourages community engagement, prompting tourist involvement in local activities and projects, such as agricultural work, festivals, or community development initiatives. Moreover, backing efforts to preserve and promote cultural values aids tourists in gaining deeper insights into local culture, fostering awareness, and garnering support from both the community and tourists alike.

In Mai Hich commune (Mai Chau), according to the authors' research, there has not been much research on community tourism activities. Recently, the study "Exploiting traditional cultural values of Thai people associated with tourism development" (Survey in Mai Hich commune, Mai Chau district, Hoa Binh province) by authors Phan Lan Huong and Dang Phuong Anh has partially generalized the situation of exploiting traditional cultural elements of Thai people in tourism activities in Mai Hich commune, through

that, the authors assesse the importance of local tourism activities in the overall economic development of the Northwest, towards the goal of sustainable development.

It can be seen that so far there has been no in-depth research on sustainable community tourism development in Mai Hich commune (Mai Chau district, Hoa Binh province). Therefore, this article focuses on analyzing the potential and current situation of community tourism development in Mai Hich commune, through which the authors wish to make some proposals on solutions to preserve and promote cultural values towards sustainable community tourism development here.

3. RESEARCH METHODOLOGY

3.1. METHODS OF COLLECTING MATERIALS

Ethnographic fieldwork: is the main method of gathering material for the article.

- First of all, work with the commune authorities to grasp the landscape environment, the general situation of population, ethnicity, socio-economy, and culture of Mai Hich commune to capture and select villages with community-based tourism activities; At the same time, ask for statistics and reports on the socio-economic situation of the locality.

- Go down to the village to work with village officials to grasp the general situation in the commune and select interview subjects.

After that, the research team survey with specific operations of Ethnographic fieldwork: observation attendance, interviews in different forms, retrospective surveys, group discussions...

- Observation of participation: during the field trip, the research team participate in several meetings at the cultural house in Ngoã village, and attend the training session of village officials on improving the sense of responsibility of people in preserving and promoting cultural identity.

- Interviewing: is one of the important techniques used to gather materials during fieldwork, including general interviews (structured interviews) or department interviews (semi-structured interviews) of research problems, depending on the understanding and conditions of the interviewee.

The interviewees are relatively diverse, including commune leaders, neighborhood officials, interviews with homestay owners, guides, tourists, and indigenous people.

In the interview, we also use retrospective investigative operations, i.e. recapturing the memory of respondents, and resetting past events, to have materials to analyze, compare, and explain aspects of current life. This operation is mainly applied to the elderly, who are knowledgeable about Thai customs and cultural identity.

Methods of surveying questionnaires: we distribute questionnaires, investigate the

participation of local communities in tourism activities in Mai Hich commune, investigate the business situation of accommodation establishments serving tourists...

3.2. Methods of processing materials

The article uses interpretive methods, meta-analysis, comparative methods, historical, and statistical methods to form the aggregate results of the study; thereby pointing out some situations of community tourism activities in Mai Hich commune before the COVID-19 epidemic and now, and suggesting and offering some solutions to develop sustainable tourism here.

4. RESULTS AND DISCUSSION

4.1. Potential for community-based tourism development in Mai Hich commune

- Natural Tourism Resources

About 13 km from the center of Mai Chau district, Mai Hich commune is considered a potential destination for community tourism experience activities. With the convergence of majestic mountains and forests and ethnic and cultural diversity, Mai Hich offers a special and attractive travel experience.

Currently, Mai Hich is becoming a new and interesting destination for tourists. The development of homestays and guesthouses here provides not only accommodation but also opportunities for visitors to explore the lives of locals. The utility services provided as part of the community development project not only help create new sources of income but also help promote the image of Mai Hich to visitors.

In addition, Mai Hich also owns diverse natural resources such as small and large lakes, along with the strong growth of fruit trees such as plum, crocodile, and rambutan ..., facilitating the development of agriculture and aquaculture in this locality. This not only enriches the landscape but also creates opportunities for the local tourism industry to develop sustainably.

With unfavorable natural conditions, Mai Hich is gradually asserting its position on the tourism map of Hoa Binh. Mai Hich has also become an attractive destination for tourists who want to explore the special cultural and natural beauty of the northern mountainous region of Vietnam.

- Cultural tourism resources

Mai Hich commune (Mai Chau) has long attracted both domestic and foreign tourists because of its natural beauty and unique cultural diversity. Here, visitors can not only enjoy the immense beauty of nature but also experience the special cultural values of the Thai people. With 7 villages, 923 households, and more than 4,250 people, Thai ethnic groups constitute the majority in Mai Hich commune.

Local authorities have always focused on and created conditions for households to participate in tourism activities, thereby contributing to introducing local cultural features. As a result, visitors have the opportunity to participate in traditional cultural performances, enjoy the unique culinary culture, and learn more about the lifestyle and daily work of the Thai community.

The traditional culture of the Thai ethnic people in Mai Hich commune, Mai Chau district, Hoa Binh province is known for its diversity and richness, carrying great potential for tourism development. The Thai people living here, belonging to the White Thai group, have long created a unique cultural life, making an important contribution to the development of the region. The traditional Thai festivals in Mai Chau are diverse and rich, including rituals such as the Seasonal Bridge, the Rain Bridge, the New Home Fire, the New Rice Celebration, the Astral Abandonment Ceremony, and the Cha Gong Festival. The Chá Gong Festival, also known as Petro Khan, is one of the most important and largest community events of the Thai people. The main purpose of the festival is to pay tribute and honor the mo, the teachers who teach how to pick up medicine.

The most special feature in the cultural resources of the Thai people is the spread dances. Vietnam's "Xoe Thai Art" heritage was officially inscribed by UNESCO on the Representative List of the Intangible Cultural Heritage of Humanity on 15/12/2021. Xoe dance is a unique creation that has been preserved and handed down through generations. At the same time, Xoe dance is also a way for Thai people to convey cultural values, traditions, and solidarity, contributing to promoting local traditional values and enriching Vietnamese culture in general.

In the field of tourism, these traditional cultural values, both tangible and intangible, such as village architecture, traditional festivals, customs and customs, traditional houses, traditional cuisine, as well as traditional crafts, have been flexibly applied and developed to create unique and attractive tourism products.

Thanks to the combination of modernity and traditional cultural identity, Mai Hich increasingly attracts the attention of tourists. The preservation and development of traditional cultural values is not only an important part of the protection of cultural heritage but also an important factor in promoting community tourism and local economic development. At the same time, it also helps to promote pride and self-awareness of locals about their culture. This is a favorable condition for Mai Hich to make good use of community tourism activities associated with sustainable development.

4.2. Current situation of community-based tourism development in Mai Hich commune

4.2.1. Tourists and tourism revenue

International tourists to Mai Hich commune are mainly tourists from France and Australia, in addition to visitors from ASEAN countries such as Thailand, Malaysia,

and Singapore, as well as Northeast Asian countries such as Japan, China, and Korea. French tourists account for the largest proportion. From 2020 to 2021, the number of French tourists decreased sharply due to the impact of the COVID-19 pandemic. From 2022 to 2023, the number of international tourists returning to Mai Hich is gradually recovering compared to the previous period, the goals of international tourism include resort, community tourism, village exploration and exploration, and ecotourism.

Domestic tourists are mainly visitors from Hanoi and provinces in the Northern Delta such as Hai Phong, Quang Ninh, Ha Nam, and Nam Dinh; visitors from the Northwest such as Lai Chau, Dien Bien, and Son La. A small number of visitors also come from the southern and central provinces. Domestic tourists come to Mai Hich at different times of the year, but the peak is usually in spring (to participate in festivals and spirituality) and summer (to participate in ecotourism, convalescence, adventure tourism, and backpacking tourism).

According to the report on the implementation of the Socio-Economic Development Plan for the periods 2016-2020 and 2021-2025 by the People's Committee of Mai Hich commune, the revenue from the trade and service sectors, as well as tourism, reached 64.026 billion VND, achieving 190% of the plan. The trade and service sectors have witnessed development with diverse goods, meeting the consumption and production needs of the people. Rural markets have been invested in construction and operation, facilitating the circulation of goods, and timely serving production and people's lives. Tourism services were identified as one of the sectors to focus on for investment and development during the 2015-2020 term and subsequent terms by the 20th Congress. Over the years, local tourism activities have progressed, with community-based tourism models being invested in and expanded, attracting an increasing number of tourists. Currently, there are 10 households operating homestay tourism models; the number of visitors to the commune over the past 5 years has reached 7,843, with 5,454 of them being international tourists[1].

In 2023, tourism business households in Mai Hich commune have invested in improving facilities to continue welcoming visitors effectively and have stable growth. The number of visitors increased significantly compared to the time of the outbreak. According to the survey results of the research team, tourists are satisfied and interested in community tourism activities here, visitors especially love the trip to nature, enjoy the scenery and rustic cuisine, and participate in other activities with the people such as spreading dance, farming, handicraft making...

4.2.2. Infrastructure and material and technical foundations for tourism

The results of the report on the implementation of the Socio-Economic Development Plan for the periods 2016-2020 and 2021-2025 of Mai Hich commune show that the local government has focused on investing in many important transportation programs and

projects to develop the economy, including tourism. The mobilized capital for development investment in the area has increased significantly, with a focus on investing in infrastructure development. The total value of basic construction reached 19.081 trillion VND, including rural transportation roads have been hardened: 17,379 out of 26,879 km, reaching 64.6% of the total length; internal roads have been concretized: 2.23 out of 3.305 km, reaching 63.6% of the total length. 20,054 out of 25.8 km of canals have been hardened, reaching 77%; the main canal routes of the hamlets have been hardened. Based on these favorable conditions, accommodation businesses have concentrated on investing, repairing, and upgrading construction items to ensure good quality to meet the needs of tourists.

Table 1. Statistics of accommodation establishments in Mai Hich commune, 2023

STT	Hamlet	Accommodation facilities	Capacity (people)	Start year	Notes
1	Cha Lang Hamlet	Mai Chau Villas Resort	60 – 70	2015	
2	Hamlet 1	Homestay Quy Anh	30	2013	
3	Hamlet 2	Homestay Minh Tho	30	2012	
		Homestay Thuyet Nhung	50	2012	
		Homestay Thao Duan	35	2015	
		Homestay Van Ha	17	2015	
		Homestay Tu Diep	35	2017	
		Homestay Dan Nhu	40	2014	
		Homestay Nhong Retreat	35	2023	
		Homestay Phong Hao	16	2020	

Source: Research group survey results, 2023

In the commune, there are currently 11 households engaged in accommodation services, an increase of 01 households compared to the previous period. Before the COVID-19 outbreak, Hich 2 hamlet welcomed around 20,000 guests annually. On average, each accommodation household serves from 25 to 30 staying tourists. Additionally, there are two community resort destinations: Mai Chau Valley Retreat in Hais Son hamlet (accommodating 60 - 70 guests) and Homestay Thuyet Nhung in Hich 2 hamlet (accommodating 50 guests). These are the two largest capacity accommodation facilities at present. Thanks to the exploitation of local landscapes and the celebration of ethnic culture, these destinations attract tourists year-round; approximately 70% of guests are foreigners, with some European tourists even staying for several weeks in Mai Hich. Accommodation businesses in Mai Hich also lack longevity in the profession; the longest-operating households are Homestay Minh Tho and Thuyet Nhung, which began operating in 2012, while some newly completed households are not yet receiving guests, such as Homestay Nhong Retreat...

To enhance the unique experience and avoid boredom, households engaged in the tourism industry have collaborated through a homestay network with other destinations

such as community tourism in Buoc village, Xam Khoe commune, and Lac village, Chieng Chau commune, to accommodate guests during peak periods that exceed capacity. Additionally, the villages here have also jointly formed local cultural art teams. Currently, the entire commune has 9 cultural art teams, each consisting of 12 to 15 members, actively serving tourists.

4.2.3. Tourism human resources

In recent years, there have been many economic programs and models aimed at creating employment opportunities for the local population. These initiatives encourage household economic sectors and attract organizations and individuals to engage in small-scale industrial production, utilizing local labor resources such as manufacturing building materials, mechanical production, timber processing workshops, trade, services, and tourism. The employment rate of trained labor reaches 25.12%. People are provided with access to various sources of bank loans to create jobs and gradually escape poverty, legitimately enriching themselves.

However, the trained workforce mainly consists of individuals in the fields of agricultural and forestry product processing. The number of locally trained workers in the tourism sector is currently very limited. According to a survey conducted by the authors' group, only two homestay owners, Minh Tho, and Thuyet Nhung, have received formal training in community tourism through the Cohed project implemented in 2011. The remaining households operate independently and have not undergone systematic training.

However, the trained workforce primarily belongs to the fields of agricultural and forestry product processing. The number of locally trained workers in the tourism sector is currently very limited. According to a survey conducted by the authors' group, only two homestay owners, Minh Tho, and Thuyet Nhung, have received formal training in community tourism through the Cohed project implemented in 2011. The remaining households operate independently and have not undergone systematic training.

The seasonal nature of community tourism activities at the local level also directly impacts the long-term commitment to the profession. The workforce primarily consists of individuals from families who engage in serving tourists. Only during peak seasons, when the number of staying guests increases, do homestays hire seasonal labor. The wages for seasonal workers, calculated hourly, are not high compared to the income from other local professions. Therefore, attracting and training high-quality human resources for tourism services should be given attention and priority.

4.2.4. Activities to promote the Mai Hich community tourism destination

The commune has 9 cultural performance teams specializing in serving guests at homestays during the evenings. Homestays have collaborated to establish tours and travel

routes with tourist villages in the district, such as Buoc village (Xam Khoe commune), Lac village (Chieng Chau commune), and Pom Coong village (Mai Chau town)… This helps increase the attractiveness of this area while enhancing promotional activities and introductions to tourism, people, and culture of the Thai ethnic group.

Box 1. Interview with the commune leaders regarding the sustainable community tourism development strategy in Mai Hich commune

Mr. Ha Van Bong (born in 1977, Chairman of the People's Committee of Mai Hich commune): "In the upcoming period, we will continue to encourage community participation in exploiting the potential and advantages of the locality for the development of community tourism. Our goal is to strengthen and preserve the cultural identity of the ethnic minorities, while also increasing income for the people and building Mai Hich into an ideal destination for domestic and international tourists to visit."

Source: Research group survey results, 2023

Besides the support activities from government management agencies, business households also conduct promotional activities through social media platforms on their own. Below is a statistical table of the channels used by homestays for marketing activities.

Table 2. Statistics of promotional channels used by accommodation establishments in Mai Hich commune

STT	Hamlet	Accommodation facilities	Promotional channels
1	Cha Lang Hamlet	Mai Chau Villas Resort	Agoda, Facebook, website, Maichautourist.com
2	Hamlet 1	Homestay Quy Anh	Traveloka, Facebook
3	Hamlet 2	Homestay Minh Tho	Facebook Traveloka,
		Homestay Thuyet Nhung	Connecting with approximately 10 travel companies nationwide
		Homestay Thao Duan	
		Homestay Van Ha	
		Homestay Tu Diep	
		Homestay Dan Nhu	
		Homestay Nhong Retreat	Website; Booking.com; facebook
		Homestay Phong Hao	Traveloka, Trangvang.biz

Source: Research group survey results, 2023

According to the survey results above, the majority of platforms used in promotional activities mainly include Facebook, Traveloka, Trangvang.biz, Agoda... Most households primarily self-post without any investment plan for online promotional activities. Collaboration with tourism and travel companies has also not been a significant focus for the business households, except for Homestay Thuyet Nhung, which has partnered with over 10 travel companies for joint promotion and customer acquisition through the business channel.

5.1. Assessment of the current situation of community tourism development in Mai Hich commune

5.1.1. The accomplishments

In general, the number of tourists visiting Mai Hich has returned and recovered recently. Based on the survey results, most tourists feel satisfied and intrigued by the experience of community tourism and cultural tourism in Mai Hich. Tourists enjoy immersing themselves in the natural beauty and experiencing the most sincere and rustic experiences that nature offers.

The cultural tourism resources, especially the ancient Thai dance forms and community festivals of the Thai people here, are very attractive to visitors. These are valuable community tourism resources that help Mai Hich commune diversify supplementary service activities to enhance the tourist experience in the future.

The physical infrastructure of tourism continues to be continuously invested and upgraded. Expanded and concrete roads facilitate trade and travel from other areas to Mai Hich much more conveniently than before. This is an opportunity to develop sustainable community tourism in Mai Hich.

With the investment and attention from local authorities at all levels, government departments are creating conditions to expand mechanisms to attract and invest in upgrading, repairing, and developing community tourism activities.

The tourism workforce has seen significant growth, and at the same time, the local community has received support through training and workshops to promote the development of community tourism. Many projects related to community tourism development have been implemented and have achieved significant achievements.

5.1.2. Areas that have not yet been achieved

The exploitation of the cultural resources of the Thai community is not appropriate, leading to tourists feeling bored and encountering repetition when visiting this place. Community tourism activities in Mai Hich have not been strongly promoted or enhanced to attract more attention from tourists on various media platforms.

The exploitation of the cultural resources of the Thai community in Mai Hich has not been effectively carried out, leading to tourists potentially feeling bored, especially with cultural performances lacking a well-prepared script and spontaneity. Tourists do not have enough time to participate in traditional Thai dances or engage with performers on stage. Community tourism-related activities have not been strongly promoted and enhanced, reducing the attention and interest of tourists on various media platforms.

There is a shortage of high-quality workforce to serve tourism. The workforce in the tourism sector has not been fully trained in reception procedures, resulting in service

to tourists not reaching professional and appropriate levels. Additionally, the local community has not had the opportunity to participate in comprehensive training courses on new skills, including welcoming guests, serving tourists, presenting food attractively, and guiding tourists on sightseeing tours.

The infrastructure and technical facilities in the villages are not evenly distributed. The investment in upgrading electricity, water, and transportation infrastructure is not equally allocated, making it difficult for tourists to access tourist destinations conveniently, especially affecting the residents' livelihoods. This situation significantly impacts the development of community tourism in Mai Hich.

Supplementary service activities have not highlighted the unique characteristics, such as traditional Thai Xoe dances not being collected and stored for promotion. Most of the dances served to guests are newly composed. Community tourism promotion activities have not been very effective, mainly relying on individual businesses to independently design and deploy homestay images on social media platforms.

5.2. The solution for sustainable community-based tourism development in Mai Hich commune

5.2.1. Training high-quality workforce from local labor sources to develop community-based tourism

Local authorities need to closely coordinate with tourism businesses, training institutions, and non-governmental organizations to organize awareness campaigns and promote short-term training activities for the community, especially for young people. This includes opening classes to instruct people on the necessary skills and knowledge in the tourism industry. Additionally, encourages students studying in major cities to return to their hometowns to participate in community-based tourism activities.

Furthermore, the opening of training classes and short-term courses on customer reception, understanding the psychology and needs of different tourist groups, as well as service skills and bed decoration for tourists, should also be promoted.

Encouraging each family to have at least one member participate in these courses would provide people with additional knowledge about business and the development of the local tourism industry.

5.2.2. Investing in building infrastructure and technical facilities to serve community tourism.

To effectively develop community tourism, it is necessary to plan specific tourist routes and destinations based on existing transportation routes and utility systems to ensure the best service for tourists. Additionally, support for the community in coordinating guests, and zoning for accommodation, dining, shopping, and entertainment is essential.

The planning process should also focus on parking lots, signage, and tourist facilities, such as public restrooms, tourist information centers, and entertainment areas. This helps

create a convenient and safe environment for tourists and enables the local community to effectively utilize the tourism potential.

5.2.3. Enhancing the promotion of community-based tourism destinations

To effectively promote community-based tourism destinations and products, close coordination is needed among various stakeholders such as local authorities, management agencies, and tourism businesses. This helps residents to proactively engage with tourists.

Furthermore, it is essential to enhance the use of popular promotion channels such as social media, television, newspapers, and destination-connecting programs to bring the image and brand of Mai Hịch's community-based tourism closer to a wider range of domestic and international tourists.

5.2.4. Enhancing the exploitation of cultural activities and supplementary services to enhance the tourist experience

To create highlights and refresh the tourism experience, the community needs to provide opportunities for tourists to participate in the process of preparing local specialty dishes, thereby creating additional unique experiences."

At the same time, building menus with local signature dishes is also crucial. To ensure the quality and safety of food, it is necessary to collaborate with training institutions to train artisans and craftsmen using locally available materials, which should be further developed. This can be achieved through creating souvenir products and policies that encourage participation, ranging from individual households to community-based initiatives.

To achieve sustainable tourism development, it is essential to promote community-based tourism. In the community-based tourism model, traditional values and the role of the community are respected and fully utilized. This not only helps generate new sources of income and improve the livelihoods of local people but also preserves and promotes traditional cultural values.

With the existing potential for community-based tourism, Mai Hich commune needs to focus on developing community tourism combined with responsible tourism practices aimed at sustainable development. With advantages in natural conditions and the distinctive culture of the northern mountainous region, the hospitable and honest local people, all these factors are undoubtedly the most valuable resources for Mai Hich commune to aim for sustainable community-based tourism development.

Furthermore, Mai Hich needs to implement comprehensive solutions and collaboration from all relevant parties, including local authorities, management organizations, tourism businesses, the local community, and tourists. Consensus and cohesive cooperation among these stakeholders will help Mai Hich commune develop community-based tourism sustainably and effectively.

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CULINARY TOURISM IN HA GIANG: THE POTENTIAL DEVELOPMENT IN THE INTEGRATION CONTEXT

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Abstract: *The research was conducted in Ha Giang Province, a locality with rich culinary products that, if exploited properly, can become one of the core tourism products to help enhance the tourism experience, strengthen tourism, and improve the overall operation of tourist destinations in Ha Giang. The research was conducted to understand the value of culinary culture in Ha Giang and its development possibilities. To find out, regardless of whether cuisine is the reason to attract tourists to Ha Giang, and solutions to exploit and develop culinary tourism in Ha Giang in the integration context. We conducted an investigation and interviewed 560 tourists arriving in Ha Giang between May and October 2023. The results show that (i) Ha Giang has many favorable conditions for developing culinary tourism; (ii) culinary products are not the main motivation to attract tourists to Ha Giang, but they are the reason why tourists have a longer length of stay and take up much money during their trip; (iii) the study has provided solutions for the management, marketing, and development of culinary tourism in the integration context.*

Keywords: *Culinary tourism, Ha Giang, products, potential development, integration.*

Tóm tắt: *Nghiên cứu được thực hiện tại tỉnh Hà Giang - một địa phương có sản phẩm ẩm thực phong phú, nếu được khai thác hợp lý thì có thể trở thành một trong những sản phẩm du lịch cốt lõi giúp nâng cao trải nghiệm du lịch và củng cố hoạt động tổng thể của các điểm đến du lịch tại Hà Giang. Nghiên cứu được thực hiện với mục đích tìm hiểu giá trị văn hoá ẩm thực ở Hà Giang và khả năng phát triển của nó; Tìm hiểu ẩm thực có phải là lý do thu hút du khách đến Hà Giang hay không; Giải pháp khai thác và phát triển du lịch ẩm thực ở Hà Giang trong bối cảnh hội nhập. Tác giả tiến hành điều tra, phỏng vấn 560 du khách khi đến Hà Giang trong thời gian tháng 5 và tháng 10/2023. Kết quả cho thấy: (i) Hà Giang có nhiều điều kiện thuận lợi để phát triển du lịch ẩm thực; (ii) sản phẩm ẩm thực không phải là động lực chính để thu hút du khách đến Hà Giang, nhưng nó là lý do khiến thời gian lưu trú của du khách kéo dài hơn và chiếm nhiều kinh phí trong chuyến du lịch của họ; (iii) Nghiên cứu đã đưa ra những giải pháp về quản lý, tiếp thị và phát triển du lịch ẩm thực trong bối cảnh hội nhập.*

Từ khoá: *Du lịch ẩm thực, Hà Giang, sản phẩm, tiềm năng phát triển, hội nhập.*

1. INTRODUCTION

It has been dubbed as the "smokeless industry," tourism has been playing an increasingly crucial role in Vietnam's economic development. According to the Vietnam National Administration of Tourism, in 2023 alone, Vietnam's tourism industry had a significant recovery, with the number of international tourists reaching 12,599,145 million

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people (nearly four times more than in 2022), domestic visitors are estimated to reach 108 million (5.8% more than in 2023). Revenue from accommodation and food services in 2023 is estimated to reach 673.5 trillion VND, an increase of 14.7% compared to 2022 (the Vietnam National Administration of Tourism, 2023). However, it can be seen that, despite exceeding the 2022 target, this number is only 70% compared to 2019 (when the COVID-19 pandemic did not occur).

According to Google Trends (Google's market trend tracking tool), from the beginning of 2023 until now, the demand for tourism in Vietnam has continuously been among the fastest-growing in the world, with the number of searches by international tourists about Vietnam tourism rising from 11th position to 6th position (Tourist Information Center, 2023). This shows that Vietnam has a good opportunity to become an attractive destination and has the capacity to develop tourism to attract international visitors in the next period. Especially when the world becomes "flatter" because of the current information technology revolution, the usage of information technology to develop smart tourism contributes to improving advertising effectiveness and increasing the attractiveness of tourism guides for tourism products, which have a great influence on tourists' destination decisions and length of stay. Therefore, exploiting tourism potential, including culinary tourism, an attractive type of tourism, will significantly contribute to attracting domestic and foreign tourists. This research aims to understand the value of culinary culture and the possibility of developing culinary tourism in Ha Giang, a locality that received the "Asia's Leading Emerging Tourist Destination" award in September 2023.

2. THEORETICAL BASIS AND RESEARCH OVERVIEW

Based on assessments by global opportunity analysts and industry forecasters, the culinary tourism market will grow steadily even when facing global challenges and uncertainties because, no matter where they go, people still need food and drink to survive, or, to put it another way, eating is an essential need of tourists in all tourist destinations (Faruk Seyitoglu, 2018). Therefore, culinary tourism has become important and has become a rapidly growing part of the attractiveness of tourist destinations in recent years. Tourists' desire to experience local flavors at destinations and accommodations has paved the way for the development of culinary tourism (Umit Sormaz; Halil Akmese; Eda Gunes; Sercan Aras, 2016). But due to the cuisine, visitors can have an unforgettable travel experience. Thus, the culinary experience is an important part of every tourist's travel journey.

Culinary tourism has captured attention of scientists in both basic research as well as applied research. First of all, the concept of Culinary Tourism is seen as "Visits to food production places, food festivals, restaurants and specific locations that feature culinary flavors and/or experiences of typical food products as the main reason for the trip" (Enrico Bonetti; Michele Simoni; Raffaele Cercola, 2014). Ashleigh Ellis and colleagues believe that "culinary tourism is about cultural anthropology through understanding

the interactions of tourists with tourist destinations through food" (is about cultural anthropology through understanding the interactions of tourists with place through the medium of food). Culinary tourism is an experience that goes beyond ordinary sightseeing "it is about enjoying the flavors of a region, immersing yourself in its culinary culture and learning about the story that each dish conveys." (UCF, 2019; Iqbal Uddin Abbasi, 2023).

From the perspective of viewing and evaluating the role of culinary tourism, many studies have shown that culinary tourism brings profits to the local and national economies. According to the World Culinary Travel Association (WFTA), 80% of travelers research food and beverage options when traveling to a new destination. Furthermore, 53% of these visitors consider themselves "culinary tourists" (WFTA, 2019). Out of all the possible spending areas, travelers are the least likely to cut their food budget. Even for some tourists, the sole purpose of visiting a place is to experience the cuisine (Norman Au; Rob Law, 2002). Visitors' top four culinary travel activities are: dining at gourmet restaurants, dining at popular bars and restaurants, enjoying street food, and enjoying dining experiences overall through visits to local food factories, dishes, drinks, food festivals, and markets to enjoy cultural experiences (WFTA, 2019).

Culinary tourism brings many benefits to both tourists and destinations, it allows tourists to explore a new culture through food (Ashleigh Ellis; Eerang Park; Sangkyun Kim; Ian Yeoman, 2018). Tasting local dishes and drinks is also a way to connect with locals and gain a deeper understanding of the history, traditions and lifestyle of the destination's residents. On the other hand, culinary tourism also supports and promotes the local economy and promotes sustainable tourism through tourist spending on cuisine (Dennis Nunes, 2023). Culinary tourism can generate additional revenue and create jobs in the hospitality and food industries. With the important role of culinary tourism, Jeou-Shyan Horng, Chen-Tsang (Simon) believe that each country needs to have a strategy to develop culinary tourism by: (i) identifying and effectively using culinary tourism resources; (ii) evaluating government principles for promoting culinary tourism; (iii) adopting marketing strategies to promote culinary cultural sectors; and (iv) constructing educational environment for culinary culture and tourism) (Jeou-Shyan Horng, Chen-Tsang (Simon) , 2012). Recognizing the role of culinary tourism not only from an economic perspective, Matthew J. Stone and his colleagues have proven that the factor that leads to memorable travel experiences for tourists is culinary experiences/ memorable drinks. Therefore, tourism service providers can use this element to better create culinary stories for their destinations (Matthew J. Stone; Joelle Soulard and Erik Wolf, 2017). In the context of the 4.0 revolution with the strong development trend of information technology, the use of culinary-focused travel applications and websites such as Yelp, TripAdvisor, OpenTable, EatWith, LocalEats and FoodSpotting... aims to providing tourists with detailed information about local cuisine, restaurants and culinary tours used

by many young tourists will be a way to promote the development of local tourism in general culinary calendar in particular (Dennis Nunes, 2023).

Vietnam is a multi-ethnic country with diverse culinary nuances, attracting both domestic and foreign tourists. Duong Que Nhu and his colleagues pointed out that the factors that attract tourists are the delicious taste of food and the variety of ways to combine ingredients to create healthy dishes, which are considered unique factors of Vietnamese cuisine (Duong Que Nhu; Nguyen Tri Nam Khang; Nguyen Thi Thao Ly, 2014). However, in order for Vietnamese cuisine to become a tourism product and be able to compete with other countries in the region, it needs to have a highlight and become a professional and attractive form of tourism to attract tourists, both domestically and internationally (Pham Thu Huyen, 2023). Some localities, such as Hanoi, Ho Chi Minh City, Hoi An, Da Lat, Can Tho, Hue, etc., have focused on exploiting cuisine in tourism, contributing to diversifying the tourism product system and promoting culture, bringing Vietnamese cuisine to the world (Le Thi Thu Hien, Le Thi Dieu Mi, 2019; Do Thu Nga, 2022). However, in general, culinary tourism has only been implemented by some tourism operators but has not been focused on at a strategic level (Vuong Xuan Tinh, 2018). It can be seen that the above studies have acknowledged the role of culinary tourism in helping destinations become attractive places for tourists. However, in Ha Giang, a mountainous province inhabited by many ethnic minorities with a rich treasure of folk knowledge, the nuanced dishes of ethnic groups have not been properly researched. Therefore, this study will explore some typical dishes and drinks in Ha Giang as well as culinary customs that can be developed and promoted as culinary products capable of attracting tourists looking for local culinary experiences. Specifically, this article seeks to answer the main research questions: (i) Ha Giang's culinary tourism potential; (ii) How does Ha Giang cuisine impact current travel trends for culinary tourists? (iii) What solutions can help promote Ha Giang cuisine?

3. DATA AND RESEARCH METHODS

The study applied a combination of qualitative and quantitative research methods by approaching and collecting data from a questionnaire survey with 560 tourists to measure the following aspects: Tourist characteristics (social demographics, association, economic level); the main reason for choosing Ha Giang as a tourist destination; visitors' feedback on Ha Giang's culinary experience; their favorite food when coming to Ha Giang; consumption habits when traveling. The places where the survey was conducted were some local restaurants and fairs in Ha Giang and Dong Van cities. Restaurants are selected based on two conditions: location (in a tourist destination or near a hotel, at a market), and menu. The survey was conducted after visitors had just finished breakfast, lunch, or dinner, so the culinary experience was still fresh in their minds. The survey implementation period is May and October 2023. The survey response rate is 100%; the

article author personally supervised and collected the survey form after implementation. The collected data is processed using Excel software.

4. RESEARCH RESULTS

4.1. General information

Ha Giang is not an ideal place to live for residents because Ha Giang does not have the advantage of soil due to its steep, arid mountainous terrain and low mountainous areas prone to landslides. However, Ha Giang is a province with many unique factors that make it attractive to tourists, if they know how to exploit and utilize it. Among those, the disadvantages of terrain are also a special feature that other provinces and cities do not have, making this place an ideal destination for tourists looking for wild and majestic beauty. In particular, 19 ethnic minorities with traditional cultures, including unique culinary cultures, make Ha Giang an attractive tourist destination. That is also the reason why, at the World Travel Awards 2023 (WTA) Asia and Oceania award ceremony taking place in September 2023, Ha Giang province surpassed many candidates to honorably receive the "Destination" award, leading emerging tourism in Asia in 2023." The number of guests with whom the author conducted the survey was quite diverse (Table 1).

Table 1. General information about surveyed tourists

Personal information		Quantity (n=560)	Propotion (%)
Gender	Male	268	47.9
	Female	292	52.1
Age	From 16 to 24 years old	130	23.2
	From 25 to 34 years old	90	16.1
	From 35 to 54 years old	162	28.9
	Over 55 years old	178	31.8
Occupation	Student	65	11.6
	Freelancer, no answer	29	5.2
	Public official	142	25.4
	Business	92	16.4
	Teacher	70	12.5
	Retire	162	28.9
Hometown (province, country)	Vietnam	533	95.2
	United States of America	6	1.1
	England	12	2.1
	Netherlands	5	0.9
	France	4	0.7

Source: Author's field survey

It can be seen that the majority of tourists surveyed were aged 55 years or older (31.8%), followed by those aged 35-54 (28.9%) and 16-24 (23.2%). Respondents came

from 23 different provinces and cities and 5 countries, of which the largest number of domestic visitors was 95.2%. In terms of gender, there are more female guests than male guests. While traveling, this is also the number of guests who spend more money on shopping and dining.

4.2. Typical dishes of Ha Giang

Ha Giang cuisine reflects the rich cultural diversity of the living ethnic groups, influenced by the traditional indigenous culture of the ethnic groups as well as cultural interference with ethnic groups on the other side of the border the northern border is China. The richness of dishes along with the cultural stories of the dishes, the dining space... can all be exploited into culinary products that create the attraction of the destination. When surveying tourists' evaluations of typical dishes and drinks they have enjoyed with the scale: normal (1 point), like (2 points), very like (3 points), the author obtained the following results:

Table 2. Tourist reviews of some typical dishes and drinks in Ha Giang

No	Dishes name	Tourists' evaluation (n=560)			General average
		Normal	Like	Very like	
1	Au Tau Porridge	2	63	495	2.88
2	Buckwheat Cake	13	55	492	2.85
3	Thang Co	42	5	513	2.84
4	Thang Den	11	12	537	2.93
5	Sour Pho	0	43	517	2.92
6	Grilled moss	24	165	371	2.33
7	Men Men	54	321	185	2.20
8	Corn Pho	0	95	465	2.83
9	Bong fish	4	62	494	2.87
10	Chung Gu cake	6	122	432	2.76
11	Corn wine	1	24	535	2.91
12	Buckwheat wine	1	67	492	2.75

Source: Survey results

Thus, it can be seen that Ha Giang's typical dishes are highly appreciated by tourists. After interviewing 15 tourists, the author received a common opinion: "The appreciation of tourists for Ha Giang's cuisine is not the sophistication in cooking but the uniqueness and cultural space to enjoy the food". Ms. N.T.V.A said that her group decided to stay one more day so that the next morning they could go to the market to enjoy the dish Thang Co (cuzthanz) after hearing the story about the origin of the dish from the tour guide "Thang Co" originated from the story that the Mong people still tell their children and grandchildren, reminding them of their tragic history of being chased by other ethnic groups, causing them to flee from China to Vietnam and many other places around the world. During that

evacuation, the whole group was starving and food was exhausted, leaving only the horses. Necessary evil, they had no choice but to gradually slaughter their war horses to overcome their hunger. In hiding, without any pots or pans, they used the horse's skin as a large pan to cook all that was left of the horse. To enjoy Thang Co, you have to go to the market to fully experience the specialness of this communal dish". According to her group's assessment, Thang Co is quite difficult to eat, but everyone appreciates the experience of going to the market, sitting next to a hot pan of Thang Co, enjoying steaming Thang Co ladled into a bowl pickled with fresh chili, sip sips of spicy corn wine, listen to the sound of the flute, and watch the dance of the Mong people. Visitors' evaluation of the culinary experience in Ha Giang in some aspects, we obtained the following results:

Table 3. Visitors' assessments of culinary experiences

Content	Level (n=560)						General average
	Not satisfied		Satisfied		Very satisfied		
Delicious foods, drinks	0	0%	345	61.6%	215	38.4%	2.38
Hygiene and food safety	112	20%	232	17.8%	216	38.6%	2.18
Price of food and drinks	230	41.1%	152	27.1%	178	31.8%	1.90
Customer service attitude	227	40.5%	155	27.7%	178	31.8%	1.91
Dining and drinking space	119	21.2%	177	31.6%	264	47.1%	2.25

Source: Survey results

The results of Tables 2 and 3 are similar in that tourists highly appreciate the food and drinks in Ha Giang. This is the response to the first research question, confirming that Ha Giang is a locality with favorable conditions for developing culinary tourism.

In addition, issues of food hygiene and safety, food prices, and tourist service attitudes are not highly appreciated. Checking this result by comparing the first survey in May and the second survey in October, we found: May is not the peak tourist month; the number of tourists traveling to Ha Giang is less. October is the month with a cool climate and buckwheat flowers blooming. However, the number of satisfied and very satisfied tourists mainly falls in May. When doing some interviews with tourists, we found that, at times with a large number of tourists, such as in October, the phenomenon of increasing food prices at restaurants occurs: the restaurant does not accommodate the requests of tourists, there is a lack of waiters, and the service is not attentive, making tourists feel uncomfortable. This is also the problem that Ha Giang needs to have solutions to overcome and adjust to improve the quality of tourist service, especially during peak tourist seasons.

To answer the question of whether cuisine is the reason to attract tourists to Ha Giang, we have come up with five criteria with scales: not important (1 point), important (2 points), and very important (3 points). The results show that the local landscape criterion has the most advantage with an average score of 2.93 points; cultural identity ranked 2nd

with an average score of 2.88 points; tourism prices ranked 3rd with an average score of 2.35 points; and cuisine only ranked 4th with 2.20 points. This is also consistent with the interview results, when 90% of respondents said that they knew about Ha Giang through mass media with advertisements about Ha Giang such as the unique landscape (rock plateau), ethnic cultural diversity, etc. As for issues related to cuisine, they can only be discovered when they come to Ha Giang. This result shows that Ha Giang province needs to have a widespread culinary culture promotion strategy to further attract tourists in the process of choosing a destination because the reality is that tourists' culinary consumption is not small during travel time, as shown in the survey results in Table 4.

4.3. Tourist consumption of food while traveling

With the survey question of tourists assessing their level of consumption for food compared to other expenditures in the total expenditure of the trip, we obtained the following results:

Table 4. Evaluation of tourists' spending on food

Content	Spending levels (n=560)			
	Significant occupies	Proportion (%)	Not significant occupies	Proportion (%)
Spending on culinary products	436	77.9	124	22.1

Source: Survey result

The above survey results show that cuisine is a potential market and a major concern of tourists (accounting for 77.9%). When asked if they wanted to have tours to experience the cuisine of the ethnic groups here (participate in processing, observe processing, participate in culinary festivals, harvest food, etc.), 100% said that if given the opportunity, they were willing to participate. Especially for international tourists, they want Ha Giang to have many culinary products that they can buy as gifts for relatives. Hence, if there is a good strategy and investment, it is clear that Ha Giang will exploit good profits from cuisine.

5. DISCUSS RESERCH RESULTS, SOLUTIONS AND RECOMMENDATIONS

Ha Giang's geographical location with unique and dangerous roads and wild beauty makes this place an ideal tourist destination for tourists looking for uniqueness. In there, the cuisine of ethnic minorities blending with the unique culture of the ethnic groups here will be the desire for those who have not yet set foot in the top land of the Fatherland. Survey results of tourists about food, culinary experiences, and spending habits on food when traveling show that Ha Giang has the potential to develop culinary tourism because of its attractive culinary culture. Visitors to Ha Giang want to have authentic culinary experiences to explore the culture and heritage of the destination, and if given

the opportunity, they all want to return to travel in Ha Giang to explore more about this fascinating land. Therefore, Ha Giang province needs to design many types of tourism, of which culinary tourism is a type that needs to be focused on exploiting and developing on the basis of the available potential foundation.

From the current status of survey results with 560 tourists, we believe that to develop culinary tourism, Ha Giang province needs to focus on the following issues:

- Smart tourism development: With the development of the 4.0 revolution, the trend of tourists using smart devices to refer to destinations, search for travel information, and choose travel services is becoming more and more popular. Thus, Ha Giang needs to take advantage of technology to design culinary products in a way that increases experiential value as well as promotes culinary products to tourists. Providing tourists with restaurants, typical dishes, impressive culinary experience locations, etc. This will create convenience when guests want to learn about Ha Giang and easily plan their trip.

- Promote the promotion and introduction of Ha Giang's culinary culture to domestic and foreign people and tourists. It is necessary to focus on promotion through television programs and film production to connect audiences with the culture of ethnic groups in Ha Giang through the lens of culinary tourism. Sharing attractive photos and anecdotes about Ha Giang's delicious dishes on social networks, blogs, and culinary websites to further attract tourists during the destination selection process.

- Training on production, processing, preservation, and circulation technology for development in the community to develop Ha Giang's culinary culture, attract tourists, and increase tourist spending. Restaurants need to train waiters with a friendly, professional attitude and a certain understanding of the local culinary culture to be able to introduce cuisine to tourists when needed. Restaurants need to focus on local cuisine but also change the menu to suit the culinary needs of tourists. In addition, Ha Giang province needs to invest in infrastructure to be able to design tours for tourists who want to participate in culinary experiences, ensuring a safe environment for tourists during their culinary trip.

- Restaurants and culinary businesses need to be transparent and stable in prices, stop the phenomenon of price increases and price pressures when there are a large number of tourists, creating sympathy and a desire to return to tourism, and must ensure hygiene and safety in public places as well as food hygiene and safety.

6. CONCLUSION

Food is an integral part of any culture; for many people, it is central to their travel experience. As travelers become increasingly interested in immersing themselves in local culture, culinary tourism has become a popular trend worldwide. Cuisine has become an important factor in deciding a travel destination, from street food to fine dining.

Ha Giang, with its unique geography and cultural richness of ethnic minorities, is an attractive destination for many audiences. To attract tourists with valuable experiences, Ha Giang province needs to focus on developing culinary tourism with activities for tourists such as culinary experience, learning to cook, exploring raw material processing areas, food festivals, etc.

However, to develop tourism in general and culinary tourism in particular sustainably in the context of globalization, Ha Giang province needs solutions on infrastructure investment to meet the large number of visitors and has a strategy to take advantage of the digital environment to promote tourism products, including culinary tourism.

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GREEN PRODUCT INNOVATION AND GREEN COMPETITIVE IN HOTEL: THE MEDIATING ROLE OF GREEN BRAND IMAGE AND ORGANIZATION LEARNING

Vũ Quỳnh Trang[1], Đoàn Huy Hoàng[2]

Abstract: *The increasing awareness of sustainability has driven a rising demand for eco-friendly products and services across industries, prompting significant shifts towards green product innovation. This study delves into the correlation between green product innovation and green competitive advantage within the hospitality sector, focusing on hotels and restaurants. Based on the Resource-based View (RBV) theory, our research examines the mediating roles of green brand image and organizational learning in this relationship. Utilizing a quantitative approach, we gathered data from 98 hotel and restaurant employees via surveys and utilized PLS-SEM to analyze the data and validate our hypotheses. Our findings underscore the imperative for the hospitality industry to prioritize green product innovation as a key component of sustainable growth, while concurrently investing in cultivating green brand images and reinforcing organizational learning capabilities. By understanding the underlying mechanisms governing these relationships, future research endeavors can explore actionable insights for managerial strategies and contribute to advancing sustainable tourism and hospitality management practices.*

Keywords: *Green product innovation, green competitive advantage, green brand image, organization learning.*

Tóm tắt: *Việc tăng cường nhận thức về bảo vệ môi trường đã thúc đẩy nhu cầu ngày càng tăng về các sản phẩm và dịch vụ thân thiện với môi trường, gây ra những biến động đáng kể đối với sự đổi mới sản phẩm xanh trong nhiều ngành công nghiệp. Nghiên cứu này đi sâu mối liên hệ giữa sự đổi mới sản phẩm xanh và lợi thế cạnh tranh xanh trong lĩnh vực du lịch, đặc biệt là khách sạn và nhà hàng. Dựa trên lý thuyết Quan điểm dựa trên nguồn lực (RBV), nghiên cứu này xem xét vai trò trung gian của hình ảnh thương hiệu xanh và học tập tổ chức trong mối quan hệ này. Dữ liệu được thu thập từ 98 mẫu nhân viên khách sạn và nhà hàng thông qua cuộc khảo sát, sau đó phân tích bằng phương pháp PLS-SEM để kiểm tra giả thuyết. Các kết quả cho thấy ngành du lịch cần tập trung vào sự đổi mới sản phẩm xanh như một phần của chiến lược để đạt được sự phát triển bền vững, cũng như tăng cường hình ảnh thương hiệu xanh và khả năng học tập tổ chức. Bằng việc hiểu rõ cơ chế này, các nghiên cứu trong tương lai có thể cung cấp thông tin quan trọng cho các chiến lược quản lý và đóng góp vào việc nâng cao các thực hành quản lý du lịch và khách sạn bền vững.*

Từ khoá: *Đổi mới sản phẩm xanh, lợi thế cạnh tranh xanh, hình ảnh thương hiệu xanh, học tập tổ chức*

1. INTRODUCTION

The success of an organization is heavily reliant on the strategic choices it makes to acquire and sustain a competitive advantage. In today's dynamic business landscape,

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innovation emerges as a pivotal source of competitive edge, serving as a guiding force for firms seeking to distinguish themselves from competitors. Consequently, a firm's capacity to innovate becomes a critical determinant of its overall success or failure. In scenarios where a firm contends with demanding customers and intense competition, a focus on innovation in creating novel products and services becomes imperative for market success and superior performance compared to competitors (Kuncoro, W., 2018). Thus, in the contemporary business environment, the importance of ongoing innovation cannot be overstated, serving as the foundational pillar for achieving sustainable competitive advantage (Ndubisi, N.O., 2019).

Green innovation is defined as the introduction of advancements in both products and production processes with the aim of achieving environmental goals and reducing the ecological impact over the entire life cycle of a product (Lin, Chen, & Huang, 2014). This innovation provides hotels with the opportunity not only to differentiate themselves but also to gain a competitive edge in terms of cost efficiency (Lin & Chen, 2016). Moreover, the rapid expansion of the hotel industry has heightened competitive pressures, necessitating hotels to maintain their competitive advantage through continuous product innovation (Liu & Jiang, 2020). Previous research has illustrated that achieving a high degree of product innovation can lead to cost savings and the creation of economic value (Li et al., 2017). Additionally, numerous findings suggest that product innovation significantly influences overall brand equity, encompassing elements such as brand image (Jalal et al., 2015). As noted by Leonidou and Skarmeas (2015), the global market value of environmentally friendly products and services experienced a 400% increase from 2011 to 2015. This rapid transformation has elevated the green brand image as a distinctive strategy in various trade markets (Delgado-Ballester & Munuera-Aleman, 2005), including the hospitality sector (J. Lin et al., 2017).

Researchers have also explored product innovation as a process of organizational learning (Daryl Mc Kee, 1992). Organizational learning facilitates a comprehensive understanding, acknowledgment, and successful implementation of business strategies within an organization (Teece et al., 1997). Therefore, as a method for consolidating resources and generating new knowledge, organizational learning plays a crucial role in executing green business innovation strategies and attaining sustainable competitive advantage. Despite the positive role that environmental product innovation has demonstrated in gaining a competitive advantage for firms (Qiu et al., 2020), the extent to which it can be reinforced in establishing a green image and organizational learning to improve core competitiveness remains unexplored. Consequently, there is an increasing urgency to explore how brand image and organizational learning can boost product innovation to significantly enhance the level of competitive advantage. Therefore, this study aims to evaluate the relationship between green product innovation, environmental product innovation, and green competitive advantage, providing additional significance

for the hospitality management literature. Additionally, the study explores the effect of green brand image and organizational learning as mediating factors on green product innovation and its consequent impact on green competitive advantage

The remaining sections of the paper commence with a thorough examination of theoretical concepts and existing literature, constituting a pivotal phase in formulating the research model for this study. Subsequently, the research methodology and sample are presented, followed by the presentation and discussion of results. The subsequent sections delve into the theoretical contributions and managerial implications drawn from the study findings. Lastly, the paper addresses its limitations and outlines potential avenues for future research.

2. LITERATURE REVIEW

2.1. Resource-based view theory

The Resource-Based View (RBV) stands as a significant concept in the field of strategic management, offering insights into the mechanisms by which companies gain and maintain competitive advantages through the diversity of resources and capabilities, (Barney et al., 2011). Utilizing these assets as a foundation for enduring advantage is imperative, given their value, scarcity, non-substitutability, and inherent resistance to imitation in the competitive landscape (Barney 1991). Furthermore, these resources can be categorized into three distinct groups: tangible resources, intangible resources, and capabilities within the human resource domain (Fahy and Smithee 1999). In this context, resources encompass any asset that has the potential to generate value for a firm. When coupled with capabilities, which represent a firm's ability to effectively utilize these resources, they form the foundation for sustainable competitive advantage. This advantage is safeguarded by the challenge's competitors encounter when attempting to replicate or replace these distinctive resources and capabilities (Peteraf, 1993).

The RBV strongly supports that resources a firm requires to achieve sustainable competitive advantage depend on the firm's relationship with the natural environment (Hart, 1995) and social well-being (Tate & Bals, 2018). In accordance with the tenets of the Resource-Based View (RBV), innovative products assume the classification of being esteemed and non-substitutable assets within the purview of hotel enterprises (Wang, Wang, et al., 2021). Consequently, hotels are inclined to persist in the pursuit of innovating environmental products as a strategic imperative to uphold and fortify their green competitive advantage.

2.2. Green product innovation

Green product innovation is a critical aspect of sustainable development that many companies have embraced to demonstrate their commitment to environmental responsibility (Chiou et al., 2011). It involves integrating environmental considerations

into the product development cycle, including energy conservation, pollution prevention, waste recycling, green design, and corporate environmental management (Chen et al., 2006). This approach, driven by sustainable principles, aims to enhance product value and establish a competitive edge for businesses (Schiederig et al., 2012).

Research conducted by Dang and Wang (2022) aligns with the resource-based view theory, suggesting that green innovation products, such as desulfurization equipment, are valuable, rare, inimitable, and non-substitutable resources that contribute to reducing pollution and ensuring sustainable development. Chen (2008) also found that green product innovation positively affects enterprises' competitive advantage. In summary, proactive green product innovation enhances production efficiency, cultivates a positive green image, and contributes to the competitive advantage of businesses across various industries.

2.3. Green competitve advantage (GCA)

Green competitive advantage refers to the unique position a firm holds in environmental management that is difficult for competitors to replicate (Astuti & Datrini, 2021). The Resource-Based View (RBV) emphasizes the importance of a diverse set of resources for firms to maintain a lasting competitive advantage (Barney, 1991).

In the hospitality industry, maintaining a competitive advantage relies on achieving high levels of customer satisfaction, retention, and promoting a socially responsible corporate image (Hossain, 2021). Incorporating environmental considerations into corporate strategy is crucial for differentiation and sustaining competitive advantage (Reynolds, 2013).

Hospitality firms that invest in environmental innovation can gain competitive advantage through improved brand image, customer retention, increased market share, and enhanced performance (Reyes-Santiago, 2019).

Based on the literature reviewed, the following hypotheses are proposed:

H1: Green product innovation is positively associated with green competitive advantage.

Evidence suggests that proactive green product innovation enhances production efficiency, cultivates a positive green image, and contributes to the competitive advantage of businesses.

H2: Green product innovation reinforces green brand image.

Green product innovation in the hospitality industry can lead to improved brand image, customer retention, increased market share, and enhanced performance.

By testing these hypotheses, the authors aim to further understand the relationship between green product innovation and green competitive advantage in the hospitality industry.

2.4. Green brand image

Green brand image refers to the ecological attributes associated with a product or brand (Bekk et al., 2016). Kotler defines brand image as the collection of ideas, beliefs, and impressions held by consumers regarding a specific product or brand. When a product incorporates environmental or green elements, the perceptions and impressions formed about it constitute its green brand image. In the hospitality industry, tourists are more likely to choose eco-friendly destinations, which extends to eco-friendly hotels (Lee, T.H, 2009; Kubickova, M., 2014). Given the homogeneity of products and services offered by hotels, enhancing the green image of a hotel is a strategic approach to gain a competitive edge (Xiang, Z., 2015; Wang, J., 2018). Based on the above, these hypotheses are proposed:

H3: Green brand image reinforces green competitive advantage.

H3a: Green brand image mediates the relationship between green product innovation and green competitive advantage.

2.5. Organization learning

Organizational learning capability influences innovation and contributes to the concept of the "learning organization" (Senge, P.M., 2002). Learning orientation involves creating and applying knowledge to enhance competitive advantages by understanding customer needs, market dynamics, and competitor strategies (Hurley and Hult, 1998; Moorman and Miner, 1998; Calantone et al., 2002). Organizational learning is related to new product development, crucial for innovation capability and performance (Hurley and Hult, 1998; Calantone et al., 2002).

In the context of green innovation, organizational learning is pivotal in ensuring effective delivery of ecological products and services (Chen, Y., 2015). It empowers enterprises to enhance core competencies, transcend existing development trajectories, and address challenges posed by green product innovation (VidalSalazar et al., 2012). Strategic interactions and knowledge sharing with external stakeholders enable enterprises to cultivate strong partnerships, enhancing green operational performance and competitive advantage. Organizational learning fosters the integration of green thinking among employees, facilitating knowledge fusion and insights into emerging green trends (Nonaka, 1994). Based on the above, these hypotheses are proposed:

H4: Green product innovation can reinforce with organizational learning

H5: Organization learning can reinforce with green competitive advantage

H5a: Organization learning mediates the relation ship among green product innovation and green competitive advantage

2.6. Research model

The research model (Figure 1) presented shows the suggested relationships between constructs. Notably, the independent variable is Green product innovation, the dependent variable is green competitive advantage, the mediating variable are green brand image and organizational learning
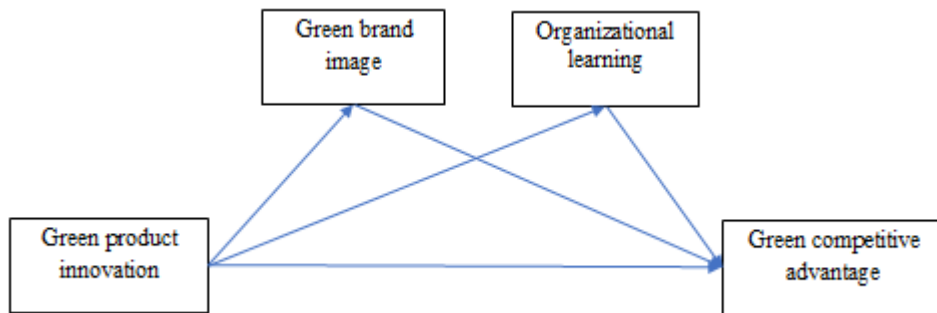

Figure 1. Research model

3. METHODOLOGY

3.1. Data collection and sample

This study was conducted with working employees in the Vietnamese hospitality industry. We developed an online survey questionnaire to collect data for this study. The survey instrument was distributed in Da Nang, Ha Long, and Hanoi, Vietnam (Fig.2) which have a high concentration of hotels and restaurants. These areas were chosen due to their significant presence in the hospitality industry, providing a diverse range of perspectives from employees working in various establishments. Additionally, these locations are popular tourist destinations, offering insights into the unique challenges faced by hospitality workers in high-traffic areas. The participants were selected through a random sampling method to ensure a diverse representation of employees from different establishments. Our data were collected by asking participants to answer questionnaires linked to the online survey. Before collecting the main survey data, full ethical approval was received, and a pilot study was conducted to improve the questionnaire design and test the robustness, validity, and reliability of measurement items. 125 questionnaires were returned, of which 27 did not contain complete responses and were excluded from the analysis. The remaining 98 questionnaires were analyzed using SmartPLS version 3.3.3 software (Ringle, Wende, and Will 2005) for model assessment.

The demographic data are presented in Table 1. Of these, 79 subjects were male (80.6%), and 19 subjects were female (19.4%). In terms of age, 68 subjects were 25-34 years old (69.4%), and 24 were 35-44 years old (24.5%). For the type of hospitality, 43

subjects worked in a four-star hotel/restaurant (43.9%), 31 worked in a five-star hotel or restaurant (31.6%), and 22 worked in a three-star hotel/restaurant (22.4%). Regarding the department, 25 subjects worked in the front office (25.5%), 21 worked in food and beverage (21.4%), 20 worked in food production (20.4%), and 16 worked in housekeeping (16.4%).
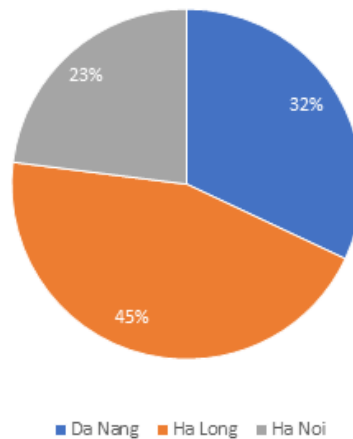

Figure 2. Hotel/restaurant area

Table 1. Demographic profile (N = 98).

Variable	N	%	Variable	N	%
Gender			**Department**		
Male	79	80,6	Front Office	25	25,5
Female	19	19,4	Housekeeping	16	16,3
Age			Food and Beverage	21	21,4
≤25	2	2,0	Food Production	20	20,4
25-34	68	69,4	Marketing & Sales	6	6,1
35-44	24	24,5	Human Resources	6	6,1
≥45	4	4,1	Finance	3	3,1
Type of hospitality company			Maintenance	1	1,0
Five-star hotel/ restaurant	31	31,6			
Four-star hotel/ restaurant	43	43,9			
Three-star hotel/ restaurant	22	22,4			
Resort hotel	2	2,0			

3.2. Measurement scales

The survey contains both demographic information and variable measurement components. The variable measure uses a 5-point Likert scale to measure four constructs, including green product innovation, green brand image, organizational learning, and green competitive advantage. Questionnaire items were adapted from previous studies, with 1 representing strong disagreement and 5 representing strong agreement. Adapted

from Chen et al. (2006) and Eiadat et al. (2008), three items measure the Green product innovation scale. Adapted from Chen (2010), the Green brand image scale is measured by five items. Adapted from Atuahene-Gima and Murray (2007); He and Wong (2004), four items measure the Organizational learning scale. Adapted from Chen and Chang (2013) and Muisyo et al. (2022), six items measure the Green Competitive Advantage scale. Detailed items are listed in Table 2.

4. RESULT

4.1. Measurement model

We tested our measurement model using exploratory factor analysis (EFA) via SPSS and confirmatory factor analysis (CFA) via SmartPLS-3. The authenticity of measurement model was confirmed through reliability and validity. The internal reliability of the model was examined through Cronbach's Alpha and composite reliability (CR). The calculated value of all factor loadings and composite reliability were above 0.70 (Table 2) which established composite reliability and negate issues with factor loadings (Churchill, 1979; Fornell & Larcker, 1981) (Table 3).

Table 2. Factor loading

	GBI	GCA	GPI	OL
GB1	0.873			
GB2	0.846			
GB3	0.862			
GB4	0.844			
GB5	0.868			
GCA1		0.824		
GCA2		0.837		
GCA3		0.854		
GCA4		0.851		
GCA5		0.828		
GCA6		0.848		
GPI1			0.892	
GPI2			0.855	
GPI3			0.909	
OL1				0.845
OL2				0.885
OL3				0.894
OL4				0.876

Table 3. Descriptive Statistics and Reliability & Validity

Constructs and Items		Alpha	CR	AVE
Green product innovation		0.862	0.916	0.784
GPI1	Our hotel/restaurant chooses green and environmentally friendly materials in the product-design stage.			
GPI2	Our hotel/restaurant improves production techniques to reduce resource consumption and pollutant emissions.			
GPI3	Our hotel/restaurant possesses a complete and efficient waste recycling system.			
Green competitive advantage		0.917	0.935	0.706
GCA1	Our hotel/restaurant always has the competitive advantage of low environmental innovation costs compared to its major competitors.			
GCA2	The quality of the environmental products offered by our hotel/restaurant is always better than that of its major competitors.			
GCA3	Our hotel/restaurant is always more capable of green R&D and innovation than its major competitors.			
GCA4	Our hotel/restaurant is always more capable of environmental management than its major competitors.			
GCA5	Major competitors always fail to imitate the environmental products of our hotel/restaurant			
GCA6	Major competitors always fail to replace the unique position of our hotel/restaurant on environmental management and innovation.			
Green Brand Image		0.911	0.933	0.737
GB1	Our hotel/restaurant brand is regarded as the best benchmark of environmental commitments			
GB2	Our hotel/restaurant brand is professional about environmental reputation			
GB3	Our hotel/restaurant brand is successful about environmental performance			
GB4	Our hotel/restaurant brand is well established about environmental concern			
GB5	Our hotel/restaurant brand is trustworthy about environmental promises			
Organizational learning		0.898	0.929	0.766
OL1	Our hotel/restaurant makes full use of existing technologies and resources.			
OL2	Existing products or services reflect the Our hotel/restaurant's advantages and culture.			
OL3	Our hotel/restaurant proactively proposes new product concepts or technical standards.			
OL4	Our hotel/restaurant actively carries out exchange and cooperation with other organizations.			

Average variance extracted (AVE) was followed to confirm convergent validity. The calculated value of AVE in present study is well above the threshold value of 0.50 (Fornell & Larcker, 1981). Discriminant validity was operationalized using the Fornell and Larcker criterion and HTMT (Henseler et al., 2015). The square root of the AVE values for each construct were found greater than all interconsruct correlations. Moreover, all HTMT values were below 0.90, thus confirming discriminant validity (Henseler et al., 2015) (Table 4).

Table 4. Discriminant Validity

Fornell and Larcker criterion				
	GB	GCA	GPI	OL
GB	0.859			
GCA	0.801	0.840		
GPI	0.833	0.830	0.886	
OL	0.872	0.867	0.843	0.875
Heterotrait-Monotrait ratio of correlation				
	GB	GCA	GPI	OL
GB	1			
GCA	0.886	1		
GPI	0.840	0.834	1	
OL	0.865	0.887	0.857	1

Note: GPI: Green Product innovation, GB: Green Brand Image, OL: Organizational Learning, GCA: Green Competitive Advantage.

4.2. Structural model

Figure 3 shows the results of the relationship among the latent factors.
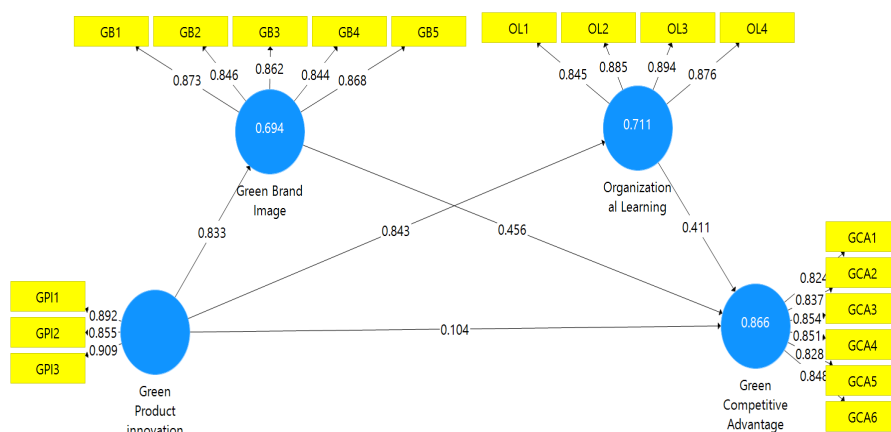
Figure 3. Tested Relationships

To evaluate the proposed hypotheses and predictive power of the proposed research model, SmartPLS-3 version 3.3.3 was used. The predictive accuracy was reported through the coefficient of determination and R-squared values. The results revealed R2 values of .691, .862, and .708 for GB, GCA, and OL respectively. The R2 values support the model's in-sample predictive power (Sarstedt et al. 2014) since it is above the required level of .10 (Falk and Miller 1992). Furthermore, effect sizes are calculated to assess the extent a predicting (exogenous) variable contributes to the R2 value of an endogenous variable. (Fig. 3). The significance of direct paths and estimate standard errors were determined through the Bootstrap resampling method with 5000 resamples (Ringle, Wende, and Will 2005). For each hypothesized relationship except Green production innovation → Green competitive advantage, path coefficient values were found significant. Except for one hypothesis, all proposed relationships were supported (Table 5).

Table 5. Structural Relationship.

Hypotheses	Original Sample	Sample Mean	Standard Deviation	T Statistics	P -Values	Remarks
H1: GPI→ GCA	0.104	0.106	0.076	1.370	0.171	Not Supported
H2: GPI→ GB	0.833	0.831	0.041	20.451	0.000	Supported
H3: GB→ GCA	0.456	0.452	0.079	5.776	0.000	Supported
H4: GPI → OL	0.843	0.841	0.043	19.814	0.000	Supported
H5: OL→GCA	0.411	0.412	0.079	5.199	0.000	Supported

Note: GPI: Green Product innovation, GB: Green Brand Image, OL: Organizational Learning, GCA: Green Competitive Advantage.

4.3. Mediating analysis

Mediation results are shown in Table 6. The results indicate that both Green Brand Image and Organizational Learning serve as significant partial mediators between Green Product Innovation and Green Competitive Advantage. Specifically, there is a positive direct effect between Green Product Innovation and Green Brand Image (β=0.380, t = 5.756, p=0.000), as well as between Green Brand Image and Green Competitive Advantage reflecting significant relationships. Similarly, the direct paths from Green Product Innovation to Organizational Learning and from Organizational Learning to Green Competitive Advantage are also positive and significant. Most importantly, the indirect effects traversing through both Green Brand Image and Organizational Learning (β=0.346, t = 5.293, p = 0.000) to link Green Product Innovation to Green Competitive Advantage are highly significant at p<0.001, indicating that Green Brand Image and Organizational Learning partially mediate this relationship. The findings thus provide empirical support for both hypothesized mediation hypotheses.

Table 6. Mediation analysis

Hypothesis Relationships	β	SE	T value	P Value	Decision
H3a: GPI → GB → GCA	0.380	0.066	5.756	0.000	Accepted
H5a: GPI → OL → GCA	0.346	0.065	5.293	0.000	Accepted

5. DISCUSSION

This study aimed to investigate the impact of green product innovation on green competitive advantage via green brand image and organizational learning. The results provide valuable insights into the relationship between these constructs and their respective roles in promoting ecological practices among firms.

Firstly, our findings show mixed results concerning the direct influence of green product innovation on green competitive advantage (H1). Although previous studies have highlighted the importance of green products in enhancing competitiveness (Dangelico, 2016; Chen, 2006), this study's outcomes do not entirely support H1. However, we found that green product innovation does indirectly affect green competitive advantage via green brand image (H3a) and organizational learning (H5a). These findings align with earlier research emphasizing the relevance of brand reputation and internal learning capabilities in fostering green strategic advantages (Leonidou, 2015; Albort-Morant, 2016).

Secondly, the analysis reveals a strong correlation between green product innovation and green brand image, emphasizing the importance of brand identity in promoting green consumption patterns. Firms should focus on creating favorable brand associations, ensuring product quality, reliability, and affordability, as consumers demand eco-friendly goods and services. Building trustworthy green brands can boost profit margins. Green brand image positively impacts green competitive advantage, as customers prefer eco-conscious options. Leading brands have superior market positions and pricing power due to enhanced consumer loyalty and perceived value. To capitalize on a green brand image, companies must maintain credibility and authenticity in their sustainability claims. Green product innovation is linked to organizational learning, which improves technological expertise, supply chain management, risk assessment capabilities, and employee engagement. Organizational learning is crucial for driving green competitive advantage, aligning with research highlighting the importance of human resource skills and behaviors in achieving green strategic success.

6. IMPLICATIONS

6.1. Theoretical implications

Firstly, the study contributes to RBV literature by highlighting how green product innovation can lead to green competitive advantage through the mechanisms of green brand image and organizational learning. It adds to existing research by emphasizing the importance of sustainability initiatives in resource creation, which ultimately drives competitiveness.

Secondly, this study provides insights into strategic management decision making regarding green product innovation as it relates to achieving sustainable competitive advantages. By demonstrating that green product innovation alone may not be sufficient to generate such advantages, this research offers guidance about other important factors like green brand image and organizational learning that should also be considered in strategy development processes.

Thirdly, the findings offer practical recommendations for businesses seeking to adopt more environmentally friendly practices while remaining profitable. Understanding the complex relationships among green product innovations, green brand images, organizational learning, and green competitive advantages will help organizations align their strategies with environmental concerns and achieve long-term success.

6.2. Managerial implications

Firstly, focus on building green brand images. Given that green brand images mediate the relationship between green product innovation and green competitive advantage, companies must pay close attention to developing strong green brands. This could involve communicating transparently about the environmental benefits of products or services, investing in certifications, eco-labels, and other trustworthy signals, or leveraging partnerships and collaborative efforts.

Secondly, foster Organizational Learning. In line with our second finding, promoting continuous learning throughout an organization is essential. Companies need to cultivate an open culture where employees are encouraged to learn new things continuously to improve their skills and knowledge related to green technologies and applications. Investment in training programs, workshops, seminars, conferences, and cross-functional collaboration within firms, can foster organizational learning.

Thirdly, holistic approach towards Green Product Innovation. Our final insight suggests that green product innovation itself may not have a direct impact on green competitive advantages. Therefore, adopting a holistic approach to green product innovation that integrates both technological and non-technological aspects, such as marketing, communication, and supply chain management is imperative. To create successful green products, companies ought to consider all these dimensions simultaneously rather than focusing solely on technical features.

7. LIMITATIONS AND FUTURE RESEARCH

Although we have provided new evidence on the relationship between Green product innovation and green competitive advantage in hotels/restaurants, some limitations still need to be further explored in future research. The first limitation is that our study only focused on hotels and restaurants, so the findings may not be generalizable to other

industries. Additionally, our research was conducted in a specific geographical area, which may limit the applicability of our results to different regions or countries. Second, online surveys and self-reports have unavoidable common method variance (Yu et al., 2022). This common method variance may have influenced the accuracy of the data collected and could potentially introduce bias into our findings. Future research could consider using multiple methods of data collection, such as interviews or observations, to mitigate this limitation and enhance the validity of the results. Finally, we only explored the mediating effects of brand image and organizational learning on the relationship between green product innovation and green competitive advantage. Future research could investigate additional mediators, such as consumer perception or employee engagement, to gain a more comprehensive understanding of the underlying mechanisms. Additionally, it would be valuable to examine potential boundary conditions for the observed relationships, such as industry type or firm size, to determine if the findings hold across different contexts. Lastly, exploring longitudinal data and conducting longitudinal studies could provide insights into the long-term effects of green product innovation on organizational performance and sustainability outcomes.

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STUDYING THE POTENTIAL OF WELLNESS TOURISM DEVELOPMENT IN VIETNAM TOWARDS SUSTAINABLE DEVELOPMENT

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Abtract: *Recently, wellness tourism has been mentioned quite often and is becoming a trend chosen by many tourists. In particular, since the major upheavals of the COVID-19 pandemic, the demand for medical tourism has increased. With rich and diverse natural resources including many beaches, primeval forests, hot mineral spots, long stretches of hot mud, along with a huge number of temples, monasteries, and famous traditional medicine... Vietnam has a plethora of advantages to develop medical tourism. Developing healing tourism is the direction to help attract high-quality tourists, towards sustainable development, contributing to overcoming the seasonality of tourism. However, foreign publications only stop at the research level for a specific location, while publications in Vietnam only "mention" or provide basic public information. In this study, the authors analyze the potential, current status and factors affecting the development of healing tourism in Vietnam, thereby proposing practical solutions to develop healing tourism in Vietnam towards sustainable development.*

Keywords: *Wellness tourism; Vietnam tourism resources; sustainable development.*

Tóm tắt: *Thời gian gần đây, du lịch chăm sóc sức khỏe được nhắc đến khá thường xuyên và đang trở thành xu hướng được nhiều du khách lựa chọn. Đặc biệt, kể từ khi có những biến động lớn của đại dịch COVID-19, nhu cầu du lịch y tế ngày càng tăng cao. Với tài nguyên thiên nhiên phong phú, đa dạng gồm nhiều bãi biển, rừng nguyên sinh, điểm khoáng nóng, bãi bùn nóng trải dài, cùng với rất nhiều đền chùa, tu viện, bài thuốc cổ truyền nổi tiếng... Việt Nam có rất nhiều lợi thế để phát triển du lịch y tế. Phát triển du lịch chữa bệnh là hướng giúp thu hút khách du lịch chất lượng cao, hướng tới phát triển bền vững, góp phần khắc phục tính thời vụ của du lịch. Tuy nhiên, các ấn phẩm nước ngoài chỉ dừng lại ở mức độ nghiên cứu cho một địa điểm cụ thể, trong khi các ấn phẩm ở Việt Nam chỉ "đề cập" hoặc cung cấp những thông tin đại chúng cơ bản. Trong nghiên cứu này, nhóm tác giả phân tích tiềm năng, hiện trạng và các yếu tố ảnh hưởng đến phát triển du lịch chữa bệnh ở Việt Nam, từ đó đề xuất các giải pháp thiết thực để phát triển du lịch chữa bệnh ở Việt Nam theo hướng phát triển bền vững.*

Từ khóa: *Du lịch chăm sóc sức khỏe; tài nguyên du lịch Việt Nam; phát triển bền vững.*

1. INTRODUCTION

Wellness tourism in recent years has become more and more popular and widely mentioned, not only in countries with high quality of life but also in developing countries, including Vietnam. According to a survey by American Express, 76% of participants said they want to spend more money on travel to recuperate, 55% said they don't mind spending money to experience more related services. Tourism is not only about discovering nature,

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experiencing new things with exciting activities, people also want to restore and improve their health of body and mind, that is, both physically and mentally through activities to reduce stress, relax, as well as deeply touch their own soul and ego. In particular, mental health is focused more than ever, life is modern, the pressure is greater, the mind has to work with high "capacity", it is the healing journeys that will soothe and calm the mind, balance the living rhythm so that people can continue their next step more firmly.

Before the COVID-19 pandemic, wellness tourism was mentioned but not yet developed, but since the upheaval of the COVID-19 pandemic, tourism with healthcare has become a trend. According to the report of the Global Wellness Institute, by the end of 2022, revenue from medical tourism is estimated to reach 919 billion USD, accounting for 18% of the world tourism industry. [2]

In many developed countries around the world, healing tourism is becoming more and more popular. Visitors want to rest, entertain, be re-energized and beautify at the same tourist destination. The leading countries in this model include Japan with the form of onsen bathing that creates the resort tourism brand of Japan, salt rock baths in Korea, tours combining meditation and Yoga in India…

Some countries with the most developed medical tourism industry in the world include China, Japan, India, Thailand... In China, in recent years, increased attention has been paid to develop the health and wellness industry, marketing to both domestic and international tourists the diversity of health promotion activities and wellness services offered nationwide, especially services with roots in traditional Chinese medicine traditions. This is understandable because China has a long-standing culture, with a number of unique traditions suitable for developing healing tourism such as traditional Chinese medicine, qigong, meditation and martial arts, and Buddhist meditation.

India is one of the oldest countries in terms of healing tourism. India is an example for many other countries in practicing mind-body balancing therapy for holistic health care. Many Indian traditions are being brought to other countries and introduced in healing tourism programs around the world such as: Ayurveda, yoga, meditation... India is also taking advantage of global interest. demand for yoga, meditation and Ayurvedic health to attract tourists from all over the world to experience these disciplines. In 2016, India established the National Health & Healing Tourism Promotion board to provide policy and advice in these areas. [2]

With rich and diverse natural resources including many beaches, primeval forests, hot mineral spots, long stretches of hot mud, along with a huge number of temples, monasteries, and famous traditional medicine. .. Vietnam has many advantages to develop medical tourism. Developing healing tourism is the direction to help attract high-quality tourists, towards sustainable development, contributing to overcoming the seasonality of tourism.

Some typical examples include the healing tour at Medi Thien Son (Ba Vi, Hanoi), the journey to experience the mindful lifestyle organized by Trung Nguyen Legend in Dak Lak... However, that is only the opening stage of healing tourism, it is not yet diverse and professional, the new services only take care of body and physical health such as massage, foot bath, mineral bath... but are not yet professional. Deep in the mind and spirit... Therefore, to aim for sustainable development of this type of tourism in Vietnam, the tourism industry needs a special strategy to take advantage of natural advantages and attract tourists, domestically and internationally.

2. RATIONALE

Currently, there are a number of international and domestic authors mentioning the issue of "healing tourism" directly or indirectly in their publications, textbooks, and monographs. Vietnamese media, on the other hand, merely "mention" or offer basic public information, whereas publications from other countries only go as far as research for a certain area. In-depth research on "Studying the potential of wellness tourism development in Vietnam towards sustainable development", it can be affirmed that up to now there has been no official research carried out. However, these distant and recent publications have the effect of creating a theoretical premise for the topic to inherit, promote and be creative in its research.

According to the author group Marta et al (2021), new challenges and opportunities for tourism in Salou, challenges that the Salou Tourism Board faces in the process of developing a sustainable tourism model after the pandemic and strategies apply to deal with, as well as consider, the opportunities and competitive advantages that Salou has in the field of healthcare tourism. The results obtained will encourage the promotion of environmental sustainability and the addition of value to natural resources, while maintaining the quality of resources [6].

According to Melanie Smith, Laszlo Puczko (2008), until the 20th century, health tourism was very limited but also appeared, healing not only physical but also mental health, From there, we propose development plans and future prospects for medical tourism [7].

According to Éva and (2015), the countries with the largest suppliers of healthcare and tourism are in Europe (German-speaking countries and the Mediterranean Hai, North America and Southeast Asia. The healthcare market, due to favorable social changes and economic performance, is likely to become one of the fastest growing economic and tourism sectors. However, the reality is that different countries are not able to exploit the full potential of natural resources [8].

In fact, the issue of application to build healing tourism systems is increasingly concerned and has been deployed in a number of tourist destinations in the market, through different forms of organization such as "How Does COVID-19 Risk Perception Affect

Wellness Tourist Intention: Findings on Chinese Generation Z" by Chaojun Li; Xinjia Huang, understanding how the COVID-19 pandemic affects public travel intentions is key to creating effective strategies to restore and enhance confidence in the tourism industry. However, in order to organize a methodical, focused and systematic way, in accordance with the natural and economic potential of the country after COVID, it is necessary to have the participation and in-depth design of researchers.

On the part of local agencies, the "healing" tourism segment is mentioned more and more, there are a few places with the direction of "healing", but the form is still sporadic, spontaneous, carrying self-discovery, self-experience. According to the Saigon Economic Magazine, Tourism heals "blooming" in difficulties and fluctuations, Not having to check-in beautiful cafes, famous tourist attractions, after 2 years of the COVID-19 epidemic - severely damaged with current global upheavals, many people are more interested in health besides the need for relaxation and entertainment. Accordingly, service providers also open healing tours based on nature as the basis. Currently, the demand for customers is increasing because of the epidemic, making everyone appreciate the importance of health. However, the form of tourism is sporadic, personal, not professional and in-depth. Moreover, establishments that call their service form "healing tourism" only focus on the body, body, massage, foot bath .... but not focusing on healing the soul.

As for tourists, up to now, especially with the younger generation, the phrase "healing" is very familiar, but in a life with full of chaos and pressure, you do not know how to find the right balance, and you might still vaguely searching for it on the Internet. Besides, there are still some people who have not had the opportunity to access information and forms of medical tourism.

In addition to documents related to the topic of medical tourism research, the research object is locations in many different countries around the world, there have also been many documents circulated in proceedings and conferences such as "Proceedings of the conference on developing health care tourism in Vietnam 2021"[1]. However, direct research on Vietnam's current specific situation after COVID and towards sustainable development has not yet been officially implemented.

In addition, there have been a number of articles mentioning healing tourism for Vietnam but not really in-depth, not targeting specific audiences, and without careful consultation and calculation of data. Thereby creating a gap for the research team to develop healing tourism in Vietnam in a sustainable way, especially in the post-COVID-19 period. Inheriting the results of previous studies, consulting experts and personal experiences of the authors, this study raises jour key research questions:

1. What is the potential to develop healing tourism in Vietnam?

2. What is the current status of medical tourism development in Vietnam after the covid 19 pandemic?

3. What are factors affecting tourism development to develop healing tourism in Vietnam?

4. What is the solution to develop healing tourism in Vietnam after the COVID-19 pandemic towards sustainable development?

The authors have built a research model on factors affecting the development of healing tourism in Vietnam after the COVID-19 pandemic towards sustainable development, including 5 factors with 24 observed variables, shown specifically in Figure 1 below:
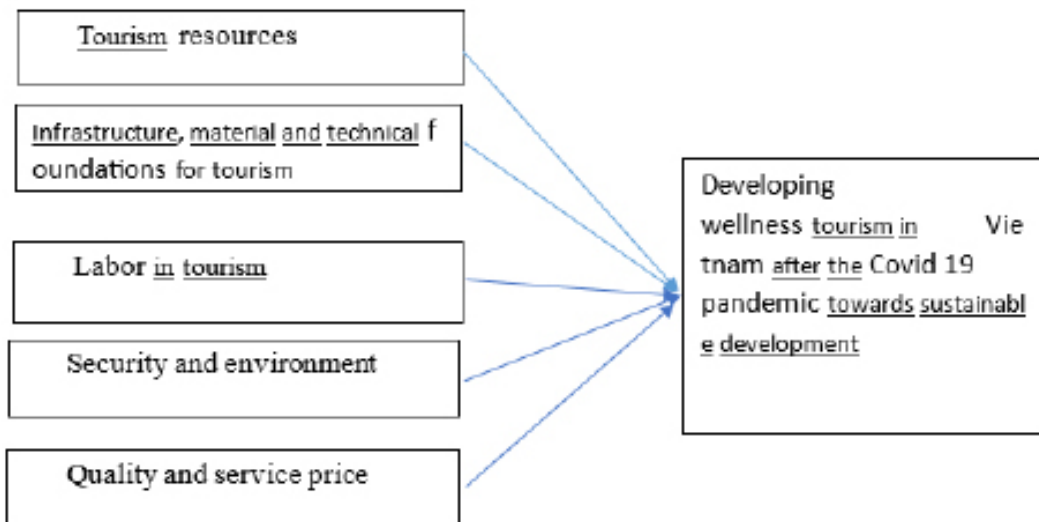
Figure 1. Research model

Source: Research model proposed by the authors (2023)

3. RESEARCH METHODS

3.1. Methods of collecting and synthesizing data

Research is carried out using the research method of collecting and synthesizing secondary information through planning research documents related to the research problem. Primary data was collected by survey through questionnaires measuring factors affecting the development of medical tourism in Vietnam after the COVID-19 pandemic towards sustainable development.

3.2. Sociological adjustment method

The authors conducted an investigation into the factors affecting the development of medical tourism in Vietnam after the COVID-19 pandemic towards sustainable

development. The minimum level of dimensionality when the number/measure ratio of the variable is 5:1, means that one measure is needed to minimize the number (Hair *et al.*, 2006). According to theory, the study uses 24 measurement variables, so the sample needs to be a minimum of 120. During the investigation process, to avoid errors, the study surveys a number of 180 samples. Adjust the random pattern under online expression with the help of Google pattern.

3.3. Methods of evaluating, synthesizing and analyzing data

The scale used in this article is a 5-level Likert scale. The obtained results are synthesized and analyzed. The average descriptive statistical method is used to process the data, and determine the level of influence based on the distance value. Meaning of each specific average value: Level 1 from 1.00 to 1.80 (Completely dissatisfied); Level 2 ranges from 1.81 to 2.60 (Dissatisfied); Level 3 ranges from 2.61 to 3.40 (Average); Level 4 from 3.41 to 4.20 (Satisfied); Level 5 from 4.21 to 5.00 (Very satisfied). Distance value = (Maximum - Minimum)/n = (5 - 1)/5 = 0.8

3.4. Professional solution

The authors of the article used in-depth interviews with a number of tourism research experts, tourism businesses, and tour guides about factors affecting the development of healing tourism in Vietnam. From there, we propose some useful solutions to develop healing tourism in Vietnam after the COVID-19 pandemic towards sustainable development.

4. RESEARCH RESUTLS AND DISCUSSION

4.1. Overview of healing tourism

Wellness tourism is a tourism model with the aim of enhancing health and spirit, in which wellness is a combination of healthy - physical health and spiritual - mental health, aiming to bring providing visitors with the most optimal and comprehensive health care services, balancing, maintaining and restoring emotions in the soul, forming a healthy lifestyle, bringing joy and positive thinking after the trip, experiences through physical, psychological and spiritual activities by promoting active participation between people, culture and nature.

According to the Global Institutes of Health (GWI), healing tourism is defined as "a type of tourism intended for travelers wishing to maintain and enhance personal health". Healing tourism is a branch of health tourism. However, healing tourism is not medical tourism.

The Institute of Global Health believes that medical tourism is a type of tourism associated with the treatment and resolution of health problems that patients are experiencing, possibly performing surgery during the trip. And healing tourism has the

element of proactively preventing health problems before they happen and focusing on improving the quality of life.

The history of healing tourism goes back to ancient times with the use of hot springs and natural mineral baths for therapeutic purposes in ancient times. The ancient civilizations of the Middle East and Asia also contributed to the development of healing tourism with treasures of knowledge about health, disciplines of health maintenance and protection such as yoga, meditation, massage, acupressure and benign herbal remedies that are beneficial to the user's health. Today, healing tourism develops rapidly and is widely distributed throughout the world. The rapid growth of healing tourism takes place in many countries. In 2017, healing tourism was estimated to be worth $639.4 billion and is slowly becoming a rapidly growing travel segment. From 2015 to 2017, healing tourism increased by 6.5% (twice the growth rate of the entire tourism industry).

Travelers worldwide made 830 million healthcare trips in 2017, 139 million higher than 2015. Besides, according to the project results of the Institute of Global Health, tourism healing will still grow at an average annual rate of about 7.5% through 2022, significantly faster than the 6.4% annual growth forecast for global tourism.[3]

A destination, a tourist area that is considered an appropriate place to develop healing tourism is often based on the exploitation and use of available natural resources capable of improving or enhancing the health of people. people, besides, it also needs to be associated with natural conditions suitable for relaxation and health care and rehabilitation for tourists. To be able to develop this type of healing tourism, a resort must have at least 2 of the following services*: 1. Hot spring bath and mud bath 2. Sauna 3. Spa 4. Cooking lessons and teaching a healthy diet 5. Providing a healthy diet 6. Teaching yoga, meditation 7. Health Care Guide 8. Tranquility-meditation retreat 9. Visiting spiritual destinations*. According to the Institute of Global Health, there are currently two main forms of healing tourism in the world:

- Thematic healing tourism: is a form of tourist taking care of physical and mental health as the main purpose and throughout the trip. These travelers are often very dedicated health-conscious and caring consumers who actively maintain a healthy lifestyle, seeking mental, physical, or social balance. consciously.

- Combined healing tourism is understood as the maintenance of health while traveling or participation in health care services while undertaking any type of tourism. This form of combined healing tourism is easy to find anywhere, such as in a hotel with sauna, spa, reflexology services or a resort with hourly yoga teaching services.[1]

In short, up to now, there is still no clear and unified definition of medical tourism. But basically, healing tourism can be understood as a type of tourism that is often integrated

into an ecological resort model that combines treatment and health care, with activities such as meditation, yoga, therapy, psychology, traditional medicine diagnosis, enjoying macrobiotic cuisine...

4.2 Potential for developing healing tourism in Vietnam

Vietnam is a country with many advantages to develop healing tourism with a diverse terrain system, including hills, plains and coastal areas, along with many hot mineral springs and hot mud locations stretching across the country. In terms of cultural tourism resources, Vietnam has a rich system of temples and pagodas, serving the great spiritual needs of tourists. In recent years, medical tourism in Vietnam has begun to receive attention to develop. In addition to the existing resorts and spas, tourism activities are associated with the combination of maintaining and promoting health on the basis of the application of herbal therapies, meditation, yoga, and physical fitness, weight loss, spa, mineral water bath, hot water, traditional medicine ... are healing tourism products that are being invested and exploited. Some big names in the resort tourism village have seen the potential and started to enter Vietnam's healing tourism market such as Vin Group, Sun Group, BIM Group...

With healing tourism, the stops are often pristine spaces, rich plant ecosystems, and the ability to connect with nature, bringing a sense of peace to the soul. In addition, depending on each model, visitors will experience specialized care treatments such as yoga, meditation to enhance relaxation, purification cycles, rejuvenate the senses, and meet with experts. Psychologists advise on relieving stress and seeking recovery of physical and mental health.

Many localities have taken advantage of their strengths to bring healing tourism products and services, such as:

Lao Cai with the advantage of open natural landscape, fresh climate, rich medicinal resources, many rare herbs and the health care experiences of ethnic minorities, this land is currently preferred choice of many travelers interested in healing tourism.

Thua Thien - Hue with hot mineral water resources, beaches, lagoon systems... is both suitable for hydrotherapy and can carry out physical training and sports activities for health, this is a local association gathering all the elements for medical tourism to develop.

The Mekong Delta region with many green spaces, especially lotus plants, is a place that can effectively connect people with the natural landscape. And it is a locality known for its nutritious cuisine... very suitable for implementing a healing resort model.

In addition, we can also mention other places such as Nha Trang, Da Lat, Phu Quoc, Da Nang, Quy Nhon... countless places that fully converge the potential towards healing

tourism and certainly this model will attract a large number of not only domestic tourists but also tourists from all over the world. [6]

4.3 Current status of medical tourism development in Vietnam

In a report published at the end of 2021, the Global Health Institute (GWI) said that the growth rate of the healthcare tourism industry has increased by an average of 21% per year from 2020 to 2025. Medical tourism will grow more rapidly than other sectors of the healthcare industry in general.

According to a survey by the Wellness Tourism Association (World Health Tourism Organization) in 2022, 76% of respondents want to spend more on health-improving travel, 55% of people say they are ready willing to pay extra for psychotherapy activities combined with nature tourism.

It can be said that the passing of the COVID-19 pandemic has made the whole world suffer a great deal both in terms of health and spirit. Distance makes people always fall into a state of suffocation, deadlock, lack of interaction with society and separation from nature. In the face of humanity's difficult context of spiritual pains that need to be removed, healing tourism has also received more attention since then.

In addition, environmental pollution, climate change, and increasing epidemics make many people easily suffer from psychological trauma. All of these things can be compared to warning signals that make each person need to pay more attention to their health, not only physical health but also mental health. [5]

In recent years, medical tourism in Vietnam has begun to receive attention and development. In addition to existing resorts and spas, other types of tourism are associated with the combination of maintaining and enhancing health based on the application of herbal treatments, meditation, yoga, and fitness. fertility, weight loss, spa, hot mineral water bath... are healing tourism products that are being invested and exploited. eHealthCare Health Ecosystem Joint Stock Company has invested and built MEDI Thien Son Healing Tourism Area (Ba Vi, Hanoi) - a unique model combining tourism and health care, which can be considered is the first healing tourism area in Vietnam. Many large corporations and large companies have begun to enter Vietnam's medical tourism market such as Vin Group, Sun Group, BIM Group, Fuji Onsen Travel Services Joint Stock Company...

Tam Dao (Vinh Phuc) and Da Lat (Lam Dong) are destinations with many favorable conditions to develop medical tourism. In terms of terrain, Tam Dao and Da Lat are both mountainous and highland areas, with cool year-round climate, fresh environment, poetic natural landscapes with rich and diverse flora and fauna systems. Both places have a rich system of religious and belief facilities. In Tam Dao there is Tay Thien Truc Lam Zen Monastery, Tay Thien Relics and Scenic Area, and in Da Lat there is Da Lat Truc Lam Zen Monastery, Linh Phuoc Pagoda, Domaine de Marie church... Besides, it is impossible not to mention to

festivals as well as unique traditional cultural features that are being preserved in the local community. This is the foundation for the construction of existing resorts and facilities with specialized healing tourism services. The products and services of healing tourism in Tam Dao district and Da Lat city must be mentioned: Retreat at Truc Lam Zen Monastery, Spa services, massage and sauna, foot bath..., Sales of products Healthy dried tobacco products, Yoga & Meditation resort tour at Tam Dao Belvedere Resort, Red Dao medicinal leaf bathing service at Dao's center Tam Dao, Model of a resort in the middle of a forest combined with bathing experience tours Forest and Retreat Yoga & Meditation at Hana Land Da Lat, Sauna service and hot spring bath at D'LATS Sauna & Spabath Coffee. [1]

Currently, tours and services related to healing tourism in Vietnam have only just begun to appear, mostly in the form of combined healing tourism, that is, some health care services such as spas, massage, herbal bath are chosen by customers to experience more during their travel trip.

The development of healing tourism in Vietnam is facing many challenges: Firstly, this type of tourism has not been given proper attention and investment due to the confusion between healing tourism and other forms, especially with the type of resort tourism or spiritual tourism. Secondly, the healing tourism products in Vietnam are not diversified and professional, only stopping at improving health through massage, sauna, foot bath... but no health care activities. Thirdly, the current development of healing tourism is still far away from the local population, tourists are simply relaxing without activities to learn and connect with local people. Fourth, management capacity and investment resources for medical tourism development are limited; Human resources for medical tourism are lacking in quantity and quality, leading to medical tourists not having a seamless experience.[4]

According to survey results obtained on a sample of 180 tourists (130 domestic tourists, 50 international tourists who have been experiencing a number of healing tourism products in Vietnam), factors influencing to the development of medical tourism in Vietnam after the COVID-19 pandemic towards sustainable development, shown in Table 1:

Table 1. Factors affecting the development of medical tourism in Vietnam after the covid 19 pandemic towards sustainable development

Evaluation factor	Average	Standard deviation	Satisfaction level
(1) Tourism resources	4.50	0.849	Very please
+ Natural landscape	4.23	0.825	Very please
+ Cultural and historical relics	4.52	0.958	Very please
+ Climatic conditions	4.54	0.846	Very please
+ Cuisine	4.81	0.739	Very please
+ Festival	4.62	0.935	Very please

+ Traditional folk medicine	4.74	0.783	Very please
+ Traditional art	4.05	0.859	Please
(2) Infrastructure and technical facilities	3.69	0.897	Please
+ Electricity, water, communication	3.84	0.925	Please
+ Transportation service	4.01	0.926	Please
+ Dining facilities	3.94	0.837	Please
+ Accommodation facility	3.14	0.935	Neutral
+ Shopping services	3.28	0.918	Neutral
+ Additional services (spa, sauna, sports, yoga, meditation..)	3.95	0.838	Please
(3) Human factors	3.73	0.889	Please
+ Tour guide	2.79	0.865	Neutral
+ Travel staff	4.02	0.913	Please
+ Other service staff	3.29	0.894	Neutral
+ Local people (participation, hospitality…)	4.80	0.885	Very please
(4) Security and environment	4.19	0.869	Please
+ Security and order	4.21	0.756	Very please
+ Safety (property, life, food)	4.09	0.898	Please
+ Landscape and environment	4.28	0.955	Very please
(5) Service price	3.23	0.888	Neutral
+ Entrance ticket price	4.31	0.864	Very please
+ Price of services	2.49	0.943	Unsatisfied
+ Shopping price for health care products	3.53	0.827	Neutral
+ Quality of healing services	2.58	0.918	Unsatisfied

Source: Results of investigation and handling by the authors (2023)

According to the analysis results of tourists' satisfaction with healing tourism in Vietnam, tourists are very satisfied with tourism resources (4.5 points). Meanwhile, the service price is not commensurate with what tourists receive (3.23 points). Specifically, the evaluation according to each criterion is as follows:

(1) Tourism resources: Very satisfied by tourists (4.5 points). All observed variables are very satisfied, which proves that our country's tourism resources have great attraction, have an important influence on the development of healing tourism, only traditional art is recognized. Satisfaction assessment is the reason why Vietnam has not fully exploited and put this type of tourism in healing tourism products.

(2) Infrastructure, technical facilities: Visitors rated satisfaction (3.69 points). Dining facilities, electricity, water, transportation services, and additional services are rated by tourists for their satisfaction. Accommodation and shopping facilities are rated average by

tourists, the reason these two variables do not meet the diverse needs of tourists, making them unique and diverse.

(3) Human factor: Satisfied by visitors (3.73 points). Tour guides, tour staff, and service staff are not highly appreciated by tourists due to the lack of a large number of qualified and well-trained tour guides with in-depth training in the field of healing tourism and natural resources. Human resources for medical tourism are also lacking in quantity and quality due to lack of connection with medical experts and mental therapists. The hospitality of local people is the factor that makes visitors most satisfied (4.80 points).

(4) Security and environment: visitors rated satisfaction (4.19 points). That proves that the issues of security, order, safety and landscape environment have been concerned by our country with specific solutions, there are improvements to create good conditions for tourism development. Vietnam is a safe travel destination of the world. This is an important factor to develop tourism in general and healing tourism in particular.

(5) Service price: service price factor is underestimated by tourists (3.23 points). In addition to the factor of the entrance ticket price, which is rated as very satisfied (4.31 points), tourists think that the price of services is not reasonable compared to what they receive, proving that the quality of service is not commensurate with the price. This greatly affects the return of tourists and the brand image of our destination. The healing tourism products in Vietnam are not diversified and professional, only stopping at improving health through massage, sauna, foot bath... there are no thematic health care activities.

4.4 Solutions to develop healing tourism in Vietnam in a sustainable way

Diversifying and improving the quality of medical tourism products

Attract investment in the construction of specialized healing tourism areas, resorts, spa centers, yoga studios, spiritual attractions... Promote the development of specific products that are considered is an advantage of healing tourism such as resort tours combined with healing, meditation - yoga tours in pristine natural places, fresh air suitable for tourists to practice yoga, meditate, and enjoy spa treatments to relieve stress.

Diversify medical tourism products to complement specific products such as health care guidance activities, use of healthy and organic foods, healthy diet and weight loss, and provide environmentally friendly and locally sourced products and services to enrich visitors' experience when participating in healing services.

To develop healing tourism into an important tourism model in potential localities; link healing tourism services to build thematic healing tours; Replicate hotel and resort models that combine accommodation with health care activities, improve sleep quality, healthy eating, and light, experiential and relaxing activities, body detoxification, anti-

aging skin care, stress management, work-life balance, vegetarian cooking classes, medicinal bath services, massage-sauna services, spa... [4]

Promotion of healing tourism

Strengthen the promotion and introduction of health care services and healing tour programs at travel fairs and exhibitions abroad; producing promotional films for a type of resort tourism combined with care and health improvement posted on social platforms to promote to international tourists...

Organizing and managing healing tourism activities

Strengthening the quality management of healing tourism products at health care service providers; coordinate in promulgating regulations in assessing the technical quality of health care services at hotels, resorts, spa service centers, hot spring service providers, gyms, etc. exercise/yoga/gym…

Developing human resources for healing tourism

The medical tourism workforce needs to have high skills and expertise in both healthcare and tourism. Therefore, it is necessary to study and evaluate resources to develop healing tourism in a comprehensive and methodical manner in order to have appropriate development investment directions; regularly open training courses to improve professional skills for staff working in the field of spa and tourism at health care service providers; Collaborating to train human resources for medical tourism at home and abroad...

Including local communities in healing tourism activities

Local people are an important human resource, the same as local tour guides, service staff for healing tourism activities, tourists are very excited to be lead by the local people themselves to serve them. Therefore, there needs to be a plan to train them to become professional tourism human resources.

5. CONCLUSION

The development of healing tourism helps attract high-income guests, increasing tourism revenue for localities. Moreover, developing healing tourism also helps localities to solve seasonal problems because this type of tourism can be exploited all year round. The study has built a model to evaluate the factors affecting the development of healing tourism in Vietnam towards sustainable development through 5 factors and 24 observed variables. Including: Tourism resources; Infrastructure, technical facilities; Human factors; Security and environment; Service prices. Research shows that tourists highly appreciate tourism resources, this is a factor that has a great influence on the development of healing tourism in our country, but the service price is not commensurate with the service quality. From the

above analysis, combined with in-depth interviews with experts, the authors have proposed 5 solutions to develop healing tourism in Vietnam after the COVID-19 pandemic towards sustainable development. Unfortunately, due to limited time and experience, the article has not built a perfect model for developing healing tourism at some tourist destinations in Vietnam. Hopefully, this lack of spirituality will open up a new research direction in the future.

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DEVELOPING TOURISM HUMAN RESOURCES
IN THE CONTEXT OF DIGITAL TRANSFORMATION IN VIETNAM

Nguyễn Thị Thùy Linh[1]

Abstract: *Tourism associated with transformation is now becoming a popular trend in the world in general and in Vietnam in particular. Digital transformation in tourism in Vietnam in recent years has seen quite strong changes and is constantly developing. To meet this change, tourism human resources have developed in both quality and quantity. However, tourism human resources also face many limitations such as uneven distribution of labor force, many tourism activities that have not received professional training, etc. From there, the article makes a number of recommendations. Improve the quality of human resources in the context of digital transformation in Vietnam.*

Keywords: *Tourism, digital transformation, human resources.*

Tóm tắt: *Du lịch gắn với chuyển đổi số hiện nay đang trở thành xu hướng phổ biến trên thế giới nói chung và ở Việt Nam nói riêng. Chuyển đổi số trong du lịch tại Việt Nam trong những năm gần đây có những thay đổi khá mạnh mẽ, không ngừng phát triển. Để đáp ứng được sự thay đổi này, nguồn nhân lực du lịch đã có sự phát triển cả về chất lượng và số lượng tuy nhiên, nguồn nhân lực du lịch cũng gặp phải nhiều hạn chế như sự phân bố lực lượng lao động không đồng đều, còn nhiều lao động du lịch chưa qua đào tạo chuyên nghiệp,... Từ đó, bài viết đưa ra một số kiến nghị nhằm nâng cao chất lượng nguồn nhân lực trong bối cảnh chuyển đổi số tại Việt Nam.*

Từ khóa: *Du lịch, chuyển đổi số, nguồn nhân lực.*

1. INTRODUCTION

Currently, digital transformation is a quite popular phrase in all areas of social life, most fields and industries are being digitally transformed, tourism is also one of the majors and fields. Strongly transition in the digital transformation trend. To benefit and succeed in the digital transformation process, tourism human resources play a decisive role. Human resources are considered one of the key factors that help increase the competitiveness of Vietnamese tourism and determine the success of businesses and localities in the tourism market. Because of its importance, the article will focus on analyzing the current situation of tourism human resources in Vietnam in the context of digital transformation. From there, the article will evaluate the priorities and limitations of current tourism human resources. In addition, the article also proposes some architectures to improve the quality of tourism human resources in the context of digital transformation.

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2. THEORETICAL FRAMEWORK

2.1. Theory of human resources and digital transformation

2.1.1. Concept of human resources

Human resources has many different concepts, typically the following two concepts. According to the United Nations, "Human resources are all the knowledge, skills, experience, capacity and creativity of people that are related to the development of each individual and the country". Thereby, human resources are a source of capital alongside other types of physical capital such as monetary capital, natural resources, and technology. According to the World Bank (IBRD), "Human resources refers to all human resources including capacity, physical strength, job skills,... of each individual." Thus, it can be understood that human resources provide labor capacity in the production process, providing resources for people to develop society.

2.1.2. Digital transformation

There are many different concepts about digital transformation. According to the Ministry of Information and Communications, digital transformation is the process of overall and comprehensive change of individuals and organizations in the way of living, working and production methods based on digital technologies. According to FPT, digital transformation in organizations and businesses is the process of changing from traditional models to digital businesses by applying new technologies such as big data (Big Data), Internet of Things (IoT), electricity Cloud computing... changes operating methods, leadership, work processes, and company culture. According to Microsoft, digital transformation is about rethinking how organizations bring together people, data and processes to create new value. Although there are many different concepts about digital transformation, in general, digital transformation is the process of changing traditional thinking and business models to digital models, applying information technology. into operation. Managers need to change business and operating models to optimize the benefits that technology brings to businesses.

2.1.3. The role of human resources in the context of digital transformation

Digital technology has been requiring organizations to participate in the digital transformation process to ensure competitiveness. Whether or not the digital transformation process is successful depends entirely on whether the participating entities perform their functions properly or not. In the process of digital transformation, technology is said to be the means and people are the deciding factor for success. Human resources is closely related to the process of digitizing the workforce, digitizing the workplace and digitizing human resources, and any disruption in the digitalization process directly affects operations. business movements. Digital transformation requires high-quality human resources to be able to master new technology.

2.2. Overview of research projects

For tourism, human resources play an extremely important role. There have been many studies pointing out the role of tourism human resources and tourism human resource development to promote the development of the tourism industry in particular and socio-economic development in general.

In the article " Human Resources in Tourism: Still Waiting for Change ", the author Tom Baum (2007) researches the main topics affecting the role and management of human resources in tourism (mainly related to employment). The article examines the state of employment in the tourism industry and reflects on the impact of key environmental developments on employment - human resource management practices in modern tourism; the impact of global and societal forces on perceptions of work and careers; the impact of IT on work and employment in the tourism industry; changing the way skills are interpreted in tourism; and the increasingly diverse nature of the tourism workforce in developed countries.

The article " The Role of Tourism for Human Resource Development in Darjeeling District of West Bengal, India " by Sherap Bhutia (2014) points out that the quality of tourism human resources is meaningful to the development of a country. Tourism is one of the most important economic activities and smokeless industries in the world today because it directly generates services, products, foreign exchange, jobs and investments. The purpose of this study is to explore the role of tourism in promoting human resource development in Darjeeling District, West Bengal. The main conclusion drawn from this study is that promoting tourism as a tool for human resource development in the region is particularly important. It is hoped that these findings will attract strong interest from government agencies, private sector stakeholders in tourism development, academia and the media.

In the article " Management of Human resources in tourism. Interdisciplinary Management Research " by Sandra Herman (2015), the author researches human resource management in tourism with the aim of improving product and service quality, achieving economic efficiency and higher competitiveness in the world. tourism market. While products and services in tourism depend heavily on the quality of human labor, the task of human resource management is to ensure high quality human labor and to encourage that labor through motivation, education as well as the ability to advance their careers to maximize efficiency and retain them in the business sector. The SWOT analysis in the article shows all the weaknesses and threats, as well as the strengths and opportunities to improve the characteristics and qualities of job positions in the Croatian tourism industry. Quality human resource management in tourism contributes to improving economic efficiency and competitiveness in the tourism market.

In Vietnam, there have been a number of studies on tourism human resource development such as the study on human resource development towards sustainable tourism in Vietnam by MSc. Bui Thi Nhu Hien (2023) or research on Tourism development in the context of digital transformation in Vietnam by MSc Nguyen Minh Chau.

In general, there is still no research on the development of Vietnam's tourism human resources in the context of digital transformation. Therefore, this study can satisfy and complement previous studies.

3. RESEARCH METHODOLOGY

To pursue predetermined goals, the author implemented a comprehensive investigation and analysis method of documents and data related to tourism and tourism human resources in the context of digital transformation in Vietnam. This method facilitates comprehensive evaluation and subsequent feedback to the initial research investigation.

The data used in this study mainly consists of secondary sources of information, with special emphasis on primary sources of information. Sources such as Vietnam E-commerce Report, General Statistics Office, Vietnam National Administration of Tourism, World Economic Forum, Cisco, PwC and official research publications. At the same time, the article uses descriptive statistics, synthesizes and compares data in the period 2019 - 2023 in Vietnam.

4. RESULTS AND DISCUSSION

4.1. Vietnam tourism in the context of digital transformation

Digital transformation is the overall and comprehensive change process of individuals and organizations in the way of living, working and production methods based on digital technologies. In tourism, digital transformation is changing the way of traveling, the way of doing tourism, the way of doing tourism business, and the way of managing tourism thanks to data and digital technology. Over the past few years, the phrase "digital transformation in tourism" has been mentioned more and more often. The strong spread of Industry 4.0 with the advent of new technologies such as artificial intelligence (AI), Internet of Things (IoT), big data, blockchain, virtual reality (VR), etc. is having an impact. deeply into the entire economic and social life. Since then, we have gradually replaced traditional operating methods with operating in a digital environment, and the tourism industry is no exception.

- Revenue from Vietnam's tourism industry

Table 1: Revenue from tourists in Vietnam in the period 2014 - 2023

Year	Total revenue from tourists (trillion VND)	Growth (%)
2014	322,86	11,4
2015	355,55	*
2016	417,27	17,5
2017	541,00	29,7
2018	637,00	17,7
2019	726,00	14,0
2020	312,00	-57,0
2021	180,00	-42,3
2022	495,00	175,0
2023	678,30	37,0

(Source: Vietnam National Tourism Administration)

According to table 1, in the period 2014 - 2019, revenue from tourism in Vietnam always tends to increase sharply. If in 2014, revenue from tourists was 322.86 trillion VND, by 2019, revenue had doubled (reaching 726 trillion VND). In terms of growth rate, 2017 was the year with the largest growth rate, up to 29.7%. The period 2017 - 2019 is considered three years of strong development of Vietnamese tourism. In 2020 and 2021, under the outbreak of the Covid 19 pandemic, the world in general and Vietnam in particular suffered terrible economic devastation. Tourism is seriously decreasing, especially in 2021, with many rounds of social distancing causing the number of tourists in Vietnam to only 180 trillion VND (the lowest in the period 2014 - 2023). After the COVID-19 pandemic was pushed back, the tourism market recovered. The proof is that by 2022, the growth rate of tourism revenue will reach 175%. By 2023, Vietnamese tourism has gradually recovered and tourism revenue is nearly equal to before the epidemic, with 678.3 trillion VND. With positive signs from 2023, the Vietnam National Tourism Administration forecasts that in the coming time, Vietnamese tourism will have strong changes and strong development.

- *Travel transitions from offline to online*

With the explosion of the 4.0 industrial revolution, the tourism industry is transitioning from offline tourism to online tourism around the world, including Vietnam. Currently in Southeast Asia, according to Table 1, it can be seen that in 2022, Thailand is the country with the highest online tourism revenue with 5 billion USD (accounting for 29.41% of the region's online tourism revenue). Southeast Asia region). Vietnam has quite modest online tourism revenue, with 2 billion USD by 2022 (accounting for 11.76% of Southeast Asia's online tourism revenue). It is forecast that by 2025, Indonesia, Singapore and Thailand will be the three countries with the highest revenue from online tourism in Southeast Asia.

Table 2: Online tourism revenue in Southeast Asia (Unit: Billion USD)

Country \ Year	2019	2020	2021	2022	2025 (Forecast)
Indonesia	10,1	2,6	2	3	10
Philippines	2	0,5	0,4	1	4
Thailand	7,2	2,6	2	5	9
Malaysia	4,7	2,2	1	2	8
Singapore	4	2,5	2	4	9
Vietnam	4	2,5	1	2	6
Southeast Asia	34	12	8	17	44

(Source: Vietnam e-commerce report 2023)

In terms of growth rate, due to the impact of the COVID-19 pandemic, in 2020 and 2021, online tourism revenue decreased significantly. At its peak in 2021, Vietnam only earned 1 billion USD from online tourism. By 2022, online tourism in Vietnam has begun to flourish, as evidenced by the doubling of revenue in 2022 compared to 2021. It is forecast that by 2025, online travel revenue will reach 6 billion USD. Compared to other countries in Southeast Asia, Vietnam's revenue from online tourism is still quite modest. In the coming time, the tourism industry will need to further exploit the potential of online tourism.

- Tourism businesses participate in digital transformation

From adapting to the situation during the COVID-19 epidemic until now, tourism businesses have made significant changes. In particular, the application of technology has brought many conveniences to customers. Realizing the urgency to apply technology, tourism businesses are increasingly deploying it more strongly. Among the technology solutions that are developing at a rapid pace, we can mention a number of trends, such as: mobile applications, AI and Chatbots, ratings and reviews, virtual reality... Thanks to the application of technology, Tourism businesses can more easily reach potential customers, costs for operating the company apparatus tend to decrease and companies also save time.

In fact, many tourism businesses have successfully achieved 100% digitization of the company's operating processes, with all employees working on software systems. Typically, Vietravel Tourism and Transportation Marketing Joint Stock Company is one of the leading travel agencies in Vietnam and has soon determined that comprehensive digital transformation is the best solution to maintain its position. With the policy of comprehensive and strong digital transformation of the e-commerce business, the company also renewed the Vietravel application and loyalty card system. Vietravel's customers today not only have many product and service options, but also buy tours quickly and conveniently, as well as enjoy many exclusive incentives. These are the continuous efforts that Vietravel Tourism and Transportation Marketing Joint Stock Company brings to customers in order

to be ready to anticipate when the tourism industry grows strongly in the coming years. On the other hand, Vietravel Tourism and Transportation Marketing Joint Stock Company also implemented a variety of personnel training programs for the Company, in addition, the online business and customer care segments were comprehensively upgraded.

- Outstanding products of the tourism industry in the context of digital transformation

Recently, the General Department of Tourism has focused on building digital platforms at the national level to help the tourism industry transform digitally quickly and consistently. Below are some outstanding products.

Vietnamese card - National tourist card: The National Travel Card is integrated with modern, safe, secure and interconnected technologies with utilities in many related fields such as health, education, transportation, e-commerce and utilities. residential areas... This card will help make non-cash payments, save time, increase experience and convenience for tourists.

Vietnam Travel application: The application has utilities such as searching for tourism information, digital tourism maps, looking up travel businesses, accommodation establishments, tour guides, booking rooms, booking tickets, electronic payments, etc.

Tourism Management and Business Platform: The platform's outstanding features are: One-touch electronic payment, room management at accommodation establishments, promotion program management, sales management, customer loyalty management, multi-media guide,...

Tourism industry database system: The system includes outstanding data such as information about travel businesses, tour guides, accommodation establishments, tourist areas, attractions, etc.

Electronic ticket system: The most outstanding utility of the electronic ticket system is that visitors can use a single ticket with a QR code for a large group of people instead of one ticket for each person like other systems.

Multimedia narration: This is a product that introduces travel information in the form of multimedia content including: text, image, audio, video... integrated on the Vietnam Travel application.

4.2. Vietnam tourism human resources in the context of digital transformation

- The quantity of human resources: According to the Vietnam National Tourism Administration, the number of personnel in tourist accommodation establishments in 2023 is only about 350,000 people, meeting 70% of demand. With the existing number of facilities, if the capacity reaches over 70%, the tourism industry needs about 507,000

workers in accommodation facilities, of which about 50,000 are needed for administrative personnel. The forecast for Vietnam's tourism growth in the next 10 years is quite optimistic, by 2025 the country needs 950,000 - 1,050,000 accommodation rooms and by 2030 it needs 1,300,000 - 1,450,000 rooms. Thus, in 2025, the need for labor in the accommodation sector will be about more than 800,000 and in 2030 it will be more than 1 million. In the period 2022 - 2030, on average, over 60,000 workers will need to be added each year. Thus, each year, the industry needs about 40,000 new employees and about 20,000 employees need to be retrained. However, every year schools only train about 20,000 students, of which the proportion of professionally trained tourism workers is still low, accounting for only 43% of the total number of tourism workers.

- ***The quality of human resources:*** Vietnam's tourism human resources in the past period have had positive changes, reflected in a steady increase in quantity (average growth of 12.4%/year in the period 2011 - 2017) and improvement in tourism human resources. Significant improvement in quality (42% of workers are trained in tourism). Currently, the proportion of workers with tourism expertise accounts for about 42% of the total number of workers in the entire Vietnam Tourism industry, 38% are trained from other industries and about 20% have not received formal training. . Of the total 42% of workers trained in tourism, only 10% of workers have university or postgraduate degrees (accounting for 3.5%); 50% of workers have elementary, intermediate and college degrees (accounting for 20%); The remaining 40% are workers trained through short-term classes. About 60% of workers in the field know and use different foreign languages. Among them, English accounts for the highest proportion, with more than 50% of the entire industry's workforce.

According to the rankings of the World Economic Forum (WEF), in 2019, the index of human resources and labor market was ranked 47th (down 10 places compared to 2017). In ASEAN, the human resource and labor market index of Vietnam Tourism ranked 6th, behind markets considered to be competitors to Vietnam tourism such as: Singapore (ranked 5th), Malaysia (ranked 5th), Malaysia (ranked 5th) 15th place), Thailand (27th place), Philippines (37th place) and Indonesia (44th place). According to the World Economic Forum 2017, the skills of Vietnamese students are ranked 97th, much lower than other countries in the world, in the ASEAN region only higher than Cambodia. Currently, many Filipino, Thai, Indonesian, and Singaporean workers come to Vietnam to work, and almost all 4-5 star hotels have foreign workers.

In the context of the explosion of the 4.0 industrial revolution, the ability of workers to apply information technology is very important. However, the ability to meet professional qualifications of workers working in the tourism industry is still low; In particular, the ability to apply information technology and use foreign languages in professional operations is still very limited. The number of workers working in the tourism industry

who can use foreign languages is about 60% of the total workforce, of which English is the most used, about 42%. There is a serious lack of tourism human resources who know other languages such as Chinese is only 5%, French is 4% and other languages are 9%. As for English, only 15% have a university degree and are fluent in communication (mostly work as tour guides, hotel receptionists and market staff), the remaining 85% only reach the basic level. Weak foreign language skills and lack of professional skills have limited tourism units from fully exploiting tourism resources from foreign visitors.

4.3. General assessment of Vietnam's tourism human resources in the context of digital transformation

- **Advantages:** Through the above analytical data, it can be seen that Vietnam's tourism human resource development in the past period has had positive changes, reflected in a steady increase in quantity and improvement. qualitatively significant.

The number of human resources in our country's tourism industry is on the rise. This clearly reflects the particularly important role of the industry as well as the effectiveness of the socialization of tourism activities. The industry's human resources are considered one of the important factors that have contributed positively to the achievements of building and developing the industry over the past many years. Qualifications, professional skills, management capacity, etc. is increasingly enhanced.

- **Restrictions:** In recent times, tourism human resources have revealed many limitations such as:

The number of tourism workers is not evenly distributed in localities throughout the country. Most workers in the tourism industry are concentrated in big cities. This leads to a situation where some areas have a surplus of labor, but some areas have a labor shortage, especially in key mountainous tourist areas.

Among the tourism workforce, the majority are workers who have not undergone formal training or are workers outside the industry. According to Prof.Dr. Dao Manh Hung, current tourism human resources are both lacking in quantity and weak in expertise, thus leading to the low quality of our country's tourism service.

In the current context of digital transformation, being proficient in using computers and technological devices for work is extremely important. However, the number of tourism workforce with these skills is still low, and this workforce is often concentrated in businesses located in big cities.

Regarding the training of tourism human resources. The proportion of professionally trained tourism workers is still low. Specifically, with the current growth rate, the Vietnam National Tourism Administration estimates that each year the industry needs 40,000 new employees and 25,000 employees need to be retrained. Meanwhile, every year schools in Vietnam only train about 20,000 students. World Bank also assesses the quality of Vietnam's human resources as being at a low level in the international capacity scale. This

leads to Vietnamese tourism human resources being at risk of being competitive for jobs right in Vietnam by human resources from ASEAN countries.

For institutions that train students specializing in tourism, the majority of lecturers are highly qualified, highly specialized, and experienced, capable of conveying a lot of knowledge to students in the classroom. However, we still have not really exploited and updated new knowledge, have not been active in applying technological devices in searching for information, and have not promoted guidance and training for students in practical research. through the internet environment.

5. RECOMMENDATIONS

To overcome existing limitations and at the same time improve the quality of tourism human resources in Vietnam in the context of digital transformation, the article recommends the following issues:

- For the Tourism industry: The Vietnam National Administration of Tourism needs to continue to improve the institutional system and policies for tourism human resource development. Review, amend, supplement and promulgate new legal documents related to digital transformation of the tourism industry in general and tourism human resource development in particular to suit the context and situation. new picture.

The Vietnam National Administration of Tourism needs to continue to innovate thinking and raise awareness throughout the industry about the digital technology revolution in the tourism industry. Regularly organize training and refresher courses, organize conferences and seminars on digital transformation. This is a necessary measure to raise awareness and innovate thinking for the tourism workforce.

The General Department of Tourism needs to have a mechanism to create favorable conditions to promote training, fostering and developing tourism human resources. Ensure the training of tourism human resources is consistent and meets the requirements of tourism industry development in the context of digital transformation. At the same time, the General Department of Tourism needs to have a good remuneration mechanism and mechanism to attract talent for the tourism industry. Create favorable working conditions and working environment for highly qualified human resources in technology in the tourism industry. There is a mechanism to promptly encourage and reward workers in the industry with innovative ideas, creativity, research and application of advanced technological achievements to improve productivity, quality and efficiency in work.

- For training facilities: Training institutions need to continuously and periodically foster and train to improve the capacity of teachers and lecturers, especially professional qualifications, professional skills, foreign languages, and information technology to meet the needs of teachers and lecturers. the need for direct human resource training in the context of digital transformation.

In order for tourism majors to have good and up-to-date knowledge to meet job positions in the context of digital transformation, training institutions need to update and innovate programs and teaching methods. To help tourism majors have more practical knowledge, training institutions need to be closely linked with businesses. This is an opportunity for students to gain experience and gain practical experience. In addition to specialized knowledge, training institutions need to promote guidance and training for students in practical research through the internet environment.

- For tourism businesses: To attract and retain highly specialized workers, tourism businesses need to build flexible salary and bonus mechanisms. This will motivate them to devote themselves to the company.

For workers to adapt in the context of digital transformation, training and retraining are extremely important. Tourism businesses should regularly and periodically organize short-term training courses (send staff to study or invite leading experts in the field of tourism) to constantly improve the quality of quality human resources. high in the enterprise.

- For workers working in the tourism industry: Although the tourism industry, tourism businesses or training institutions have offered a series of solutions to improve the development of tourism human resources in the context of digital transformation, if tourism human resources themselves do not Even if you try, it won't be effective. Every worker in the industry needs to actively learn and improve knowledge, professional qualifications, and professional skills - especially knowledge and skills in using technology at work, and be ready to access and use it. New technology to serve your work.

6. CONCLUSION

Digital transformation in tourism is an inevitable development trend in the fourth industrial revolution. In particular, human resources also need to develop to meet this change. Currently, tourism human resources have a steady increase in quantity and significant improvement in quality. However, tourism human resources also have many limitations such as: the number of workers is unevenly distributed, tourism workers are mostly untrained, etc. To overcome these limitations, it is necessary to involving the entire tourism industry, tourism businesses, tourism training establishments and the workers themselves.

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VOCATIONAL EDUCATION WITH SMART TOURISM DEVELOPMENT IN VIETNAM

Phạm Đức Thịnh[1]

Abstract: *With favorable geographical location, climate, and natural conditions, Vietnam is a country with potential for tourism development. Every year, tourism contributes significantly to Vietnam's economic growth. With the impact of science and technology, digital transformation is taking place strongly in the tourism industry. Traditional tourism is being replaced by smart tourism. To develop tourism in the current period, in addition to unique tourism products and modern infrastructure, Vietnam also needs high-quality human resources. This shows the importance of training tourism human resources at vocational education institutions. Based on data and information searched and collected through reports of the Ministry of Culture, Sports and Tourism, Vietnam National Tourism Administration, prestigious domestic and foreign magazines... the article will analyze the current status of human resource training for smart tourism at vocational education institutions in Vietnam. The article focuses on analyzing a number of aspects, such as: Scale of trained human resources, level of trained human resources, training programs... From there, the article provides assessments and proposes some solutions to improve the quality of human resource training for smart tourism at Vietnam's vocational education institutions.*

Keywords: *Smart tourism, sustainable tourism, vocational education tourism, human resources.*

Tóm tắt: *Với vị trí địa lý, khí hậu, điều kiện tự nhiên thuận lợi, Việt Nam là quốc gia có tiềm năng phát triển du lịch. Hàng năm, du lịch đóng góp không nhỏ vào tăng trưởng kinh tế của Việt Nam. Với sự tác động của khoa học công nghệ, du lịch truyền thống đang dần được thay thế bằng du lịch thông minh. Để phát triển du lịch thông minh, ngoài những sản phẩm du lịch đặc sắc, cơ sở hạ tầng hiện đại, Việt Nam còn cần nguồn nhân lực chất lượng cao. Điều này cho thấy tầm quan trọng của việc đào tạo nguồn nhân lực du lịch tại các cơ sở giáo dục nghề nghiệp. Dựa trên các dữ liệu, thông tin được tìm kiếm và thu thập thông qua các báo cáo của Bộ Văn hóa, Thể thao và Du lịch, Cục Du lịch Quốc gia Việt Nam, các tạp chí uy tín trong nước và quốc tế... bài viết sẽ phân tích thực trạng đào tạo nhân lực cho du lịch thông minh tại các cơ sở giáo dục nghề nghiệp của Việt Nam. Bài viết tập trung phân tích trên một số khía cạnh, như: Quy mô nhân lực được đào tạo, trình độ nhân lực được đào tạo, chương trình đào tạo... Từ đó, bài viết đưa ra các đánh giá và đề xuất một số giải pháp nhằm nâng cao chất lượng đào tạo nhân lực cho du lịch thông minh tại các cơ sở giáo dục nghề nghiệp của Việt Nam.*

Từ khóa: *Du lịch thông minh, du lịch bền vững, giáo dục nghề nghiệp, nguồn nhân lực du lịch.*

1. INTRODUCTION

Along with the development of science and technology, digital transformation is taking place strongly in the tourism industry. As long as they have an electronic device connected to the internet, customers can directly search for tourist destinations, receive information about service prices, search for promotions, book airline tickets, and book hotel rooms… These outstanding applications of science and technology have created a new method of tourism: Smart tourism. In Vietnam as well as other countries around

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the world, smart tourism is gradually replacing traditional tourism. The development of smart tourism helps customers choose tours that suit their interests, needs, economic capabilities... in a simple and convenient way.

In order to maximize the country's tourism potential in the current period, the Government has issued Resolution No. 82/NQ-CP setting out the development directions of Vietnam's tourism in the coming time. In particular, the orientation to provide professional services is considered the central orientation. To provide professional tourism services, human resources are considered a core factor. Currently, human resources for Vietnam's tourism industry are being trained mainly at vocational education establishments. Vocational education will equip the workforce with knowledge and vocational skills. In addition to knowledge and skills, today's tourism human resources must also have technological capacity and adaptability to best serve the experiential needs of tourists. The above analysis shows that studying human resource training activities for the tourism industry of vocational education institutions in the current context is extremely necessary.

2. THEORETICAL BASIS AND RESEARCH OVERVIEW

2.1. Theoretical basis

Vocational education: Vocational education is a level of the national education system that provides training at primary level, intermediate level, college level and other vocational training programs for workers. Vocational education is carried out in two forms: formal training and continuing training [9]. Vocational education activities can be carried out at vocational education centers, secondary schools and colleges.

The goal of vocational education in different periods is to train human resources directly for production and service business activities: Have professional practice capacity corresponding to the training level; have ethics and health; have professional responsibility; have the ability to be creative and adapt to the working environment in the context of international integration; ensuring improved productivity and labor quality [9]. In the context of science and technology developing strongly and competition between businesses being very fierce today, training at vocational education establishments needs to fully equip tourism human resources with attitudes, professional skills and the ability to apply technology at work. To train high-quality human resources, vocational education institutions are currently promoting digital transformation in all aspects of operations. Digital transformation in vocational education creates a breakthrough in quality, rapidly increasing the amount of training, contributing to improving the quality of skilled human resources, increasing labor productivity and increasing national competitiveness [23].

Smart travel: Smart tourism is a tourism method developed based on the application of achievements of modern science and technology, especially information and communication

technology, to create values and benefits. The best service, meeting the diverse needs of tourists, tourism businesses, tourism management agencies and communities [7]. The purpose of smart tourism is to improve resource management efficiency, maximize competitiveness and enhance sustainability through the application of technology to innovation and practice. Smart tourism is characterized by 3 main components [14]:

Smart destination: As an innovative tourism destination, built on advanced technological infrastructure, ensuring sustainable development of tourist areas, accessible to everyone, facilitating interaction of visitors and integration into the surrounding environment, increasing the quality of the experience at the destination, improving the quality of life of residents.

Smart experience: Smart experiences are technology-mediated travel experiences and the enhancement of information exchange through personalization, contextual awareness and real-time tracking.

Smart business ecosystem: Smart business ecosystems are complex business ecosystems that create and support the exchange of tourism resources combined with tourism experiences.

Tourists participating in this model are smart travelers. They not only consume but also share and create experiences, manage and monitor to ensure perfection for their and other travelers' next journeys.

Vocational education with the development of smart tourism: To develop smart tourism, there needs to be synchronization of many factors: Resources, infrastructure, facilities, science and technology and people. In particular, people - human resources - are considered the central factor creating service quality for the development and success of the tourism industry [15].

Human resources for smart tourism not only need to master basic knowledge about tourism, but more importantly, master the application of modern information technology (Lombardi, 2021) [6]. According to research by Doan Manh Cuong (2023), human resource training activities to meet the development requirements of smart tourism need to focus on 3 contents: Training scale, training level [2].

Training scale: The scale of human resource training for smart tourism is determined by the number of students participating in tourism training courses at vocational education institutions. Reality shows that there are many people who are trained in tourism, but when they graduate they work in another field, and vice versa, many workers are not trained in tourism but they work in the tourism industry. Therefore, the number of trained workers working for the tourism industry is difficult to quantify and control. To meet the requirements of smart tourism, in addition to direct tourism human resources, there are also indirect tourism human resources. These are people who are not directly involved in tourism activities, but

their role is no less important, typically the residential community in tourist destinations. This force is often many times larger in number than the direct tourist workforce.

Training level: The level of human resources in smart tourism is basically determined by which tourism training courses you are participating in at vocational education institutions: Short-term training classes, elementary, intermediate or college level. Depending on the position and nature of the job, the qualifications requirements for tourism workers are different. Because tourism is a highly service-oriented service industry, work efficiency depends greatly on the proficiency of the tourism workforce, therefore, all those working in the tourism industry in general and Smart calendars in particular must be trained, vocationally trained and professionally fostered. In the context of deep and comprehensive international integration, under the impact of the 4.0 industrial revolution, human resources for smart tourism, in addition to professional qualifications, must also have foreign language and technological abilities.

Besides the scale of training and training level, according to Deng (2022), human resource training activities to meet the requirements of smart tourism also depend greatly on the training programs of vocational education institutions. Currently, most educational institutions are aware of the importance of human resource training for smart tourism, but there are still many challenges: Lack of teachers and weakness in practice, curriculum system conservative, not innovative, meeting the needs of society [1].

2.2. Research overview

Up to now, there have been a number of projects that hav researched human resources to meet the requirements of tourism in the new context. Typically, at the Vietnam Tourism Human Resources Forum 2019, Prime Minister Nguyen Xuan Phuc made the comment: People are the main factor for the development and success of the tourism industry in the new context. Tourism is truly one of the industries with the most advantages and economic efficiency in Vietnam but has not yet been exploited to its full potential [13]. Research by Nguyen Lam Ngoc Vi and Duong Thanh Tung (2023) also stated that the quality of human resources to meet the requirements of smart tourism in Vietnam still has many limitations compared to other countries in the region, such as: Lack of labor resources, foreign language skills, computer skills, ability to apply technology... are limited. This leads to many challenges for developing smart tourism in Vietnam [10]. Sharing the same opinion as Nguyen Lam Ngoc Vi and Duong Thanh Tung, Vu Thanh Long's research (2021) showed that the tourism industry's human resources still cannot meet the development requirements of the economy in many aspects: The number is small; Human resource structure is not synchronized; Practical capacity is not commensurate with qualifications [24]. One of the reasons why the quality of human resources has not met the requirements of smart tourism was pointed out by Nguyen Thi Lan Hanh and colleagues (2022) in their research: Because the current tourism training program still

focuses on theoretical teaching and is slow to innovate, the content of the current training program still does not meet the requirements and trends of Industry 4.0 [12]. Although there are still many limitations, the workforce in the field of smart tourism is gradually being standardized. This is evidenced by the fact that vocational education institutions providing tourism training have been formed and expanded, with diversity in training levels and training programs (Nguyen Thi Lan Hanh, 2022) [12].

Previous research projects have confirmed the role of human resource training in the development of smart tourism. However, there have been no studies specifically researching the role of vocational education as well as the training of smart tourism human resources at these establishments in Vietnam. This is the space for the author to conduct this research.

3. DATA AND RESEARCH METHODS

3.1. Research data

The article uses secondary data collected through two steps:

Step 1: Learn about data accessibility: The author conducted research on domestic and foreign documents to learn about the ability and level of access to data and information related to human resource training for smart tourism at vocational education institutions.

Step 2: Search and collect data: Secondary data was searched and collected through reports from the Ministry of Culture, Sports and Tourism, Vietnam National Tourism Administration, General Department of Vocational Education, domestic and international magazines, other research works.

3.2. Research methods

Statistical methods: This method is used to present data related to the number of tourists and the number of tourism workers trained in vocational education establishments. The data are arranged logically and scientifically.

Analytical method: Used throughout the entire content of the article, to clarify the role of vocational education in human resource training to promote the development of smart tourism.

Synthetic method: Based on this method, the author synthesizes the data and information collected for each content and presents them systematically to serve the research process.

Comparative method: Used to compare the number of workers and labor qualifications trained over the years at vocational education establishments. On that basis, the article provides some assessments on the quality of human resource training at vocational education institutions in the current period.

4. RESEARCH RESULTS

4.1. Current status of smart tourism development in Vietnam

With favorable geographical location, climate, and natural conditions, Vietnam is a country with great potential for tourism development and is a destination for many international tourists. The 4.0 industrial revolution is creating momentum for smart tourism to develop. In Vietnam, with 67% of the population using the internet, 55 million social network users, and more than 70 million mobile phone users, this is a great premise for Vietnam to develop smart tourism [17]. Recognizing the development trend of smart tourism, the Government has issued a master plan for applying information technology in the tourism sector according to Decision No. 1671/QD-TTg dated November 30, 2018, at the same time. In 2020, the General Department of Tourism has launched the application "Safe Vietnam Travel" with many support utilities to serve tourists. The development of smart tourism in Vietnam is shown in the following aspects:

Firstly, science and technology application activities of tourism businesses are taking place strongly. Grasping the new needs of the tourism market, in recent times, many domestic tourism businesses have quickly developed their business on online platforms. Thanks to that, new technology solutions and mobile applications have appeared, typically including: Virtual reality - VR, augmented reality - AR, Use interactive screen applications and smart travel application software using 360 technology... The efficiency for businesses is reflected in improving competitiveness, expanding business, increasing sales, and enhancing brand reputation. Typically, Saigon Tourist company, since 2018, Saigon Tourist has made large investments in technology, establishing an online sales department. Currently, 80% of this business's marketing activities have shifted to digital marketing. Sales activities on fanpages (exchange and interaction pages between businesses and customers) have grown strongly, with personnel in this segment increasing by up to 200%. As a result, online revenue accounted for 30% of total revenue (equivalent to VND 1,372.5 billion) [19].

The involvement of tourism businesses in applying information technology to business activities has led to a significant shift between traditional tourism and smart tourism. According to statistics from the Vietnam Tourism Association, in the past 5 years, in Vietnam the search for travel information online has increased more than 32 times. Currently, up to 88% of domestic tourists look up information online. On average, each month there are more than five million searches in Vietnamese for tourism products [19].

Second, the number of tourists using smart technology applications is increasing rapidly. In the period 2015-2019, Vietnamese tourism developed dramatically. International visitors have increased 2.3 times from 7.9 million in 2015 to 18 million in 2019, achieving an average growth of 22.7%/year. This is a very high growth rate compared to the average growth rate of 7.6%/year in the 2011-2015 period and is the highest rate in the world according to annual reports of the United Nations World Tourism Organization. Domestic

visitors have increased nearly 1.5 times from 57 million in 2015 to 85 million in 2019, an average increase of 10.5%/year. The direct contribution of tourism accounts for an increasingly high proportion of gross domestic product (GDP): in 2015 it was 6.3%, by 2019 it was 9.2%, an increase of 2.9 percentage points [21].

The COVID-19 pandemic has had a major impact on Vietnam's tourism industry. In 2020, due to the onset of the above epidemic, the number of tourist arrivals in Vietnam decreased sharply compared to 2019. In 2021, due to the complicated developments of the epidemic along with strict disease control measures from the Government of Vietnam and other countries around the world, it has had a major impact on the tourism industry. The number of international visitors to Vietnam in 2021 is only 0.9 million, the number of domestic visitors is 40 million, a sharp decrease compared to 2020. In 2022, the number of international visitors to Vietnam will increase to 3.6 million, and the number of domestic visitors will be 101 million. By 2023, when the epidemic has been controlled, tourism in Vietnam is in the recovery phase. With the widespread application of information and communication technology platforms in which data integration infrastructure is developed synchronously, ensuring timely interaction between three parties (managers, tourism businesses and travel agencies). visitors) Vietnam's tourist arrivals numbers have improved significantly by 2023. The number of international visitors to Vietnam in 2023 will reach 12.6 million (up 250% compared to 2022), the number of domestic visitors will be 108 million (up 6.93% compared to 2022) [3] (Figure 1).
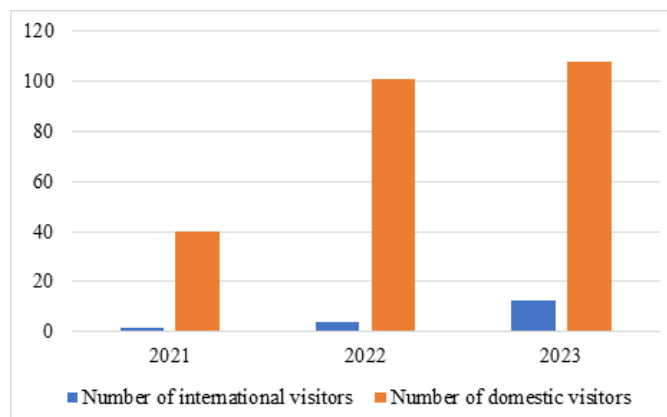
Figure 1: Number of tourist arrivals in Vietnam in the period 2021-2023

(Source: General Statistics Office of Vietnam (2023))

According to statistics from the Vietnam E-Commerce Association, with the Government's tourism recovery measures, smart tourism will develop quite strongly in Vietnam by 2023: The proportion of domestic tourists booking hotels online and booking online tours reached more than 60%, the proportion of international tourists using these two services reached more than 75%. Besides, up to 71% of tourists refer to destination information on the Internet;

64% make reservations and purchase services online during their trip to Vietnam [14]. With the efforts of the State, tourism businesses and many other supporting departments, in 2023 Vietnam tourism was honored as "Asia's Leading Destination 2023"[12].

4.2. Current status of vocational education and smart tourism development in Vietnam

Regarding the number of vocational education institutions providing training in tourism: The tourism industry is currently trained at vocational education institutions and universities.
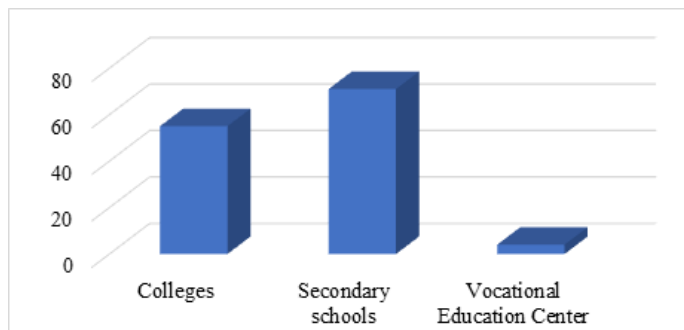
Figure 2: Number of vocational education institutions training tourism in Vietnam

(*Source: General Statistics Office of Vietnam, 2019)*

Of these, 90% of training is carried out at vocational education establishments. The country currently has nearly 130 vocational education institutions providing tourism training, including 55 vocational colleges, 71 intermediate schools and 4 vocational education centers [20] (Figure 2). Due to the increasing speed of development of Vietnam's tourism, the number of vocational education and training institutions in the tourism industry is tending to increase.

Regarding the scale of human resource training for the tourism industry: After the COVID-19 pandemic was controlled, Vietnamese tourism is in a strong recovery period. In order to meet the growth rate of tourism in general and smart tourism in Vietnam in particular in the current period, each year vocational education institutions have trained an average of about 20,000 workers, increasing the number of personnel. Currently, there are about 350,000 people in tourist accommodation establishments, meeting 70% of market demand. Of the 20,000 workers trained annually, there are only approximately 1,800 university and professional college students, 2,100 tourism vocational college students, and the rest are intermediate, elementary, and short-term training students under three months [5]. This causes the human resources provided by training facilities to the market to not meet the requirements of businesses, especially management human resources. Even when recruiting the right people to study tourism, businesses still waste time and effort on retraining.

Regarding the level of trained human resources: Of the total number of workers currently working in the tourism industry, 43% of workers are trained in tourism, 35% are trained in other majors, 22% have not passed train. Among the workers trained in tourism at vocational education establishments, 55% of workers have elementary, intermediate and college degrees, and the remaining 45% are workers trained through short-term classes at vocational education center [10]. This shows that Vietnam's tourism labor structure is not synchronized, the number of qualified and highly skilled staff is still small.
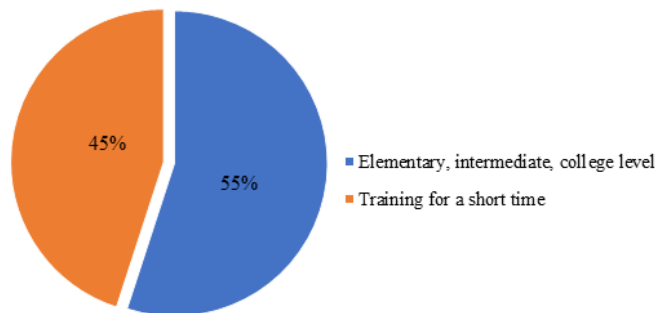
Figure 3: Structure of labor qualifications in the tourism industry through training at vocational education establishments

(Source: Nguyen Lam Ngoc Vi, Duong Thanh Tung, 2023)

Despite having passed all levels of training, workers in Vietnam's tourism industry still lack experience working in an international environment, have limitations in foreign languages and technology; limited capacity for creativity, leadership, management, administration, and marketing to access the market; Limited ability to apply new technology in the tourism sector. Many 4-star and 5-star hotels in Vietnam currently employ a large portion of foreign workers, especially in senior positions, showing the high level of competition for employment among tourism human resources in Vietnam.

Regarding the training program: The tourism training program at Vietnam's vocational education establishments currently still follows the traditional model, heavy on theory. Practical and practical sessions have been arranged in the training program but the duration is still short. Today, human resources that meet the requirements of smart tourism not only need to master basic knowledge about tourism, but more importantly, master the methods of applying modern information technology and technology subjects. Technology and application of technology in tourism is still very limited.

5. DISCUSSION AND SOLUTIONS

5.1. Discussion

Based on the above analysis, we see that in recent times, Vietnam's vocational education institutions have achieved many achievements in training high-quality tourism

human resources, making a significant contribution to the development of tourism. of Vietnam's smart tourism, specifically:

The scale and quality of labor training of vocational education institutions for smart tourism is increasing. Currently, each year Vietnam's vocational education institutions train an average of about 20,000 workers for the tourism industry, partly solving the current human resource difficulties. Among them, the number of workers with intermediate and college degrees is increasing.

Labor training methods for the tourism industry at vocational education establishments have undergone significant innovation. In addition to learning in the traditional way, currently vocational education institutions have some innovative content so that learners can understand technology and apply technology in the process of operating smart tourism. In addition, vocational education institutions have closely coordinated with tourism businesses to create conditions for learners to have many opportunities for practice and practical experience.

To meet the needs of the labor market in the tourism industry, vocational education institutions have strengthened enrollment measures and have policies to prioritize the development of local human resources, paying attention to skills training. necessary for people to participate in community tourism and direct tourism, especially communication skills and foreign language proficiency.

Although certain results have been achieved, labor training activities for smart tourism at vocational education institutions still have some limitations such as:

Firstly, although the scale of labor training for smart tourism at vocational education institutions has increased recently, it still does not meet the needs of the labor market. According to the Master Plan for Vietnam's tourism development to 2020, with a vision to 2030, employment for the tourism industry by 2025 is 3.5 million (of which 1.05 million are direct workers), by 2030 is 4.7 million (of which 1.4 million are direct workers) but currently the workforce in this field is only 350,000 workers [16].

Secondly, currently there is a lack of smart tourism courses in vocational education establishments or they exist but train separately, only providing computer application and office software courses. , and courses on science, technology and network marketing are almost non-existent. As a result, tourism graduates cannot fully meet the needs of the industry, especially smart tourism, leading to low job competitiveness.

Thirdly, the team of lecturers with professional and technological skills to serve smart tourism is still relatively weak, the quality of lecturers is relatively low, making it difficult to meet the actual needs of professional teaching innovation tourism today.

5.2. Solutions

From the above analysis, we see that to develop smart tourism in Vietnam in the coming time, vocational education activities need to innovate on some of the following contents:

Firstly, vocational education institutions need to continue to research and innovate training programs; Actively update the knowledge structure, optimize and adjust promptly to meet modern tourism models. In particular, vocational education institutions need to increase the amount of foreign language training and courses on technology application in providing services, marketing and tourism management. Vocational education institutions need to pay attention and make efforts to develop professional tourism management training programs, fully consider the career needs of the market and promptly refer to professional qualifications standards in the world. to promptly optimize program reform content effectively.

Secondly, vocational education institutions need to improve the capacity and comprehensive quality of the teaching staff, need to strengthen the training of talented teachers, and at the same time, train and improve the qualifications of teachers. In recruitment, vocational education institutions need to prioritize recruiting lecturers with the ability to practice in the smart tourism industry. In addition, institutions need to have outstanding mechanisms and policies to recruit teachers for this field of study.

Thirdly, vocational education institutions need to strengthen cooperation with tourism businesses and professional associations. Through cooperation, businesses will be the place for practice and internship of vocational education institutions. Learners can use the company's facilities, equipment, software, etc. to practice their profession. At the same time, businesses will send experts to participate in teaching, guiding practice, interning, and evaluating the learning results of learners. In addition, cooperation between vocational education and training institutions with tourism businesses and professional associations will forecast the human resource needs of the tourism industry in terms of quantity and quality requirements - this is an important basis. for vocational education institutions to carry out training activities.

Fourthly, vocational education institutions need to proactively connect and participate in training high-quality human resources with international training systems. This is an important content that needs to be promoted so that vocational education institutions proactively connect and participate in training high-quality human resources with international training systems. In addition, vocational education institutions must build mechanisms to attract investment in training systems, facilities, teaching staff, especially technology to incorporate knowledge into the training program. new type of smart tourism. This joint activity will equip learners with an understanding of technology, management and analytical thinking, as well as problem-solving skills for sustainable development of Vietnam's tourism industry.

6. CONCLUSION

Tourism is a field heavily influenced by the context of international integration in the region and the world, in which the development of tourism human resources to meet integration requirements and enhance the industry's competitiveness is special care. In the context that Vietnam is trying to restore the development of the tourism industry after the COVID-19 pandemic, the responsibility of the vocational education system is to train and supply skilled labor to participate in the labor market.

Science and technology are changing the way customers travel. Smart tourism is gradually replacing traditional tourism and growing stronger than ever. Therefore, training and supplying qualified labor to participate in the market of vocational education institutions is extremely important. The mission of vocational education institutions is to train human resources with comprehensive moral and intellectual development, mastering service skills and the ability to apply high technology. To carry out their mission well, in the coming time, vocational education institutions need to have comprehensive innovation in awareness, training equipment, training programs, improving teacher qualifications... To do this, vocational education institutions need cooperation from the State, from ministries, departments, branches, businesses and from learners. A reasonable and effective training mechanism will help vocational education institutions train human resources to meet the development requirements of smart tourism, in accordance with new trends, towards the sustainable development of Vietnam tourism in the future./.

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DEVELOPING SUSTAINABLE TOURISM IN HANOI
THROUGH A SMART URBAN GOVERNANCE MODEL

Vũ Thị Thúy Hằng[1], Hoàng Hải Hà[2]

Abtract: *In recent years, many famous destinations, including Hanoi, suffer from over-tourism and affect people's daily habits. Therefore, developing sustainable tourism through an innovative urban governance model will benefit all parties, transforming business from traditional to smart tourism, sustainable Tourism. The authors conducted a review and overview of the literature by studying published works. Classifying, systematizing, and comparing viewpoints during the review process is the basis for providing an appropriate theoretical framework. In addition, combined with actual data on sustainable tourism development through innovative urban governance in Vietnam and Hanoi, the authors used inductive reasoning to propose, smart tourism management model for Hanoi city. Besides, the article also emphasizes that smart urban governance depends heavily on local factors. The results of this theoretical research suggest sustainable tourism development in Hanoi in particular and tourist cities in general.*

Keywords: *Sustainable tourism, smart tourism, sustainable development, smart urban management model, Hanoi City*

Tóm tắt: *Vài năm gần đây, nhiều điểm đến nổi tiếng, trong đó có Hà Nội đang phải chịu tình trạng quá tải du lịch và ảnh hưởng thói quen hàng ngày của người dân. Vì vậy, việc phát triển du lịch bền vững thông qua mô hình quản trị đô thị thông minh sẽ mang lại lợi ích cho tất cả các bên, đồng thời chuyển đổi cách thức kinh doanh từ du lịch truyền thống sang du lịch thông minh, du lịch bền vững. Bằng việc nghiên cứu các công trình đã công bố, nhóm tác giả đã tiến hành đánh giá, tổng quan tài liệu. Việc phân loại, hệ thống hóa và đối sánh các quan điểm trong quá trình tổng quan là căn cứ để đưa ra được khung lý thuyết phù hợp. Thêm vào đó, kết hợp với các dữ liệu thực tế về phát triển du lịch bền vững thông qua quản trị đô thị thông minh tại Việt Nam và Hà Nội, nhóm tác giả đã sử dụng phương pháp suy luận quy nạp để đề xuất mô hình quản trị du lịch thông minh cho thành phố Hà Nội. Bài viết cũng đưa ra quan điểm quản trị đô thị thông minh phụ thuộc nhiều vào các yếu tố địa phương. Kết quả của nghiên cứu là một gợi ý về mặt lý luận cho việc phát triển du lịch bền vững tại Hà Nội nói riêng, cũng như của các thành phố du lịch nói chung.*

Từ khóa: *Du lịch bền vững, du lịch thông minh, phát triển bền vững, mô hình quản trị đô thị thông minh, thành phố Hà Nội*

1. INTRODUCTION

According to the World Tourism Organization (UNWTO), international tourism is on the rebound, reaching nearly 90% of pre-pandemic levels by the end of 2023. An estimated 975 million tourists traveled internationally between January and September

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2023, up 38% from the same period in 2022. International tourism revenue is estimated to reach $1.4 trillion in 2023, about 93% of the $1.5 trillion earned by destinations in 2019. As can be seen, international tourism is on the verge of a full recovery, which by 2024 could reach pre-pandemic levels, despite economic challenges such as high inflation, weaker global output, and significant geopolitical tensions and conflicts.

Tourism is a smokeless industry and a driving force behind Vietnam's economic growth nowadays. Vietnam has great potential for tourism development, with many beautiful, rich, and diverse natural landscapes in all parts of the country that attract tourists. Vietnam is also one of the few countries recognized by UNESCO and has many heritage sites. Vietnam has 54 fraternal ethnic groups; each region and each ethnic group has its own cultural identity, customs, and lifestyle, creating its attraction. In recent years, the Vietnamese government has always focused on turning the tourism industry into a spearhead economic sector, identifying sustainable and inclusive tourism development as a guiding viewpoint, guiding the development of the tourism industry in the new period. In the Vietnam Tourism Development Strategy to 2030, sustainable tourism development is one of the focuses in the socio-economic development strategies of many localities, helping to effectively exploit the potential of economic development, realize poverty reduction goals, etc. protect the environment, preserve values, cultural identity, ensure justice and social progress. According to the Master Plan for Tourism Development to 2020, with a vision for 2030, Vietnam's tourism industry focuses on prioritizing the development of technical infrastructure, especially transportation, information, tourism services, places of entertainment, entertainment, culture... serving tourism, enhancing the attractiveness of tourism resources, ensuring environmental sustainability and developing tourism human resources, helping Vietnam become an attractive destination for domestic and international tourists.

Vietnam has a fast urbanization rate, so the trend of urban integration with technology 4.0 and sustainable development is becoming inevitable. Hanoi Capital - the country's cultural, economic, and political center is also implementing smart city construction while promoting tourism development to serve this trend. On 30/12/2022, the Hanoi City Committee issued Resolution No. 18-NQ/TU on digital transformation, building a smart Hanoi city to 2025, with an orientation to 2030. The resolution clearly stated that building a smart Hanoi city is a task of particular strategic significance, both urgent and long-term. The Hanoi People's Committee also issued Plan No. 287/KH-UBND, implementing the Government's Resolution No. 82/NQ-CP dated May 18, 2023, on major tasks and solutions to accelerate the recovery and accelerate the development of effective and sustainable tourism in Hanoi between 2023 and 2025. Choosing to build a smart and modern city, ensuring fast and sustainable development factors associated with the image of the capital's tourism based

on applying critical technologies of the 4th Industrial Revolution, is the key to ensuring Hanoi's successful realization.

Smart cities are claimed to provide effective model with their successful management capabilities accompanied by the stimulus and location for the creativity and innovation along with providing the high quality of life and place, and low impact on the (Heo *et al.*, 2014). The smart city concept is distinguished from other similar ideas, i.e., digital or intelligent city, where it focuses on factors of human capital and education as drivers of urban growth rather than singling out the role of ICT infrastructure (Lee *et al.*, 2013). The previous researchs are focused on enhancing urban life regarding six dimensions: people, government, economy, mobility, environment and living. Smart city using a civil engineering and urban architecture lens, classified smart cities as new versus existing cities, and corresponding smart city projects to "soft" versus "hard" implementations.

Recently, scholars have started criticizing the smart city concept and potential in tourism (Söderström *et al.*, 2014). Some scholars argue that a smart city is mainly the outcome of vendors' marketing tourism campaigns (Söderström *et al.*, 2014), while others say that smart cities reflect little more than usual innovations. Moreover, many scholars argue about technological adjectives to the "city".

In such context, to ensure connectivity and overcome challenges, the article will provide views, principles, and models of smart city governance in sustainable tourism development in Hanoi.

2. LITERATURE REVIEW

2.1. Sustainable development and sustainable tourism

Sustainable development describes balanced socio-economic and environmental development. Sustainable development also requires a balance between socio-economic and environmental factors, ensuring benefits for all stakeholders. The concept of sustainable development is gradually formed from the reality of social life and is inevitable. According to the United Nations Commission on Environment and Development, sustainable development has four aspects: institutional, economic, social, and environmental (United Nations Commission, 2015). Sustainable development depends significantly on institutions and institutional sustainability. It is the transparency, clarity, and effectiveness of the legal system, policies, social consensus, and political stability. According to the Law on Environmental Protection of Vietnam 2005: "*Sustainable development is a development that can meet current needs without compromising or harming the ability of future generations to meet the needs.*" Sustainable development requires advancing and strengthening three interdependent factors: Ecomonic – Socioeconomic – Environmental.

The United Nations Environment Programme (UNEP), one of the pioneering organizations in disseminating sustainable development, said that in order to achieve sustainable development, it is necessary to pay attention to the following issues (Lele, S. M., 1991):

- Help the destitute people because they have no choice but to destroy their environment;

- Develop self-reliant development initiatives in conditions of limited natural resources;

- Cost-saving development initiatives using non-traditional economic criteria;

- Address significant health issues control, appropriate technology, self-sufficiency in food, clean water and shelter for all;

- Development initiatives must be people-centered.

At the IUCN-UNEP-funded World Wildlife Fund conference in Ottawa in 1986, summarizing the debate, rapporteurs Jacobs, Gardner, and Munro (1987) said that "Sustainable development meets five broad requirements: (1) integrating conservation and development, (2) satisfying basic human needs, (3) achieving social justice and justice, (4) ensuring social self-determination and cultural diversity, and (5) maintaining ecological integrity."

According to Vu Thi Thuy Hang (2023), methods of sustainable development are:

- Sustainable development based on a green economy: focusing on economic development without harming the environment, using renewable energy sources, reducing emissions and waste, and increasing the use of recycled and reused products.

- Community-based sustainable development: focus on sustainable community development, enhance community participation in the development process, ensure fairness, and protect members' interests.

- Cultural-based sustainable development: including preserving and developing traditional cultural values, respecting and protecting the rights of ethnic minorities, and enhancing cultural diversity.

- Technology-based sustainable development: focusing on using technology to solve environmental and social problems, using energy-saving technologies to reduce emissions and waste.

- Education-based sustainable development: focusing on educating and raising people's awareness of socio-environmental issues and sustainable values.

The United Nations' 2030 Agenda for Sustainable Development sets out 17 sustainable development goals (SDGs) to end poverty, protect the planet and ensure prosperity. With its positive economic, social, and environmental impacts, tourism is influenced by the

Agenda in the context of job creation, responsible production and consumption, and sustainable use of marine resources. Sustainable tourism has been a critical focus of tourism policymakers, destination marketing organizations, and scholars for many years. Sustainable tourism is understood in various ways as a process of tourism development and the outcome of tourism development. Sustainable tourism is an economic activity and an element of sustainable development policies (Sharpley, 2000). Sustainable tourism is the development of tourism to meet the needs of tourists while protecting and enhancing opportunities for the future to maintain cultural integrity, ecosystems, biodiversity, and habitat (UNWTO, 1998). Due to the complexity of the tourism industry and products and the way tourism is organized, sustainable tourism is inconsistent with aspects of sustainable development. Sustainable tourism is accepted when considering the theoretical link between the concept of sustainable development and the specific context of tourism.

2.2. Smart cities and smart city governance

"A smart city is an urban development vision that aims to integrate diverse information and communication technology (ICT) solutions securely to manage a city's assets" (Nguyen Van Minh, 2018). According to the European Commission (EC), a smart city is a region that applies digital solutions to improve the efficiency of traditional services and work networks, benefiting local people and businesses. Smart cities are based on the widespread application of IT to increase the region's competitive advantage. Smart cities ensure systemic socio-economic efficiency, create an efficient business-production environment, help attract investment capital, and increase management efficiency (Bunyod Matyusupov, 2024). Based on various priorities in smart cities, Caragliu *et al.* (2011) emphasize that a comprehensive definition of the smart city concept must incorporate multiple elements. They see a smart city as investing in people, social resources, and traditional and modern infrastructure to promote sustainable economic growth, improve quality of life, and manage natural resources wisely through governance.

It can be seen that when researching smart cities, scientists all mention the role of urban governance. Smart city governance is a new approach to urban policy, planning, and management, capable of addressing the emerging challenges of urban areas while ensuring sustainability. Smart city governance is concerned with the innovation potential and the growing role of advanced IT in the operation of smart cities (Bibri and Krogstie, 2017).

Smart city governance involves using ICT in the urban tourism environment to manage existing resources, plan and develop processes and services, and place residents and visitors at the city's heart. The development of smart destinations takes place simultaneously with the protection of the historical, artistic, and social heritage of communities. The transformation of any environment into a smart city is a long-term process in which the quality of human life and the relationship with the natural

environment must be preserved and sustainable.

For smart city governance towards sustainable development, it is necessary to pay attention to:

- Urban planning: Smart and sustainable cities need a detailed, long-term development plan. This plan includes specific objectives, strategies, and measures to ensure sustainable development and optimize resource use.

- Use of ICT: Smart cities use ICT to provide public services more efficiently and create a convenient living environment for residents—technologies such as intelligent transportation systems and information management.

- Resource management: It is necessary to manage energy, water resources, and waste sustainably and protect green areas and open spaces.

- Enhance public transport: Create green spaces to reduce traffic congestion and environmental pollution.

- Promote community participation: create mechanisms for community participation, civic counseling, and social interaction activities.

- Ensuring sustainability: Measures and strategies are needed to ensure long-term financial, social, and environmental sustainability.

3. RESEARCH METHODOLOGY

The article approaches the problem from the perspective of qualitative research and the use of secondary data. The authors collect data and online documents from reliable sources, such as websites of statistical organizations, information pages of government agencies, forums, and libraries of reputable learning materials.

By studying the published works, the authors evaluated and reviewed documents. The basis for the appropriate theoretical framework is the classification, systematization, and comparison of views in the review process.

In addition, combined with practical data on sustainable tourism development through smart city governance in Vietnam and Hanoi, the authors used inductive reasoning methods to propose a smart tourism governance model for Hanoi.

4. RESEARCH RESULTS

4.1. Current situation of sustainable tourism development in Hanoi

According to Booking.com's 2021 Sustainable Tourism Report, up to 97% of Vietnamese travelers think sustainable tourism is critical, and 88% see the pandemic as a catalyst for them to pursue more sustainable tourism in the future. 100% of Vietnamese tourists surveyed said that in the coming time, they want to stay at establishments committed to sustainable tourism.

As the country's capital, Hanoi has nearly 6,000 relics, 47 occupations/52 traditional occupations, and more than 1,350 craft villages, including 305 craft villages and traditional craft villages in 23 districts and towns. Hanoi has much potential to develop cultural, craft village, and spiritual tourism, and it has many potential and advantages when meeting natural and human factors to develop sustainable tourism.

Right from the late 90s, Red River tourism appeared with boat trips along the river to see the scenery, relics, and ancient villages along the shore. Hanoi's climate has four distinct seasons, abundant surface and groundwater resources all year round, diverse terrain including rich plains in the inner city, rice fields in Thuong Tin, Phu Xuyen, Ung Hoa … or the mountains and hills in Soc Son, Ba Vi areas. Ecological landscape systems with Ba Vi National Park, Huong Son scenic area, Vientiane mountainous landscape,… and some agricultural spaces such as specialized tree belts in Thanh Tri, Gia Lam, Dong Anh, Hoai Duc districts,…; ornamental flower growing belt in Bac Tu Liem, Dong Anh, Me Linh… has a long tradition of producing all kinds of agricultural products for urban areas, as well as natural and humane landscapes serving tourism development, mainly rural and farm tourism. Along with the system of natural tourism resources, Hanoi also owns a unique system of human tourism resources. All of the above factors have contributed to helping Hanoi have a solid foundation for sustainable tourism development in recent years and beyond.

In addition to the advantages, Hanoi tourism faces many difficulties, especially after the impact of the Covid-19 pandemic. First of all, the rapid urbanization rate, especially in peri-urban districts. The pressure of rapid economic development has seriously affected the tourism environment, causing increasing levels of traffic congestion, air pollution, water sources, noise, and changes in natural landscapes and habitats of organisms. On the other hand, the planning and use of natural resources are still inadequate; there is still encroachment on forest land, pond land, agricultural land, and change of land use purposes in contravention of the planning. In addition, the current tourism enterprises are mainly small and medium enterprises, which do not have a close connection with each other, and the local tourism community does not have long-term orientations and methodical plans in building quality and effective green tourism products, to meet the needs and tastes of tourists. On the other hand, after the COVID-19 epidemic, many workers in the tourism sector have shifted to other industries and fields, causing a shortage of human resources in the tourism industry to build and organize experiential tourism products.

4.2. Perspectives on sustainable tourism development through smart city governance in Vietnam and in Hanoi

4.2.1. In Vietnam

Smart city development is one of the important driving forces to realize the goal of turning Vietnam into a modern, high-income industrialized country by 2045. At the same

time, smart city development aims to promote national digital transformation and digital economy development based on science, technology, and innovation. Currently, localities are digitally transforming in many fields to improve people's lives and the service quality of local governments. Currently, there are many legal documents of the Government on smart cities, including some documents such as: Document No. 10384/VPCP-KGVX dated 01/12/2016 of the Government Office on building sustainable smart cities in the world and Vietnam; Document No. 58/BTTTT-KHCN dated 11/01/2018 of the Ministry of Information and Communications on guiding principles on IT and communication in smart city construction in Vietnam; Decision No. 950/QD-TTg dated 01/8/2018 of the Prime Minister approving the Project on sustainable smart city development in Vietnam for the period 2018-2025; Decision 829/QD-BTTTT dated 31/5/2019 of the Ministry of Information and Communications promulgating the ICT reference framework for smart city development (version 1.0); Document No. 3098/BTTTT-KHCN dated 13/9/2019 of the Ministry of Information and Communications announcing the Vietnam Smart City Index for the period to 2025 (Version 1.0); Document 693/BXD-PTDT dated February 21, 2020 of the Ministry of Construction on the implementation of sustainable smart city development in Vietnam. Resolution No. 52-NQ/TW, dated September 27, 2019, of the Politburo on several guidelines and policies to actively participate in the fourth industrial revolution, has set the goal of forming many smart urban chains in the Northern, Southern and Central key economic regions; step by step connecting with smart city networks and the region and the world. In addition, on January 24, 2022, the Politburo issued Resolution No. 06-NQ/TW on planning, construction, management, and sustainable development of Vietnam's urban areas to 2030, with a vision to 2045. This is the Party's first thematic resolution on urbanization and urban development, which will have a significant and essential role in the country's socio-economic development in the coming time. Moreover, most recently, on November 11, 2022, the Government issued Resolution No. 148/NQ-CP - Action Plan for the implementation of Resolution No. 06-NQ/TW dated January 24, 2022, of the Politburo on planning, construction, management and sustainable development of Vietnam's urban areas to 2030, with a vision to 2045. The Government's action program has set out 33 tasks focusing on five groups of tasks and solutions. First of all, the group of tasks is to raise and unify awareness of the characteristics of the city, the role and position of the city in the common development, and define urban development, including three main pillars: planning, urban construction, and management.

In the field of tourism, the Ministry of Culture, Sports and Tourism has just issued Decision No. 3570/QD-BVHTTDL on the approval of the Project "*Applying Technology of Industry 4.0 to Develop Smart Tourism, Promoting Tourism to Become a Spearhead Economic Sector*". The overall objective of the Project is to apply the technology of the Fourth Industrial Revolution to develop a smart tourism ecosystem in Vietnam, meeting

the increasing needs of tourists in the digital age, supporting the practical connections between state management agencies in charge of tourism, businesses, tourists, and related entities. Smart tourism development ensures professionalism and modernity, meets the requirements of innovation and increasingly effective state management, and improves the development capacity of Vietnam's tourism, making tourism a key economic sector and ensuring sustainable development and international integration. The primary goal by 2025 is to develop a smart tourism ecosystem to ensure uniformity and synchronization in sustainable smart city development. Vietnam prioritizes the development of synchronous smart tourism in provinces and cities: Hanoi, Da Nang, Ho Chi Minh City, Ha Long City (Quang Ninh province), Hue City (Thua Thien Hue province), Da Lat City (Lam Dong), Ha Giang, Quang Tri, An Giang and Kien Giang.

4.2.2. In Hanoi

Hanoi is a city associated with noble titles: Capital of thousands of years of civilization, a city for peace. Hanoi also has a rich and diverse history and cultural heritage foundation, where quality cultural and tourism products are created. The city has promulgated many mechanisms and policies for general cultural development and tourism to meet the increasing demand for enjoyment at home and abroad. On February 22, 2022, the Hanoi Party Committee issued Resolution No. 09-NQ/TU "*On the development of cultural industry in the capital in the period of 2021 - 2025, orientation to 2030, vision to 2045*". One of the views pointed out by the resolution is: "Effectively take advantage of opportunities from international integration, achievements of the 4th Industrial Revolution. Apply the achievements of science, technology, and innovation in order to preserve and promote the values of traditional cultural heritages of the Capital, and at the same time, create new, attractive, and valuable cultural works and fields to meet domestic and foreign market demands, both attracting tourists, international resources, and contributing to handing down to future generations." The goal is that by 2030, Hanoi will maintain stable and sustainable development of industries, including tourism.

The Hanoi People's Committee also issued plan No. 287/KH-UBDN on 31/11/2023 to implement the Government's Resolution 82/NQ-CP, offering solutions to accelerate the recovery and accelerate effective and sustainable tourism development in Hanoi from 2023 to 2025. One of the eight major contents of the plan is to strengthen the digital transformation of the capital's tourism industry, build smart tourism applications, and deploy telecommunications infrastructure and IT application solutions.

The digital transformation and application of technological achievements in tourism are not separated, but on the contrary, always associated with the general development strategy of the city. Plans and resolutions in urban digital transformation or smart city deployment are a premise and imply sustainable tourism development. Hanoi Capital

has also issued many documents on building a smart city model on a citywide scale. At the end of 2017, the Hanoi People's Council approved Resolution No. 11/2017/ NQ-HDND on adjusting the Target Program on IT application in the operation of city-state agencies in the period 2016 – 2020. The resolution stated that Hanoi needs to form a smart operation center and some essential components of smart cities, such as transport, healthcare, tourism, education, etc. The roadmap for building a smart city in Hanoi consists of 3 phases, of which the first phase (2018 – 2020) needs to form cores such as infrastructure, database, e-government, and smart systems in health, education, transportation, tourism, environment. etc. Traffic and tourism are the first two areas Hanoi chooses to deploy in the roadmap towards becoming a smart city.

On 30/12/2022, the Hanoi Party Committee issued Resolution No. 18-NQ/TU on "*Digital transformation, building a smart Hanoi city to 2025, an orientation to 2030*". The resolution sets out the general goal: "By 2025, implement digital transformation to develop the Capital in a smart and modern direction; create conditions for fast, efficient and sustainable economic growth.

4.3. Proposing a smart city governance model in sustainable tourism development in Hanoi

Sustainable tourism is not a new issue for Hanoi but more than ever, the Capital is attaching particular importance to this factor associated with smart urban governance because it is expected to become an attractive destination, catching up with the fourth industrial revolution, and deserves to be the digital tourism center of the region and the whole country. Based on the current situation and development perspectives, the authors propose some models of urban governance in sustainable tourism development in Hanoi.

4.3.1. Smart city governance model

With rapid urbanization, some cities face challenges in designing and developing a better environment. IT has a central role to play in that process. City governments must find ways to bring technology into all aspects of operation and intensive connectivity, using new, advanced, and modern technologies to create a greener metropolis. Smart cities combine digital, green, and knowledge cities, emphasizing civic participation, inclusion, and empowerment. Therefore, the determinants of smart cities are mobility, the establishment of healthcare, entertainment, and education activities to ensure safety, economic development opportunities, and environmental protection. When managing smart cities, it is necessary to pay attention to four main pillars: energy, environment, industry, life, and services. The smart city governance model is expressed as follows:
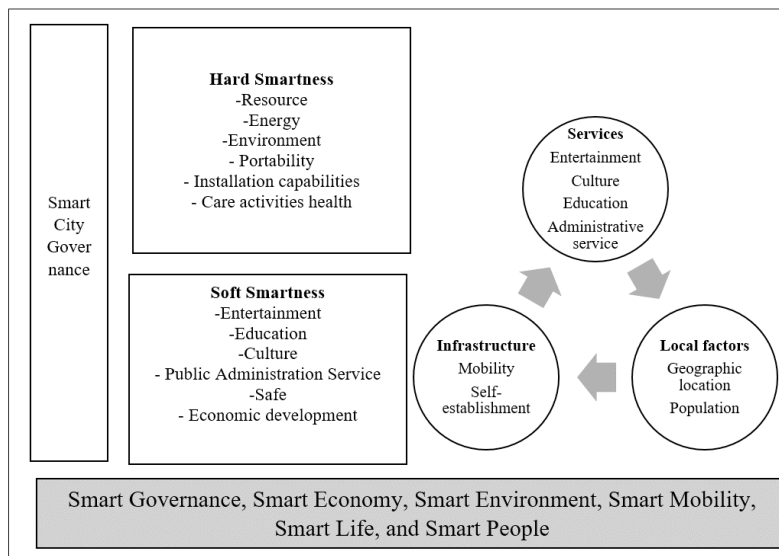
Figure 1. Smart city governance model

The figure above illustrates the three main areas of smart city governance: services and infrastructure that blend with local factors. The standard service domain includes healthcare, entertainment, and educational activities in urban spaces. In this domain. The infrastructure of smart cities needs to use technology that ensures the mobility of information and people, autonomy, and self-establishment, not depending entirely on technology. Infrastructure also addresses social relations and the digital divide and increases the experience and connectivity between the real and virtual, between the present and the past. The design of a smart city depends on many local factors, including geographic location and population density. Therefore, each city has its characteristics and needs the involvement and cohesion of governments, businesses, and citizens.

4.3.2 Smart city governance model in sustainable tourism development

Tourism is a social, cultural, and economic phenomenon involving people's movement to places outside their usual environment for personal or professional purposes. The main purpose of tourism is for cultural immersion. Travelers demonstrate a proactive and active approach to creating experiences when traveling, so their preferences are heterogeneous. Since the emergence of the Internet, it has affected the communication and distribution of tourism products and services. The tourism industry strives to develop e-commerce, virtual reality technology, and efforts to collect and analyze data at one destination to provide richer, more efficient, and sustainable travel experiences. Therefore, when managing tourism in a smart city, it is necessary to define how the expectations and behaviors of tourists will change in stages from before, during, and after tourism.
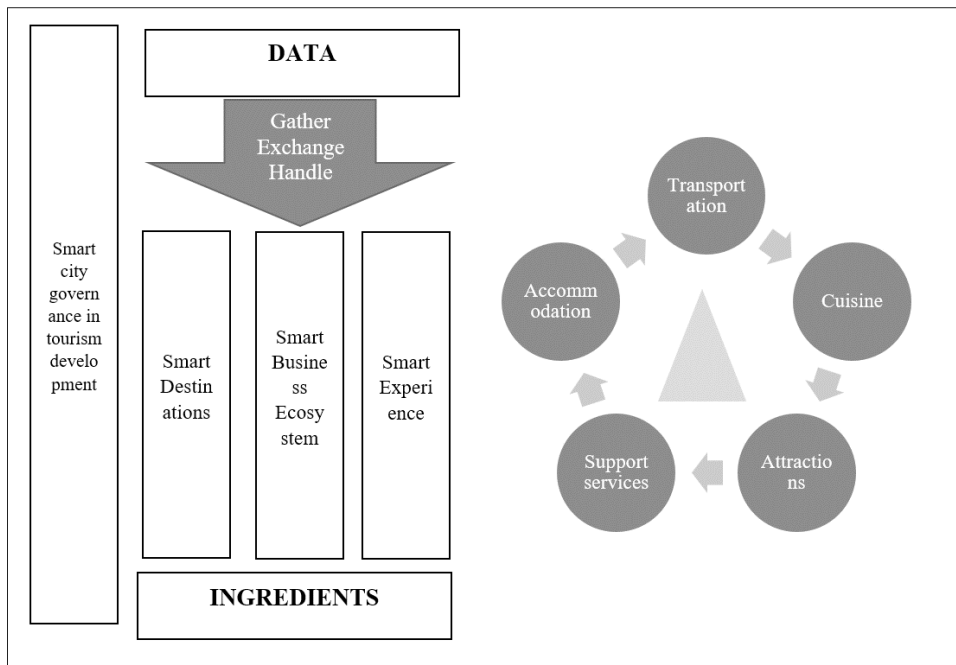
Figure 2. Smart city governance model in tourism development

Source: author team

The database of smart cities for tourism is defined in many ways, focusing on mobility, environmental factors, landscape, culture, and people through activities such as transportation, accommodation, cuisine, attractions, and support services (entertainment, entertainment, shopping, health care,...). Travel experiences are based on business intelligence ecosystems through data sharing among stakeholders, including governments, tourism organizations, locals, tourists, and the environment. The collaboration among stakeholders aims to ensure an enhanced quality of life for local people, enrich the experience of tourists, promote private enterprise, and increase government competitiveness. Most importantly, the municipality needs to provide smart services to visitors in terms of transport, cuisine, accommodation, ancillary services, and attractions throughout three stages: the pre-travel phase (planning), the tourism phase (on-site), and the post-move phase (evaluation). In the pre-travel period (planning), the behavior of choosing a destination, the mode of transportation of tourists, and what keywords they will search for when choosing an accommodation facility. During the (on-site) travel phase, the tourist decides what and where to eat or what activities to participate in. In the post-travel (assessment) period, travelers express how satisfied they are and how they share their feelings in reviews. Advanced technology and smart devices allow governments and businesses to collect this database in real time. From there, helping smart city governance in tourism development and sustainable tourism development be more proactive, personalized, unique, rich, and comprehensive.
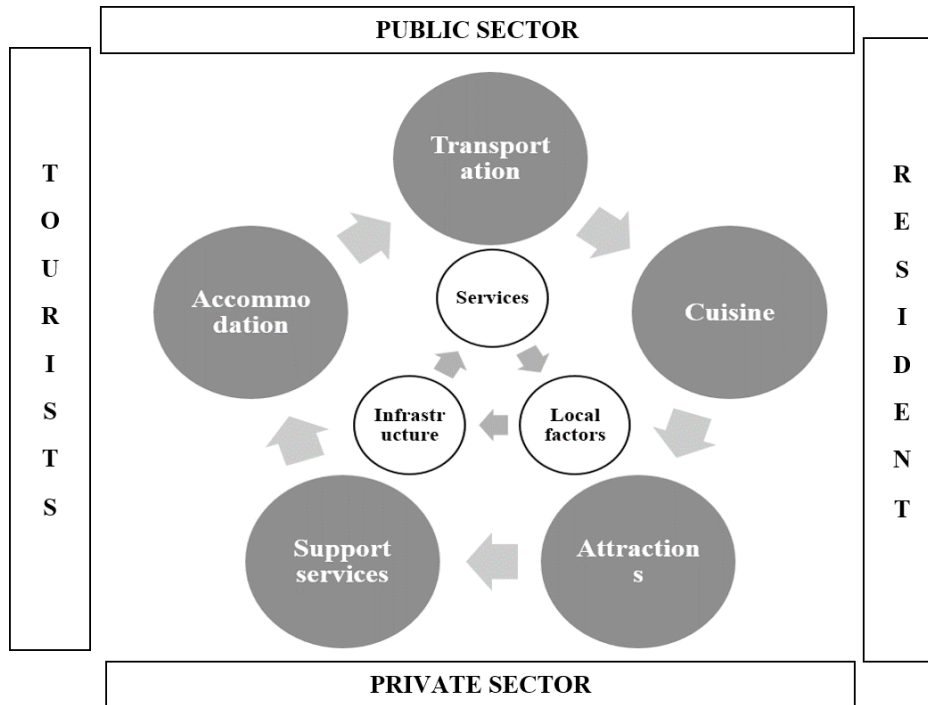
Figure 3. Smart city governance model in development sustainable tourism

Source: author team

The model demonstrates the relationship in data sharing between the public and private sectors. Visitors and residents play an essential role in providing and receiving information. The circular connectivity, the five components of smart tourism, and the three components of smart cities represent the integration of technological components to enhance the capacity and experience of smart tourism in three phases of tourism. Based on smart city aspects (smart governance, smart economy, smart environment, smart mobility, smart life, and smart people), smart cities for sustainable tourism development are realized with the components of the destination, tourism products, and services using virtual reality technology, vehicle tracking system, multilingual application, near field contact card and complaint registration system.

4.3.3 Some issues when smart city governance in sustainable tourism development in Hanoi.

Artificial intelligence, virtual reality technology, and the Internet of Things can cause concerns about tourists' privacy. Authorities need to consider data protection regulations when formulating strategies. Besides, the city faces tourism problems such as over-tourism and inclusive tourism. The growth of tourism can be the cause of environmental damage and socio-cultural problems. Over-tourism occurs when there are too many tourists at a destination, which shifts the balance.

Inclusive tourism practices are also an issue regarding smart city governance in sustainable tourism development. Sustainable tourism must be a driving force for inclusive development, so it is necessary to create favorable conditions for travel and accessibility of all, including the disadvantaged in society, such as people with disabilities, pregnant women, children, and the elderly. Tourism accessibility is a social right for all citizens and should be taken care of by urban authorities. This is also a challenge when developing sustainable tourism in smart cities.

5. CONCLUSIONS

The IT revolution has allowed cities to solve urbanization problems by changing the living environments of people, industries, and management methods. The entire process of environmental restructuring caused by technology, coupled with vast amounts of data, changes the paradigm of the tourism industry. With the tremendous impacts of tourism, cities use modern living environments to achieve competitiveness in the tourism market. The paper proposes a smart tourism urban governance model based on data sharing between the public and private sectors. The components of the city (services, infrastructure, land) are combined with smart tourism (transport, accommodation, gastronomy, attractions and ancillary services). This implementation aims to enhance the smart travel experience in all three phases of travel (before – during – and after). Besides, the article also emphasizes that smart city governance depends heavily on local factors. On the other hand, the downside of smart city development in sustainable tourism is overcrowding and inclusive tourism. The article has partly introduced the characteristics, principles, conditions, and models of smart city governance in sustainable tourism development in Hanoi. Although the study has contributed to a better understanding of smart city governance in sustainable tourism development, the article still has some limitations. First, the components of the smart tourism urban model are designed to focus on factors, not clarifying the roles and functions of each stakeholder, the governance process from planning, organizing, operating, and controlling activities. Secondly, the paper lacks theoretical findings, emphasizes current issues of tourism and sustainability, and proposes a governance model as one of the solutions. The authors need more research to address these limitations to consolidate future empirical and theoretical contributions.

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TECHNOLOGY INTEGRATION
FOR OPERATIONS IN VIETNAM'S 5-STAR HOTELS:
A PATHWAY TO SMART TOURISM

Trần Đức Thành[1], Lê Quang Huy[2]

Abstract: *This study explores the integration of technology in the operations of Vietnam's 5-star hotels through qualitative interviews with managers from 33 luxury hotels, spanning front office, food and beverage, housekeeping, and general management. The findings reveal a dichotomy where some hotels are at the forefront of employing digital solutions to enhance guest experiences, operational efficiency, and sustainability, while others persist with traditional service methods. This research offers comprehensive recommendations for 5-star hotels in Vietnam to harness technology effectively. These include conducting a thorough technology audit, developing an incremental technology integration plan, emphasizing staff training, enhancing guest experiences through digital and smart technologies, prioritizing health and wellness innovations, adopting sustainable technology solutions, improving food safety and quality control with technology, utilizing data analytics for marketing and personalization, fostering continuous innovation, and ensuring robust cybersecurity measures. By adopting these strategies, Vietnam's 5-star hotels can not only enhance their competitive edge but also redefine luxury hospitality in the smart tourism, balancing technological advancements with the personal touch essential to the 5-star experience.*

Keywords: *Technology integration, hotel operation, smart tourism.*

Tóm tắt: *Nghiên cứu nhằm khám phá việc ứng dụng công nghệ vào hoạt động vận hành của các khách sạn 5 sao ở Việt Nam thông qua phỏng vấn định tính với các quản lý từ 33 khách sạn 5 sao, bao gồm bộ phận tiền sảnh, ẩm thực, buồng phòng và quản lý chung. Kết quả cho thấy một sự lưỡng phân nơi một số khách sạn đang dẫn đầu trong việc sử dụng các giải pháp công nghệ số để nâng cao trải nghiệm khách hàng, hiệu quả hoạt động và sự bền vững, trong khi những khách sạn khác vẫn duy trì phương pháp phục vụ truyền thống. Nghiên cứu này cũng đưa ra các khuyến nghị và giải pháp toàn diện cho các khách sạn 5 sao ở Việt Nam để sử dụng công nghệ một cách hiệu quả, bao gồm tiến hành kiểm toán công nghệ kỹ lưỡng, phát triển kế hoạch tích hợp công nghệ từng bước, nhấn mạnh vào đào tạo nhân viên, nâng cao trải nghiệm khách hàng thông qua công nghệ số và thông minh, ưu tiên những đổi mới liên quan đến sức khỏe của khách hàng, áp dụng giải pháp công nghệ bền vững, cải thiện an toàn thực phẩm và kiểm soát chất lượng với công nghệ, sử dụng phân tích dữ liệu cho tiếp thị và cá nhân hóa, thúc đẩy đổi mới liên tục và đảm bảo các biện pháp an ninh mạng mạnh mẽ. Bằng cách áp dụng những chiến lược này, các khách sạn 5 sao ở Việt Nam không chỉ có thể nâng cao lợi thế cạnh tranh của mình mà còn tái định nghĩa sự xa hoa trong ngành khách sạn trong kỷ nguyên du lịch thông minh, cân bằng giữa tiến bộ công nghệ với dấu ấn cá nhân thiết yếu cho trải nghiệm 5 sao.*

Từ khoá: *Ứng dụng công nghệ, vận hành khách sạn, du lịch thông minh.*

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1. INTRODUCTION

The hospitality industry stands at a crossroads of tradition and innovation, where the integration of advanced technologies has become not just a trend, but a necessity to meet the evolving demands of today's travelers. In this dynamic landscape, Vietnam's 5-star hotels embody a particularly intriguing case study, navigating the delicate balance between delivering the luxurious, personalized service their reputation is built upon and embracing the technological advancements that redefine what it means to be a leader in the hospitality sector. This research delves into the heart of this transformation, exploring how Vietnam's premier hotels are adopting technology to enhance operational efficiencies, guest experiences, and sustainability practices. Drawing on insights from industry leaders and academic literature, we examine the pivotal role of technologies such as the Central Reservation Systems (CRS), Property Management Systems (PMS), the Internet of Things (IoT), Artificial Intelligence (AI), and contactless services in shaping the future of luxury hospitality. Through qualitative interviews with managers across Vietnam's 5-star hotel spectrum, this study seeks to illuminate the current state of technology integration, identifying both the strides made and the challenges that lie ahead. In doing so, it aims to provide a comprehensive overview of the technological landscape in Vietnam's luxury hotels, offering recommendations for navigating the digital transformation in a way that upholds the essence of five-star service-personalization, excellence, and a deep commitment to guest satisfaction.

2. THEORETICAL BASIS AND RESEARCH LITERATURE REVIEW

According to Leung (2019), technological advancements have been significantly reshaping the landscape for hospitality businesses, travel agents, and airlines. This transformation is particularly evident in the hotel sector, where user-generated content has been recognized as a valuable asset for enhancing service quality and gaining deeper insights into customer satisfaction (Torres et al., 2015). Moving forward, the integration of new technologies is expected to play a pivotal role in the hospitality industry. Talwar (2012) noted that hotels are increasingly leveraging technology to enhance operational efficiency reduce operational costs, personalize the guest experience, and elevate the level of service provided. The integration of technology within the hospitality industry, particularly through the adoption of Central Reservation Systems (CRS) and Property Management System (PMS), marked a pivotal shift towards modernizing operations and enhancing guest experiences. This evolution, while initially focused on operational efficiency and streamlined booking processes, laid the ground work for a deeper transformation of the sector, influencing everything from guest engagement strategies to the development of new service paradigms. CRS and PMS were note merely technological upgrades; they represented a fundamental change in how hotels approached their business operations. Park & Kim (2003) illustrate how CRS, by digitizing the reservation process, enabled

hotels to reach a global audience, breaking down geographical barriers and opening up new markets. This global connectivity was futher enhances through the integration of CRS with Global Distribution Systems (GDS), allowing real-time inventory management and pricing strategies that dynamically responded to market demand (Ko & Hassim, 2021). On the operational front, PMS provided hotels with an unprecedented level of control and insight into their day-to-day operations. Bardi (2011) detailed how PMS systems integrated various aspects of hotel management, from front desk operations to housekeeping and maintenance, into a cohesive whole. This integration not only improved operational efficiency but also enabled a more personalized guest experience, as staff could access comprehensive guest profiles, including preferences and past interations.

The next period is marked by the rise of smart technologies which signifies a transformative shift towards creating more personalized, efficient, and safe guest experiences. This recent phase, leveraging the Internet of Things (IoT), Artificial Intelligence (AI), and contactless services, illustrates a profound evolution from digital adoption to smart integration. As highlighted by Gretzel et al (2015), these technologies are not merely enhancing operational efficiencies but are also redefining the very essence of guest interactions and services. The Internet of Things (IoT) stands out as a cornerstone of this technological evolution, enabling a level of interconnectivity and convenience previously unimaginable (Turcu & Turcu, 2018). IoT technology in hotels encompasses a wide array of applications, from smart room features like automated climate control and lighting systems that adjust to a guest's preferences, to more complex energy management systems that optimize the hotel's operational efficiency. These smart features not only cater to the growing demand for personalized and seamless experiences but also reflect the industry's commitment to sustainability by reducing energy consumption. Artificial Intelligence and machine learning represent another pivotal aspect of this technological evolution. AI-powered chatbots and virtual assistants have become increasingly common, providing guests with 24/7 access to information and services, from booking inquiries to requests for amenities (Lukanova & Ilieva, 2019). These AI solutions offer a dual benefit: they enhance the guest experience through immediate, personalized interactions, and they streamline hotel operations by automating routine tasks, allowing staff to focus on more complex guest needs. Beyond customer service, AI and machine learning are revolutionizing the way hotels understand and interact with their guests. Through data analysis, these technologies can identify patterns and preferences, enabling hotels to offer personalized recommendations, from dining options to customized room settings. This level of personalization not only elevates the guest experience but also fosters loyalty by making guests feel truly understood and valued. The adoption of contactless technologies has been accelerated by health and safety concerns, highlighting their importance in the current hospitality landscape. Contactless check-in and check-out, mobile keys, and contactless payments are becoming standard offerings, addressing guest concerns

for hygiene while providing unprecedented convenience (Ivanov et al., 2017). These technologies reduce physical interactions and wait times, streamlining the guest journey from arrival to departure. Moreover, contactless service extends into dining and hotel amenities, with QR codes replacing physical menus and enabling guests to order food, book spa appointments, or reserve slots at the gym directly from their smartphones. This shift not only enhances safety and convenience but also provides hotels with valuable data on guest preferences, enabling further personalization of services and offerings.

2.1. Smart tourism

The smart tourism is a multifaceted concept, underpinned by the innovative use of Information and Communication Technologies (ICTs). It encompasses the notion of Smart Destinations, Smart Experiences, and Smart Business, each layer contributing to a holistic smart tourism ecosystem (Figure 1).
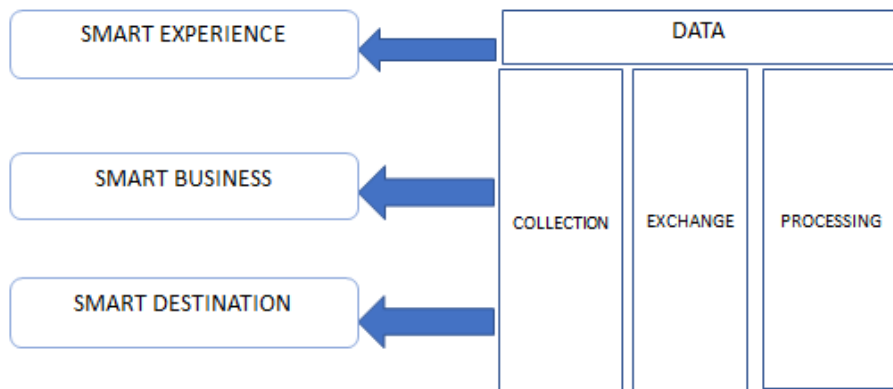
Figure 1: components and layers of smart tourism

Source: Gretzel et al. (2015)

2.1.1. Smart experiences

This dimension of smart tourism emerges from the intersection of ICTs with the tourism experience, as noted by Hunter et al. (2015). It emphasizes the enhancement of the tourism experience through technology, offering personalization, context-awareness, and real-time engagement. According to Buhalis and Amaranggana (2015), and further supported by Neuhofer et al. (2015), the core drivers of smart tourism experiences include the aggregation of information, continuous connectivity, and the synchronization of experiences in real-time. In this model, tourists actively contribute to the creation of their experiences by using digital tools to access, modify, and share information, thereby adding value to their journey. Hanoi's 5-stars hotels are at the forefront of creating smart experiences by utilizing ICTs to offer personalized services and real-time engagement. Through mobile apps and AI, guests can customize their room settings, book services instantly, and receive personalized recommendations for dining and experiences within

and beyond the hotel premises. This level of personalization and context- awareness, supported by continuous connectivity, ensures that tourists actively participare in crafting their experiences, making each stay unique and memorable.

2.1.2. Smart business

This component reflects the intricate ecosystem of businesses that facilitate the exchange of tourism resources and the collaborative creation of tourism experiences. Buhalis and Amaranggana (2014) characterize smart tourism businesses by their network of dynamically connected stakeholders, digitization of primary operations, and the ability to rapidly adapt to change. A unique feature of smart business in the tourism context is the extent of public-private cooperation, driven by government initiatives to offer technology-centric infrastructure and data. Moreover, smart tourism acknowledges the role of consumers as value creators who can also assume business or governance responsibilities. By digitally interconnecting various stakeholders, from suppliers to guests, and digitizing core operations, hotels achieve organizational agility and enhanced service delivery. Public-private partnerships are pivotal in this transformation, with government support in technology infrastructure enabling hotels to innovate and offer sophisticated services. Furthermore, these hotels encourage guests to engage in the co-creation of tourism experiences, turning them into valuable contributors to the tourism ecosystem.

2.1.3. Smart destinations

Inspired by smart city frameworks, smart destinations apply these principles to both urban and rural areas, focusing on enhancing mobility, resource management, sustainability, and the quality of life for both residents and visitors. Lopez de Avila (2015) describes a smart tourism destination as one that leverages cutting-edge technology to ensure the sustainable development of tourist regions, offering accessibility for all. This approach aims to facilitate tourists' interaction with their environment, enriching their experience and simultaneously improving the living conditions of the local population. In Hanoi, 5-star hotels are envolving into smart destinations by incorporating advances technologies that mirror smart city functionalities. This includes the use of IoT to mange resources efficiently, ensuring sustainability while improving the quality of both the visit for tourists and the living standards for local residents. For instance, hotels are integrating systems for smart energy management, waste reduction, and water conservation, thus contributing to the sustainable development of Hanoi's tourist areas and making luxury travel accessible and enjoyable for all visitors.

2.2. Technology applications in 5-star hotel operation

The integration of advanced technologies not only caters to the convenience and personalization of guest experiences but also aligns with the broader objectives of sustainable tourism by promoting environmental responsibility, social equity, and

economic viability. It involves three cateagories of accommodation service, food and beverage service, and additional service.

- Accomodation service

- Smart room automation technologies contribute signigicantly to energy conservation, a core aspects of sustainable tourism. By allowing guests to control lighting, heating, ventilation, and air conditioning (HVAC) systems, hotels can significantly reduce their carbon footprint. Research by Biljana et al. (2016) demonstrates how automated systems can detect unoccupied rooms and adjust settings accordingly, leading to substantial energy savings without compromising guest comfort. This approach not only enhances the guest experience by offering control over their environment but also communicates the hotel's commitment to sustainability. In today's connected world, high-speed Wi-Fi is not just a service; it's a necessity for the modern traveler. Providing robust and reliable internet access throughout the hotel premises ensures that guests can seamlessly stream content, conduct business, or interact on social media without interruption. This connectivity is fundamental to both the leisure and business traveler's experience, making it a critical component of accommodation services. With an increasing focus on wellness in travel, health technologies integrated into guest rooms offer a significant value addition. Features such as air and water purification systems, circadian lighting to improve sleep quality, and in-room fitness options powered by virtual trainers cater to the health-conscious traveler. These technologies not only enhance the guest's physical well-being but also serve as a unique selling point for hotels, emphasizing their commitment to guest health and safety. As highlighted by Shin and Kang (2020), this dual focus on health and sustainability enhances the overall guest experience by aligning with the values of environmentally conscious travelers. The shift towards digital check-in/out and mobile room keys is a testament to the industry's commitment to reducing paper and plastic waste, key components of sustainable tourism practices. This digital transformation, while streamlining operations and enhancing guest convenience, also significantly lowers the hotel's environmental impact by minimizing the use of tangible resources (Adelka et al., 2023). AI-driven smart concierge services take guest personalization to the next level. From making dining reservations and booking tours to offering personalized recommendations based on the guest's preferences and past behavior, smart concierge services ensure that each guest's needs and desires are anticipated and met with precision. This technology fosters a deeper connection between the hotel and its guests, creating memorable, customized experiences that encourage loyalty and repeat visits.

- *Food and beverage services.* The implementation of digital menus, web-based ordering platforms, and mobile payment options has revolutionized the dining experience, making the process of ordering and paying more streamlined, quick, and user-friendly (Sarkar et al., 2014). These innovations support contactless transactions, responding to increased emplasis on hygeneand safety in the aftermath of the pandemic. By enabling customers to order and

pay without physical contact, restaurants are meeting the new standards of service expected by today's diners. The integration of IoT technology within kitchen environments is enhacing appliances monitor the performance of kitchen equipment, regulate energy consumption, and maintain optimal food storage conditions through automatic temperature adjustments. This automation not only ensures a high level of food safety but also contributes to a more sustainable and waste-reduced operation. The AI also contributes in quality checking, ensuring that input materials always meet the highest standard. Augmented Reality (AR) is transforming the traditional menu into an interactive exploration tool. Diners can use their smartphones to scan QR codes and view dishes in 3D, providing a realistic preview that aids in decision-making (Leung and Loo, 2020). This immersive approach not only elevates the dining experience but also supports restaurants in showcasing their offerings more effectively, potentially increasing sales and guest satisfaction.

- *Additional services:* The integration of cutting-edge technologies into the ancillary services of hospitality, such as spa and massage services, swimming pools, and laundry services, significantly elevates the guest experience while enhancing operational efficiencies. Online booking systems for spa and massage appointments exemplify the convenience and personalization modern guests demand, allowing them to tailor their experiences to their schedules and preferences with ease. The advent of Virtual Reality (VR) and Augmented Reality (AR) technologies further enriches this customization, offering guests immersive previews of spa facilities and treatments, thus enhancing anticipation and satisfaction. For swimming pools, the deployment of IoT sensors for automated water quality management and smart heating systems underscores the industry's commitment to guest safety and comfort (Wan and Zulkifli, 2021). These systems not only ensure optimal water conditions but also adapt heating based on external factors, promoting energy conservation. In the realm of laundry services, the application of RFID technology revolutionizes garment tracking, providing a seamless and error-free process from collection to delivery, thereby bolstering guest trust and streamlining operations (Hussin et al., 2022). Together, these technological implementations showcase a profound shift towards a more efficient, personalized, and environmentally conscious approach to hospitality management, setting a new standard for luxury and convenience in the sector.

2.3. Current status of 5-star hotels in Vietnam

Table 1 reflects a significant concentration in areas with robust tourist infrastructures, such as Ha Noi and Quang Ninh in the North, known for their historical and natural attractions. The central region shows a high density of luxury properties in Da Nang, Quang Nam, and particularly in Khanh Hoa, with its 40 high-end hotels underscoring Nha Trang's status as a premier beach resort city. This distribution is indicative of a mature hospitality market catering to international tourists seeking both cultural depth and seaside relaxation. In contrast, the southern region demonstrates economic influence correlating with luxury

accommodations, with Ho Chi Minh City leading as a commercial hub and Kien Giang, home to the idyllic Phu Quoc island, following closely. These areas likely see a mix of business and leisure travelers demanding upscale lodging options. The presence of only a handful of 5-star hotels in several other provinces suggests potential growth areas for luxury tourism. It highlights a disparity in economic development or a strategic choice to develop alternative tourism sectors less reliant on luxury accommodations. This uneven distribution presents a dual-sided scenario: while well-developed regions may face increased competition and market saturation, less saturated areas might offer new frontiers for luxury hospitality development, spurred by growing infrastructure and emerging tourist attractions.

Table 1: 5-star hotels allocation in Vietnam

Province/City	Number of 5-star hotels	Province/City	Number of 5-star hotels	Province/City	Number of 5-star hotels
North of Vietnam		*Middle of Vietnam*		*South of Vietnam*	
Ha Noi	16	Thanh Hoa	3	Binh Duong	1
Quang Ninh	16	Nghe An	4	Vung Tau	10
Hai Phong	7	Ha Tinh	2	Dong Nai	1
Lai Chau	1	Quang Binh	3	Ho Chi Minh	24
Ha Nam	2	Thua T Hue	7	Kien Giang	21
Bac Ninh	3	Dac Lac	1	Can Tho	3
Ninh Binh	1	Lam Dong	7	Ca Mau	1
Vinh phuc	3	Da Nang	23	Ben Tre	1
Lao Cai	6	Quang Nam	15	Ty Ninh	1
Lang Son	2	Binh Dinh	1	**Total**	**63**
Son La	1	Phu Yen	2		
Phu Tho	1	Khanh Hoa	40		
Total	59	Binh Thuan	4		
		Total	112		

Source: vietnamtourism.gov.vn

3. DATA AND RESEARCH METHODS

To conduct research on the integrating technology for enhanced operations in Vietnam's 5-star hotels, the authors used a qualitative research method, including 14 interview questions for managers working at 99 5-star hotels spread from the North to the South of Vietnam. The purpose was to identify the capability of applying technology in the operations of those hotel brands. Representing the 99 5-star hotels were 99 respondents to the interviews, who are managers of the front office, food and beverage, housekeeping department, and hotel general managers. The interview environment was completely in accordance with the conditions and regulations of the qualitative interview. The results of the interviews were fully and faithfully recorded, and the information obtained will be fully noted the serve the research content of the article.

4. RESEARCH RESULTS

4.1. Descriptive statistics of the research

The questions for hotel general managers/ department managers of 5-star hotels in Vietnam are divided into two parts, with the first part aim at collecting basic information from the participants, and the second part aimed at gathering extended opinions from the participants on three main factors in this article: technology application in: accommodation services; food and beverage services, and additional services. Additionally, this sevtion of the questions encourages participants to provide extended comments including evaluations and opinions to identify the current state of integrating technology in the hotels. The information is presented in Vietnamese and adheres to translation principles. The results of the first part of the interview are presented in Table 1- Demographic descriptive statistics.

Table 1: Demegraphic descriptive statistics

Category and Classification		Number of respondents	Percentage (%)
Gender	Male	66	66.7%
	Female	33	33.3%
Years of experience	2-5 years	28	28.3%
	6-10 years	31	31.3%
	11 years and above	40	40.4%
Number of employees	300-350 individuals	56	56.6%
	350-400 individuals	21	21.2%
	400-450 individuals	22	22.2%
Location	North of Vietnam	40	40.4%
	Middle of Vietnam	30	30.3%
	South of Vietnam	29	29.3%
Job position	General manager	37	37.4%
	Front office manager	30	30.3%
	Food and beverage manager	20	20.2%
	Housekeeping manager	12	12.1%

Source: Author own source

The interview results from hotel general managers, front desk managers, and those in charge of food and beverage and additional services reveal a gender imbalance, with two-thirds of the interviewees being male and only one-third female. This discrepancy arises because management positions are predominantly held by men, whereas women managers are primarily found in housekeeping. Additionally, the experience level of respondents skews towards highly experienced professionals, with over 40% having more than 11 years of experience. This suggests that the research will benefit from a deep well of industry

knowledge, potentially offering insightful reflections on the integration of technology within the hotel sector. The hotels represented mostly have a workforce ranging from 300 to 350 employees, accounting for over 56% of the sample, and are evenly spread across Vietnam's North, Central, and South regions, with a slight concentration of more than 40 hotels in the North. In terms of job roles among the interviewees, more than 37% were hotel general managers, followed by 30% front office managers, 20% food and beverage managers, and 12% housekeeping managers. This distribution highlights an emphasis on gathering a broad range of perspectives that influence the hotel's overall operations and business strategy rather than focusing on specific departmental functions.

4.2. Result of technology integration in accommodation service

The collated responses from various hotel management roles regarding the technology application in accommodation services of Vietnam's 5-star hotels offer a multifaceted view of the current state of technological adoption and its impact on hotel operations and guest experiences. Starting with Wifi quality, the answer ranging from "very good" to "stable," it appears that the hotel's WiFi system is generally meeting or exceeding the expectations for a significant majority of guests. The positive responses span different management perspectives, from the general manager to the functional managers of front office, food and beverage, and housekeeping, which implies a consensus on the service quality across different departments. An interesting note is the acknowledgment that satisfaction may dip depending on user load, but even then, the satisfaction rate remains high, with over 80% of guests being content. This indicates an awareness of potential scalability issues, yet a high overall performance. A score of "8/10" and terms such as "stable" and "good" align with an image of reliable service, though the singular responses of "ok" and "quite ok" highlight that there is room for improvement in some areas or perhaps during peak usage times. The exceptional ratings of "excellent" reflect instances of outstanding service, which could be pivotal in enhancing guest experience and setting the hotel apart in a competitive market. The input from various managerial roles also implies that the WiFi service's quality is likely to have a broad impact on the hotel's operations, affecting not just guest satisfaction but also the efficiency of day-to-day management tasks and the overall service delivery. These insights can be particularly valuable for continuous improvement and for maintaining the hotel's standing as a technologically leader in the hospitality industry. In the realm of smart health technologies in hotel guest rooms, responses reveal a dichotomy in the adoption of these innovations. A number of hotels are leveraging advanced systems, such as air conditioners with integrated air filtration capabilities and ozone air purifiers, to enhance the health and comfort of their guests. This demonstrates a forward-thinking approach to guest wellness, with an emphasis on creating an environment that actively contributes to the well-being of the occupants by ensuring cleaner air, which is particularly beneficial for those with

respiratory sensitivities or health-conscious travellers. In addition, the incorporation of technologies such as dehumidifiers alongside air purifiers indicates a holistic approach to maintaining optimal indoor air quality. This not only addresses the purity of the air but also its humidity levels, which is crucial in a tropical climate like Vietnam's, where excessive moisture can lead to discomfort and health issues. However, the repeated indication of "not yet applied" suggests a significant portion of the surveyed hotels have not integrated these smart health technologies into their guest rooms. This could point to various inhibitors, such as financial limitations, lack of awareness, or prioritization of other investments. For these hotels, the data serves as a benchmark, highlighting a potential area for enhancement that could appeal to health-focused guests and offer a competitive advantage in the hospitality market. A few responses denote the use of both air and water purification systems, reflecting a comprehensive approach to environmental health within the guest rooms. This level of commitment to guest health is indicative of a broader trend in the hospitality industry, where guest wellness is increasingly becoming a priority. The mention of a temperature-sensing air conditioning system further suggests that some hotels are not only focusing on air quality but are also employing technology to improve overall guest comfort and energy efficiency. Smart climate control can significantly enhance a guest's stay by maintaining a comfortable environment and demonstrates an investment in resource management and modern amenities. The responses to the question about check-in/check-out procedures indicate that the majority of the hotels have not fully integrated smart technologies into their check-in/check-out processes. Most respondents indicate that these activities are conducted through the reception department and adhere to standard hotel procedures, suggesting a traditional approach that likely involves face-to-face interaction and possibly manual data entry or paper forms. A few responses point towards a nascent adoption of technology-driven solutions: one mentions a mobile app feature for check-out, and another describes the use of face ID technology for check-in and check-out. The mention of "Deploy online and offline" suggests that at least one respondent's hotel offers both traditional and digital methods, providing some flexibility in how guests interact with the check-in/check-out process. However, the overwhelming consistency in answers related to traditional reception-based procedures suggests that there is considerable room for technological advancement in the check-in/check-out processes across these hotels. The apparent lack of widespread adoption of digital and self-service options — such as kiosks, mobile app-based services, or biometric verification — points to a significant opportunity for these hotels to modernize their operations. Such an update could not only improve efficiency and guest satisfaction but also align with the increasing global trend towards contactless services and smart hospitality solutions. Room control technologies in guest rooms show a clear division in the adoption of such technologies among the surveyed hotels. A portion of the respondents indicates that their hotels have embraced smart control systems, with multiple respondents

specifying the use of a tablet to manage various room functions like lighting, air conditioning, sound, and curtains. This suggests a move towards integrated room automation systems that offer guests a high level of convenience and control, aligning with contemporary trends in smart hospitality. Conversely, a significant number of respondents report that their hotels have not yet applied these smart technologies, implying a more traditional approach to room controls or possibly a phased plan for future technology upgrades. The presence of physical controls and manual adjustment buttons, as reported by several other respondents, reflects a more conventional system that may lack the streamlined efficiency and modern appeal of tablet-based or centralized control panels. In summary, while there is an evident trend towards adopting smart room technology in some of the surveyed hotels, a sizable proportion have not yet implemented these features. The varying degrees of technological integration point to diverse guest experiences and operational practices within the luxury hotel segment, with some establishments potentially offering a more cutting-edge experience than others. This variation presents an opportunity for differentiation in the market, as well as an indication of the sector's transition towards smart technology solutions. Regarding to the question about enhancing personalized guest experiences through smart assistance services reveal that the majority of hotels still rely on traditional methods, such as providing brochures and utilizing concierge or reception staff support. This indicates a prevalent use of conventional hospitality practices to inform guests about dining, entertainment, and scenic spots. However, there is an emerging trend of digitalization among some respondents: one mentions an email sent before arrival with instructions to download the hotel's app, which suggests an effort to streamline guests' experiences and provide information digitally. Additionally, the utilization of QR codes by some guests for accessing information reflects an adoption of technology to enhance the guest experience, though it seems to be less widespread. A touch screen in the lobby for quick information search, as mentioned by one respondent, points to an interactive and possibly more engaging way to assist guests, although this appears to be an isolated instance rather than a common practice. Overall, the responses suggest that while there is some movement towards integrating smart technologies to personalize guest services, the majority of hotels have not fully transitioned away from traditional methods. Combining these insights, it becomes evident that the accommodation services in Vietnam's 5-star hotels are at various stages of technological integration. While there are instances of forward-thinking adoption that enhances operations and guest experiences, a considerable portion of the sector remains anchored in traditional practices. The impact of technology on hotel operations and guest experiences thus appears to be two-fold: for some, it offers a competitive edge and aligns with smart tourism trends, while for others, it represents untapped potential and a pathway for future development. This landscape suggests a pivotal moment for the industry, with opportunities for growth and enhancement in guest service delivery through increased technology adoption.

4.3. Result of technology integration in food and beverage service

Concerning technology application in the food and beverage services of Vietnam's 5-star hotels, the interview responses suggest a selective embrace of digital advancements. The digitization of menu information in food service areas reveal a significant stride towards modernizing guest interactions. The majority of the respondents have adopted QR code systems, allowing guests to access the menu and place orders using their own mobile devices. This transition to QR codes signifies an effort to cater to the growing demand for contactless services, which has been further accelerated by health and safety considerations in the wake of the pandemic. Notably, several hotels have taken digitization a step further by providing tablets for guests, which could offer a more integrated dining experience and potentially feature a broader range of services than a simple menu. However, there remains a substantial portion of respondents who indicate that such digital innovations have not yet been applied in their establishments. This resistance or delay in adopting digital menu solutions points to a divide within the industry, with some restaurants fully embracing the efficiency and safety of digitized information, while others continue to rely on traditional methods. This variation presents an opportunity for differentiation and highlights a potential area for growth and improvement in enhancing the guest dining experience. The uniformity in responses pointing to the non-utilization of virtual reality (VR) technology within the food and beverage services of Vietnam's 5-star hotels is quite telling. It signals a widespread hesitation or lack of priority in integrating this cutting-edge technology into the guest dining experience. While VR is known for its potential to create engaging, immersive experiences, its application in the hospitality industry, particularly in Vietnam, appears to be in its nascent stages, if considered at all. This gap in VR adoption could be attributed to a variety of factors. The cost and complexity of implementing VR, the training required for staff, and the return on investment are likely significant considerations. Moreover, the traditional nature of dining experiences, which are inherently social and sensory, might be seen as incompatible with the isolating aspects of VR technology. Hotels may also question the added value of VR to the guest experience, especially if their customer base has not expressed a demand for such innovations. Furthermore, the absence of VR in enhancing food and beverage services may also reflect a strategic focus on other areas deemed more essential to guest satisfaction, such as the quality of the food, the ambiance of the dining setting, or the personal touch provided by staff interactions. It suggests that hotels are perhaps concentrating on refining these core aspects rather than venturing into relatively uncharted territories like VR, which represents a significant departure from conventional hospitality practices. While VR holds promise for creating novel experiences in the hospitality sector, its adoption within Vietnam's 5-star hotels, specifically in food and beverage services, remains virtually absent. This points to a cautious approach to technology adoption in an industry where personal

interaction and traditional values are still highly prized. As consumer preferences evolve and the technology becomes more accessible, hotels may reconsider the role of VR in creating unique and memorable guest experiences. The collective responses from the interviewed hotels about the quality of food ingredient processing in their kitchens uniformly reflect a dedication to traditional, manual checks and verifications. Despite the absence of technology in these processes, the stringent adherence to food safety and hygiene standards, verified by requiring suppliers to provide invoices and certificates, reflects a conventional approach that values human oversight and established protocols. While this methodical human-centered approach may be effective in ensuring the quality and safety of food ingredients, the complete lack of mention of technological tools or systems suggests a notable gap in the adoption of digital innovations in the kitchen. In an era where many industries are leveraging technology for quality control—such as sensor-based systems for temperature and freshness monitoring, or AI-driven platforms for inventory management—the responses suggest that these hotels have yet to explore or invest in such advancements. This absence of technology application in food ingredient quality control could be due to various factors, such as budget constraints, a lack of technological infrastructure, or a preference for the perceived reliability of human checks. However, it also highlights a potential area for technological investment that could lead to enhanced efficiency, cost savings, and potentially even greater accuracy in quality control measures. The consistency across all respondents indicates a sector-wide trend of maintaining traditional practices in the face of technological possibilities. It suggests that while the rest of the hospitality industry might be moving towards integrating smart solutions for enhancing guest experiences, the back-end processes, particularly in food service, remain grounded in manual methods. As consumer expectations evolve and the benefits of technology in food safety become more pronounced, these hotels may need to reconsider their current practices to stay competitive and meet the increasing demand for transparency and innovation in food services. The collected answers indicates a significant lean towards the adoption of online payment methods compared to cash payments in the hotel industry. The higher percentages, notably in the 80% to 98% range, suggest that the majority of transactions are being conducted through digital platforms like Apple Pay, Samsung Pay, e-wallets, and bank transfers. This trend could be indicative of a customer base that is tech-savvy and prefers the convenience and security offered by digital payments. On the other hand, the responses that hover around the 50% mark and the "over 50%" responses imply that while there is a substantial adoption of digital payments, a considerable portion of transactions still rely on cash. This could reflect a diversity in guest preferences or a transitional phase towards full digital adoption. It is also possible that these hotels cater to a demographic that is either less familiar with online payments or prefers the tangibility of cash. The presence of "over 80%" responses points to a strong push by some hotels to encourage cashless transactions, which could be motivated by the

lower costs and increased efficiency associated with handling digital payments. Additionally, the digitalization of payments can offer richer data analytics, enabling hotels to better understand spending patterns and tailor their services accordingly. The shift towards digital payments in Vietnam's 5-star hotels is apparent and aligns with global digital trends, enhancing operational efficiency and meeting the expectations of modern travelers. The variance in adoption levels presents both opportunities for further innovation in the payment process and challenges to ensure inclusivity for all guests regardless of their payment preferences. In synthesis, the capability of technology application in Vietnam's 5-star hotel food and beverage services appears to be in a state of progressive evolution. Digital menus and payment methods are widely adopted, enhancing operational efficiency and aligning with contemporary guest expectations. Yet, there's a cautious approach towards more avant-garde technologies like VR and automated quality control systems, reflecting a careful consideration of their added value to the fundamental dining experience. As the industry moves forward, the challenge and opportunity will lie in integrating technologies that complement and enhance the traditional strengths of hospitality, while also opening new avenues for innovation and guest satisfaction.

4.4. Result of technology integration in additional service

The state of technology application in the additional services of Vietnam's 5-star hotels reveals a complex picture. In the realm of spa and massage services, there is a notable reticence to integrate advanced technologies. Most hotels cling to traditional service paradigms that emphasize human touch and a personal approach, which are indeed central to the ethos of relaxation and personal care. Only a minority have adopted technologies such as automatic scent machines, suggesting at least some recognition of the potential for technology to enhance the guest experience by engaging multiple senses without detracting from the core human elements of the service. When it comes to maintaining swimming pools and water heating systems, the responses are split. While a subset of hotels have embraced integrated and thermal sensors to regulate temperature and ensure guest comfort, a significant portion have yet to apply such technologies. This dichotomy shows a division between hotels moving towards automated, efficient operational management and those maintaining traditional maintenance methods. The use of smart sensors in some hotels likely contributes to a more consistent and controlled environment, enhancing guest comfort and potentially extending swimming opportunities across seasons. The survey also highlights a consistent application of high-quality cleaning and disinfection technology in laundry services across the board. This universal adoption reflects a sector-wide commitment to standards of cleanliness and hygiene, a priority that has likely been underscored by the COVID-19 pandemic. The use of such technology ensures a high throughput of laundry processing with reliable performance, which is essential in high-capacity luxury hotels. It also plays a crucial role in guest reassurance, underpinning the trust in the hotel's operational

hygiene and safety standards. In contrast, the use of technology to support customer bookings is varied. A number of hotels have implemented chatbot technology, utilizing these tools to provide efficient and responsive customer service. Chatbots in mobile apps represent a strategic move towards digitization, aiming to streamline processes such as tour bookings, airline tickets, and event registrations. Yet, the majority of hotels still rely on traditional, reception-based guest support. This suggests either a strategic decision to prioritize the personal interaction provided by hotel staff or a slower pace of technological adoption, possibly due to budget constraints, skepticism about the return on investment, or a lack of technical expertise. The overall impact of technology on hotel operations and guest experience is multifaceted. Where it has been adopted, technology offers increased efficiency, better resource management, and enhanced guest satisfaction through timely service and convenience. However, the varied level of adoption also points to opportunities for growth. Hotels that have not yet embraced these technological tools may find themselves at a competitive disadvantage, especially as guest expectations continue to shift towards more digital and autonomous services. In summary, the additional services offered by Vietnam's 5-star hotels show a selective approach to technology integration. On the one hand, there is a clear benefit from the use of technology in laundry and some aspects of guest service automation. On the other hand, the preservation of traditional service methods, particularly in spa and guest booking services, may reflect a strategic choice or a latent potential for technological advancement. As the industry evolves, a balance between maintaining the high-touch aspect of luxury service and embracing the efficiency and personalization afforded by technology will be key to meeting guest expectations and enhancing overall service quality.

5. DISCUSS RESEARCH RESULT, SOLUTIONS AND RECOMMENDATIONS

In the rapidly evolving landscape of Vietnam's 5-star hospitality sector, the imperative to integrate cutting-edge technology harmoniously with the highest standards of guest service is paramount. Initiating with a comprehensive technology audit paves the way for a strategic overhaul, ensuring that each facet of hotel operations undergoes meticulous scrutiny to identify technological gaps and opportunities for significant enhancements. This foundational audit will also serve as a benchmark against industry standards and leading competitors, positioning the hotel to ascertain its standing within the broader technological ecosystem. Advancing from this groundwork, a carefully structured incremental technology integration plan must be charted. This plan will outline a step-by-step approach to adopting new technologies, with a clear prioritization of domains where the impact on guest experience and operational efficiency is most pronounced. Immediate 'quick wins' such as upgrading WiFi infrastructure to state-of-the-art standards and embracing a suite of digital payment options can offer swift, tangible improvements to both guest satisfaction and the bottom line. Recognizing that technology is as effective as the proficiency of those who wield it, a robust

staff training program is essential. Such programs will ensure that all hotel personnel are adept and comfortable with the nuances of new technological tools, fostering a workforce that is both skilled and adaptable. To complement this, a comprehensive change management strategy will be indispensable to mitigate resistance, engendering a culture that not only adapts to but also champions innovation. The guest experience stands to be substantially enriched through the deployment of mobile app features that confer unprecedented control over room settings, reservations, check-ins/outs, and access to a digital concierge, effectively placing the reins of personalization in the hands of each guest. Further enhancement can be achieved by integrating smart room features like voice-controlled devices, tailored to remember and respond to individual guest preferences, thereby deepening the personal touch that is synonymous with luxury hospitality. Health and wellness, increasingly at the forefront of guest expectations, necessitate the exploration and incorporation of advanced air and water purification systems within guest rooms, bolstering the hotel's commitment to providing a sanctuary of well-being. The spa experience too can be reimagined with ambient control systems that meticulously adjust lighting, sound, and scent, crafting an immersive environment that caters to the senses and aligns with the serene essence of spa services. Sustainability, an ever-critical consideration, commands the adoption of energy management systems and technologies that underscore sustainable practices. These not only alleviate the hotel's carbon footprint and operational costs but also resonate with the growing demographic of eco-conscious travelers. In the critical realm of food safety and quality control, the leverage of sensor-based technologies for real-time monitoring, and inventory management systems ensures the integrity of food preparation, upholding the highest standards of safety and reducing waste. The marketing and personalization strategies can be transformed with data analytics, extracting actionable insights into guest preferences, and driving targeted digital marketing efforts that speak directly to the individual needs and desires of each guest. Establishing a continuous innovation and feedback loop will enable the hotel to stay agile, regularly updating technology offerings based on constructive feedback from guests and staff and keeping pace with emergent hospitality trends. Partnerships with seasoned technology providers will yield customized solutions seamlessly integrated into existing hotel operations, potentially also engaging with tech startups in pilot programs to stay at the forefront of innovation. Lastly, but most crucially, the entire technological framework must be underpinned by rigorous risk management and cybersecurity protocols, ensuring the sanctity and privacy of guest data while fostering a secure digital environment.

In synthesizing these comprehensive solutions and recommendations, Vietnam's 5-star hotels can harness the full potential of technology, not as an end in itself but as a means to amplify the quintessence of hospitality—personalized, memorable, and effortlessly luxurious guest experiences, all undergirded by efficient, seamless, and environmentally responsible operations

6. CONCLUSION

In conclusion, the research into the integration of technology in Vietnam's 5-star hotels operation has illuminated a varied landscape where some hotels are pioneering in their adoption of digital solutions, while others maintain traditional service methods. The strategic implementation of technology, from enhancing WiFi and payment systems to the deployment of smart room automation and health technologies, not only meets the current demands of guests for efficiency and personalization but also sets a new bar for industry excellence. The recommendations put forth, based on a comprehensive technology audit and an incremental integration plan, emphasize a holistic approach that encompasses staff training, guest experience enhancement, and sustainability. These recommendations are not just pathways to elevate operational proficiency but also to enrich the guest experience in every aspect—from the ambience of the room to the quality of the food and the ease of service interactions. Furthermore, the continuous feedback loop and partnerships with tech providers will ensure that hotels remain agile and responsive to the rapidly evolving tech landscape. Cybersecurity measures are underscored as paramount, ensuring the protection of guest data and the hotel's reputation. The shift towards technology in the hospitality sector is an inevitable response to a world where digital and smart solutions are becoming the norm. Hotels that can navigate this shift effectively will not only stay competitive but will redefine the benchmarks for luxury, comfort, and convenience. The balance between leveraging technology and retaining the personal touch that is the hallmark of 5-star service will be the key to success. This balance will ensure that guests enjoy the best of both worlds—cutting-edge innovation and the warm, personalized service that makes their stay unforgettable. The research insights and subsequent recommendations serve as a guide for Vietnam's 5-star hotels as they stride into the future of hospitality, combining tradition with innovation to create unparalleled guest experiences.

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APPLYING 4.0 TECHNOLOGY IN RECRUITMENT, TRAINING AND DEVELOPING VIETNAM HOTEL HUMAN RESOURCES

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Abstract: *In the rapidly changing landscape of the global hospitality industry, integrating 4.0 technologies has become a necessity for hotels seeking to stay competitive. This research investigates the application of Industry 4.0 in human resource management within the hotel sector, focusing specifically on areas such as recruitment, training, performance evaluation, and personnel development. By conducting in-depth interviews with human resource directors from various hotels across different regions and star ratings in Vietnam, this study aims to assess the current state of 4.0 technologies implementation in human resource practices. The research aims to identify challenges and opportunities faced by hotels and proposes strategies to guide the Vietnamese hotel industry in effectively and sustainably adopting these advanced technologies.*

Keywords: *4.0 technology, development, hotel human resources.*

Tóm tắt: *Trong bối cảnh ngành du lịch đang phát triển nhanh chóng toàn cầu, việc tích hợp các công nghệ 4.0 trở nên quan trọng đối với khách sạn để duy trì sự cạnh tranh. Nghiên cứu này tập trung vào ứng dụng của công nghệ 4.0 trong quản lý nhân sự tại các khách sạn, đặc biệt là trong quá trình tuyển dụng, đào tạo, đánh giá hiệu suất và phát triển nhân sự. Thông qua cuộc phỏng vấn sâu rộng với các giám đốc nhân sự từ nhiều khách sạn ở Việt Nam, nghiên cứu này nhằm đánh giá tình trạng hiện tại của việc triển khai công nghệ 4.0 trong các phương thức quản lý nhân sự. Nghiên cứu xác định những thách thức và cơ hội mà các khách sạn đang phải đối mặt, đồng thời đề xuất chiến lược để hướng dẫn ngành công nghiệp khách sạn Việt Nam tiếp cận một cách hiệu quả và bền vững nhất với những công nghệ tiên tiến này.*

Từ khóa: *Công nghệ 4.0, phát triển, nhân sự khách sạn.*

1. INTRODUCTION

The digitization of human resource management in the hospitality industry represents a critical intersection of technology and human capital management, reflecting broader shifts in the global business environment. As the hospitality sector grapples with the dual challenges of an increasingly competitive landscape and the imperative for sustainable practices, the role of digital human resource management becomes pivotal in driving innovation, efficiency, and resilience. This study is grounded in the context of the fourth industrial revolution, or 4.0 technologies, which heralds a paradigm shift in how businesses

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operate, leveraging technologies such as the internet of things, artificial intelligence, big data analytics, and robotics to revolutionize various aspects of their operations.

In the hospitality industry, these technological advancements have profound implications for human resource management practices. The traditional human resource management framework, characterized by manual processes and face-to-face interactions, is undergoing a transformative shift towards digitalization. This transition not only enhances operational efficiency but also plays a crucial role in attracting and retaining talent, optimizing resource allocation, and improving the overall guest experience. By integrating digital technologies into human resource management practices, hotels can streamline recruitment processes, offer more engaging and effective training programs, conduct more precise performance evaluations, and foster career development in ways that were previously unattainable.

This paper provides an in-depth analysis of how the application of 4.0 technologies is reshaping human resource management in the hospitality sector. Through qualitative research involving interviews with human resource directors from various hotels across Vietnam, the study uncovers the tangible benefits and challenges associated with digital human resource management. The findings reveal that while the adoption of digital technologies in human resource management practices offers significant advantages in terms of cost savings, efficiency gains, and enhanced decision-making capabilities, it also poses challenges related to technology adoption, workforce adaptation, and the need for continuous innovation.

Moreover, the research highlights the importance of a strategic approach to digital human resource management, emphasizing the need for hotels to not only invest in technology but also in building a culture of innovation and learning. This involves rethinking traditional human resource management practices, developing new skill sets among human resource management professionals, and fostering an environment that encourages experimentation and adaptation to technological changes. The digitization of human resource management in the hospitality industry is not just a trend but a strategic imperative that holds the key to unlocking new levels of efficiency, employee engagement, and guest satisfaction. As the industry continues to navigate the challenges and opportunities presented by 4.0 technologies, the insights from this study offer valuable guidance for hotels seeking to leverage digital human resource management as a catalyst for transformation and competitive advantage.

2. THEORETICAL BASIS AND RESEARCH LITERATURE REVIEW

Nowadays, new applications are constantly being developed to meet the rapidly growing demands in various business sectors as well as in daily life (Jatobá et al., 2019). The digitization effect is at the forefront of attention in every corner of each industry, and

human resource management in hospitality is not exempt from this trend. Numerous research studies indicate that the application of new technologies or digitization extends beyond individual enterprise levels; it also caters to multinational corporations, large enterprises, and even governments worldwide (Alam et al., 2020). This trend aims to accelerate information processing, enhance user-friendliness, and notably, provide effective support for managers in making quick and informed decisions (Berhil, Benlahmar and Labani, 2019). Digitization, or the integration of technology into practical applications, is expanding its impact across all aspects of organizations. Therefore, understanding and embracing the concept, as well as applying it to the digitization of human resource management, becomes extremely crucial and requires the allocation of various resources. The intricate connection between the application of advanced technologies to organizational functions and human resource management is evident in specific areas such as recruitment, training, and team development (El Hajal and Rowson, 2020).

2.1. 4.0 technology revolution

4.0 industry is a term that combines concepts such as cyber-physical systems, the internet of things. Advanced technologies include 3D printing, artificial intelligence, big data, biotechnology or genetics and agricultural innovation, blockchain, desalination and improved waste management, e-commerce, financial technology, the internet of things, nanotechnology, renewable energy, robotics, shared economies, smart cities, and virtual or augmented reality (Bilgin Sarı, 2018). Studies in literature combined with the context of 4.0 industry are increasingly capturing attention within the service sector. Smart work and digitization are also becoming integral components of service-oriented enterprises. Each customer is unique, and it is the responsibility of service providers to deliver tailored services. 4.0 technological advancements are expected to support this endeavor (Shamim *et al.*, 2017) the service sector is understudied, and it is also facing the challenges of mass customization, digital enhancement, smart work environment, and efficient supply chain. The aim of this study is to fill this research gap by exploring the issues of Industry 4.0 in the service sector, with cases in the hospitality industry. All the challenges of Industry 4.0 require continuous innovation and learning, which is dependent on people and the enterprise's capabilities. Appropriate management approaches can play a vital role in the development of dynamic capabilities, and an effective learning and innovation environment. This paper proposes a framework of management practices which can promote the environment of innovation and learning in an organization, and hence facilitate business to match the pace of Industry 4.0 by facilitating technology acceptance e.g., digital enhancements and implementation of cyber physical systems (CPS).

2.2. Applying 4.0 technologies in hospitality industry

With the rise of information technology, visitors can now conduct various hotel-related tasks, such as check-in and room access using a digital key, all through their

smartphones, eliminating the need for direct human interaction. The progress in robot technology enables robotic bellboys to handle guests' luggage, and orders placed through mobile devices can be prepared and served by robotic waiters. It's noteworthy that guests are not expected to provide tips for these services. In addition to hardware technology, addressing the emerging trends shaping travel and tourism processes, guests now share their experiences in hotel pools, post photos and videos of the sea on social media accounts, rate hotels and restaurants, and document travel memories in blogs. These trends encompass technology, big data, social media, online communities, and the shared economy, altering the preferences and experiences of tourists (Bilgin Sarı, 2018). Furthermore, software applications play a crucial role in addressing diverse hotel needs. These applications range from individual packages catering to specific business activities to comprehensive systems that facilitate information storage, management, and sharing across various departments and branches. They encompass general tools like word processors and specialized ones like financial analysis tools, accounting software, personal productivity applications, contact managers, diaries, organization-level productivity management, reference software, tax preparation, legal software, online information sources, workgroup software applications, information sharing within networked environments, customer relationship management systems, and programming tools and utilities, including antivirus applications. Continuous advancements in hardware and software applications have increasingly empowered organizations to efficiently manage larger volumes of data at faster speeds and handle more intricate algorithms. These advancements have allowed organizations to digitally centralize the distinct business units that oversee the entire entity. (Cerović, 2013)

2.3. Human resource management in the hotel sector

In the classical economic literature, the economy is traditionally characterized by four essential factors of production: entrepreneurs, labor, capital, and natural resources. Generally, organizational management activities are classified into five main functions, encompassing planning, organizing, directing, controlling, and employing. Historically, individuals were treated akin to "serfs," seen as extensions of machinery, with their psychological needs often overlooked. However, the terminology "employee" underwent a shift in meaning starting from the 1930s. Responding to factors like intensified global competition, the growing significance of knowledge, and the focus on innovation, corporations have adopted a variety of strategies. Conceptually, "human resources" is defined as individuals working for an organization, contributing their knowledge, skills, and abilities to the organization's overall functioning (Biliavska, Castanho and Vulevic, 2022). According to Betts, 2020, the functions within human resource management in the hotel sector cover a diverse set of responsibilities. A key element is the assessment of staffing needs for recruiting and training highly skilled professionals. This includes guaranteeing their optimal performance, handling performance-related issues, and

ensuring adherence to various regulations in personnel and management practices. Furthermore, these activities involve the supervision of approaches to employee benefits and compensation in the hospitality industry, as well as the management of employee records and the implementation of personnel policies (Betts, 2020).

2.4. Digital human resource management in hospitality industry

Digital human resource management methods are recognized as the most effective strategy for environmental performance initiatives, offering significant support in fostering environmentally friendly practices within the hotel industry. These innovative and eco-friendly HRM practices lead to cost reductions, enhanced operational efficiencies, and heightened employee satisfaction and engagement. Collectively, these benefits contribute to waste reduction for companies in the hotel industry (Abdelaal, Musthafa and Halid, 2022). Before technology became widely adopted, human resource management consumed significant resources of hotel. For instance, recruiting for a position required human resource departments to prepare numerous documents for printing, not to mention the considerable time spent on execution. From posting recruitment notices in newspapers to waiting for candidates to submit resumes, the process posed risks such as losing documents, which could be a significant concern for both recruiters and applicants during the application process (Halid, Yusoff and Somu, 2020). Additionally, human resource departments need to consider creating a simple and accessible working environment for new employees or the cost of training existing personnel. Implementing these tasks can be challenging, especially in the hotel industry where operations are shift-based, and training sessions often require repeated efforts for the same content, resulting in inefficiencies. Another challenge for the human resource department is evaluating and monitoring individual performance, which heavily relies on the observations of department managers. Therefore, they invest a considerable amount of effort and time in carrying out these tasks (Abdelaal, Musthafa and Halid, 2022).

2.5. Recruitment

One of the most effective tasks when applying digitalization to human resource management is recruitment. Companies and organizations recognize the advantages such as cost, time, and efficiency gained by incorporating technology into the recruitment process instead of traditional methods. The significant benefits have been promptly adopted and integrated into the human resource management department's operations. This includes applying technology to design recruitment posters and efficiently accessing platforms to recruit for various positions within the company. Through various tools and websites, companies can search for numerous potential candidates at minimal cost, allowing for multiple reuse without additional expenses (Oncioiu *et al.*, 2022). Furthermore, the rapid

reception of information is ensured via email, online interviews, and online assessments. This not only demonstrates the professionalism of the company but also facilitates a more efficient and less time-consuming process compared to traditional methods, which are more costly and demanding for both parties (Yurcu, 2017).

2.6. Training

Employee training stands as a pivotal duty within every company or organization, gaining heightened significance in the context of hotels due to its profound impact on reshaping employee behavior, enhancing knowledge, and improving job performance. The training process caters to providing hands-on skills for lower-level staff, while for mid-level or high-level managers, it serves as a platform for fostering managerial acumen. The overarching goal is to help employees understand their roles comprehensively, foster career development, and prepare them for potential managerial responsibilities in the future (Cmrp, 2012). Leveraging technology enhances the efficiency of training and developing human resources in the hotel industry for the human resource department. Accessing new knowledge and skills is facilitated through direct online training or video reviews, promoting flexibility in learning anytime, anywhere, resulting in time and cost savings (Dyachenko *et al.*, 2016).

2.7. Performance evaluation and career development

Workforce monitoring and evaluation are regularly updated, providing convenient tracking for both employees and managers. Furthermore, the objective assessment and rapid adaptation of workforce selection, training, and development, along with leadership skills, are informed by real-time feedback from customers through social media and websites. Moreover, digital career management provides advantages, including streamlined access to comprehensive databases, efficient data organization, large-scale data storage capabilities, diverse process execution, improved consistency and reliability in data interpretation, and swift report generation based on data. In computer and internet-based software, staff's knowledge and competence gaps can be pinpointed through tests related to their career choices. Consequently, materials addressing identified inadequacies are privately shared with staff, offering support for their career development (Yurcu, 2017).

3. RESEARCH METHODS

The research method used in this article is qualitative. The author team selected 30 hotel directors and human resource managers in Vietnam to interview about content related to the application of 4.0 technologies in recruitment, training and development of hotel human resources. To gather information, the authors designed 11 direct interview questions for participants involved in recruitment, training, performance evaluation, and development activities at hotels in Vietnam when applying 4.0 technologies to these operations.

The interview sample was selected from provinces and cities such as Hanoi, Saigon and Nha Trang, where tourism conditions are developed. The total number of interview samples representing hotels from 1 star to 3 stars is 10 directors and human resource managers; 4-star hotel has 10 directors and human resource managers; 5-star hotel has 10 directors and human resource managers. The authors attempted to create an interview environment that complied with the conditions and regulations of qualitative interviews. All responses were recorded in their entirety with the participants' consent. The process of connecting and interviewing human resource directors took approximately three weeks, with each interview lasting between 45 to 50 minutes. Finally, the authors compiled and analyzed the information in an excel file.

4. RESEARCH RESULTS

4.1. Descriptive statistics of the research

The research team employed a qualitative research method on a representative sample of 30 hotels located in major cities of Vietnam, namely Hanoi, Nha Trang, and Ho Chi Minh City. The selection of the sample included hotels from the Northern, Central, and Southern regions to provide comprehensive insights into the overall content of hotels. Additionally, hotels across different star ratings, including 1 to 3 stars, 4 stars, and 5 stars, were chosen to present a holistic view for researching hotels in Vietnam. After the collection, synthesis, and analysis of recorded interview segments, the research team obtained valuable information to support the execution of the article.

Specifically, out of the 30 human resource directors who participated in the responses, 17 were male, constituting 56.67%, and 13 were female, making up 43.33%. The gender ratio was relatively balanced, providing objective information for the research. Human resource directors were distributed across regions, with 10 individuals from hotels in Hanoi, 10 from Nha Trang, and 10 from Ho Chi Minh City. Regarding the star ratings, 9 hotels (30%) were in the 1 to 3-star category, 11 hotels (36.67%) were 4-star, and 10 hotels (33.33%) were 5-star.

In terms of experience factors gathered from working hours information, almost all survey participants had extensive experience in the industry. Specifically, among the human resource directors, those with less than 5 years of experience accounted for 3.33%, individuals with 6 to 10 years of experience were 26.67%, the majority had 11 to 15 years of experience in hotels, constituting 36.67%, and those with over 16 years of experience were 33.33%. Based on the interview information, it can be concluded that human resource managers consistently emphasize the importance of experience and expertise due to the inherent connection between their roles and the people within the organizational framework. This strongly reflects the significance of the responsibilities undertaken by this department (Table 1).

Table 1: Descriptive statistics of the research sample

Classification criteria		Number of participants	Percentage (%)
Gender	Male	17	53.3%
	Female	13	46.67%
Work experience	Less than 5 years	1	3.33%
	6 to 10 years	8	26.67%
	11 to 15 years	11	36.67%
	More than 16 years	10	33.33%
Location	Ha Noi	10	33.33%
	Nha Trang	10	33.33%
	Ho Chi Minh City	10	33.33%
Hotel star classification	1 to 3 star	9	30%
	4 star	11	36.67%
	5 star	10	33.33%

Source: Interview data from participants

4.2. Statistical analysis of interview results

By integrating 4.0 technologies into the recruitment processes of hotels, all human resource directors affirm that this innovative approach enhances efficiency and facilitates rapid time savings compared to traditional methods. Up to 90% of human resource directors provide applications of 4.0 technologies in recruitment, such as utilizing job posting websites, creating content on social media for dissemination, designing software for candidates to submit resumes and take entrance exams, conducting online interviews through supported technology platforms, utilizing online platforms of recruiting agencies, and designing short images and videos to introduce available positions. The majority of hotels benefiting from the application of 4.0 technologies in recruitment are found in the mid-range and upscale segments. Conversely, a few hotels in the lowest segment have not adopted many technologies due to financial constraints, and employees in these hotels often have multitasking responsibilities, making it challenging to demand specialization in each task.

Furthermore, the intense competition among higher-end segment hotels significantly impacts the inefficient operations of lower-segment hotels. Another aspect of incorporating 4.0 technologies into recruitment is the uneven proficiency in technology usage among personnel. Up to 60% of human resource directors express that the number of dedicated staff for recruitment tasks is insufficient, with many being employees from other departments, such as information technology or marketing. This figure rises to 90% in lower-rated hotels, where entire human resource teams are responsible for both recruitment and handling customer inquiries for room bookings. Often, these staff members concurrently serve in roles like front desk supervisors or hotel managers. On the

other hand, the utilization of databases to store recruitment information in hotels has not been implemented thoroughly. Most human resource directors share that their hotels only use free tools such as google drive, outlook, and some software like Smile. Currently, there is no synchronized plan for securely protecting all data, and incidents of data loss due to lack of security or scattered storage locations are still prevalent.

From a different perspective, the integration of 4.0 technologies into recruitment processes has helped human resource departments significantly reduce costs related to printing documents and save time. This includes time spent on preparation, conducting interviews, and communicating information to candidates. Some hotels have successfully reduced human resource staff by utilizing candidate curriculum vitae management software, scheduling automatic email appointments, conducting online interviews, and sending results via email or social media applications such as zalo and facebook. Even for lower-rated hotels, the application of technology has made recruitment easier and faster, providing access to more suitable candidates for job positions. Simple actions like posting introductory images and creating job position descriptions when starting work, or producing short films about the hotel for candidates to understand the environment and facilities better, contribute to a more visual perspective for candidates when applying to hotels. However, human resource directors also emphasize that without careful consideration, the application of 4.0 technologies can lead to wastage and incur additional recruitment costs without achieving the desired efficiency. Therefore, the specialized team needs proper training and guidance on the mindset and flexible implementation of 4.0 technology in recruitment.

In the context of training hotel personnel, the application of 4.0 technologies seems to bring a breath of fresh air to efficiency, as evidenced by over 75% of human resource directors in hotels sharing that the effectiveness has increased significantly compared to manual methods in the past. Human resource directors believe that leveraging technology helps create e-learning modules with visually appealing content through images and short videos, enabling learners to easily access all processes. Furthermore, having technology facilitates much more optimal training schedule arrangements, especially for the hotel industry with specific shift hours, making it challenging to conduct simultaneous training. The application of technology has effectively addressed this issue. Contents can be recorded and sent to each employee for them to review at their leisure. On the other hand, the human resource department can organize online training sessions, allowing employees to proactively manage their time, and with just a phone and headphones, they can learn from anywhere. Five-star hotels have applications where they upload educational content online, enabling employees to easily search for information and lessons quickly. Another significant advantage of integrating 4.0 technologies into training activities is the rapid and accurate transmission and assessment of information. Even hotels can track which

employees have participated in courses or studied through emails, internal attendance apps, and quick quizzes after each training session. This aids in significantly improving the training outcomes. In this regard, 3, 4, and 5-star hotels demonstrate a highly professional approach. However, hotels with lower star ratings seem to lag behind in fully harnessing the advantages of integrating 4.0 technologies into training activities. Nearly 60% of lower-rated hotels still maintain on-the-job training directly through supervisors. Despite the efforts of hotel leadership to establish rules and distribute information via hotel groups or email for employees to access and read, the subpar skills and awareness of the staff in these hotels have hindered achieving optimal effectiveness as expected.

Software applications commonly used by hotels include presentation software, online meetings, online training (E-learning, polycam), communication software for exchanging training information (zalo, viber, facebook messenger, etc.), websites containing industry-specific knowledge (HotelJob.com, etc.), short film platforms (youtube, tiktok, etc.), and virtual reality simulating processes or handling situations. In general, hotel directors recognize the importance and the need to focus additional resources in terms of time, manpower, and equipment to effectively implement 4.0 technologies into training activities. This is crucial to avoid falling behind in the rapid development cycle of technology.

Finally, in the personnel assessment and development activities, the use of 4.0 technologies also holds great potential for enhancing the competitive advantage of high-quality human resource development for hotels. Through discussions in interviews, nearly all HR directors expressed the opinion that overseeing human resource management requires a significant amount of time and poses numerous challenges because each individual has different circumstances, perspectives, and experiences, making it impossible to evaluate uniformly. However, with technology, this challenging task is significantly alleviated. For example, the traditional method of recording employee attendance involved maintaining a manual log for each staff member, and if lost, it was challenging to recreate accurately. Nowadays, human resource managers can employ fingerprint recognition time clocks, facial recognition devices, or recording devices to easily monitor the work hours of all employees. Additionally, tracking daily tasks of employees through department head reports or shift managers, which used to be subjective, can now be evaluated directly on software systems and task management applications (hotel management software like Smile, Opera, performance measurement applications - KPI, etc.).

An exceptionally effective and swift approach facilitated by technology is customer feedback. In the past, collecting customer opinions required human resource directors to invest significant time in coordination with various departments, with limited positive outcomes. With the integration of 4.0 technologies, specifically hotel applications and online customer support channels, the influx of feedback on the hotel's service quality has seen a rapid surge. Additionally, the rise of community groups, social media platforms

(facebook, tiktok, zalo, etc.), and third-party websites (Tripadvisor, Booking, Agoda, etc.) dedicated to reviewing and evaluating hotel services has enabled hotels to receive timely information and make accurate assessments of both outstanding and error-prone staff.

Despite the numerous benefits derived from employing 4.0 technologies for workforce evaluation and development, human resource directors acknowledge that not all hotel employees are content with the human resource department's approach. This sentiment is particularly pronounced among older employees who may resist change and exhibit a discomfort with technology. They find it challenging to adapt to evaluation software and may be reluctant to learn new usage methods. This challenge is more prevalent in lower-rated hotels where the skill set and awareness of the staff are more restricted. Additionally, human resource leaders highlight various limitations and difficulties in implementing 4.0 technologies, such as substantial initial investment costs, the necessity for personnel capable of using these applications and technologies, uneven skill levels among the workforce, unfavorable employee attitudes, entrenched habits and practices of long-term employees affecting others, and a minority of employees attempting fraudulent behavior during assessments. Furthermore, the continuous flux in the workforce poses a significant challenge for human resource teams, considering the labor-intensive nature of hotel industry jobs.

5. DISCUSS RESEARCH RESULT, SOLUTIONS AND RECOMMENDATIONS

Through interviews with human resource directors from hotels across the three regions of Northern, Central, and Southern Vietnam, spanning a range of star ratings from 1 to 5, our research team has proposed tailored solutions applicable to the entire hotel industry for integrating 4.0 technologies into recruitment, training, evaluation, and workforce development practices. Given the prevailing scarcity of labor resources in the tourism and hotel industry, the accurate selection of personnel into organizations remains a critical priority for managers. The research team observes that the implementation of 4.0 technologies applications in recruitment has significantly reduced workload and saved both time and costs for hotels. Nevertheless, it is noted that hotels still lack a specialized workforce with knowledge and skills in utilizing technology applications for recruitment, preventing delays reliant on other departments. Therefore, setting higher requirements for human resource specialists is imperative, coupled with an emphasis on enhancing benefits for human resource staff to attract high-quality personnel.

Additionally, constructing a database to enhance the security and facilitate information retrieval for the human resoure department requires proper and efficient investment. Hotels can invest in building data management systems on the cloud or through software with sufficient memory to support their operations. Hotels with limited budgets can opt to develop databases using free software and create backup plans on computers (word, excel, etc.). Another point that can help hotels save costs is exploring new Industry 4.0

technology applications in their operations. For instance, integrating artificial intelligence into recruitment processes, creating job descriptions, utilizing applications for image creation, and implementing shortcuts for hotel introductions are potential areas for innovation. Furthermore, adopting optimized human resource management software that is user-friendly and convenient for both users and candidates submitting curriculum vitaes to the hotel can contribute to cost savings.

In the context of training employees in the hotel sector, the adoption of 4.0 technologies has proven to be significantly advantageous. However, without close monitoring, there are still gaps where training remains merely formal, falling short of desired outcomes. Specifically, challenges arise from the attitudes and mindsets of employees, leading to resistance that undermines the overall efficacy of training programs. To tackle these challenges, the authors propose targeted remedies. During the recruitment phase, the human resoure department should meticulously delineate specific criteria encompassing qualities, attitudes, and skills relevant to all positions within the hotel. Moreover, throughout an employee's tenure at the hotel, the HR department should formulate a clear-cut career advancement trajectory, elucidating the benefits and responsibilities associated with higher-tier roles. This strategic approach aims to mitigate issues related to employee mindset and attitude, fostering a more impactful and purpose-driven training framework.

Subsequently, specific training proposals are presented for each requirement corresponding to various positions in the employee career ladder. For instance, an employee aspiring to become a team leader needs to grasp fundamental vocational skills, exhibit effective communication with customers and colleagues, demonstrate responsibility towards peers, and be willing to acquire new knowledge, etc. Therefore, when they seek to advance in their career, they understand the necessity of additional training and skill development. Furthermore, modifying training content in alignment with emerging technologies can enhance the appeal to learners. For example, incorporating practical processes into virtual reality or engaging in artificial intelligence-driven virtual customer interactions. The issues of time management and personalized training programs should also be carefully considered. The human resources department should establish a specific training schedule based on the real-time development of each individual, avoiding indiscriminate training that lacks targeted outcomes or does not align with the preferences of the workforce.

The final solution addresses the issues of testing, monitoring, and developing the workforce. With the rapid advancement of Industry 4.0, older or less-educated workers may struggle to quickly adapt to using technological tools in their tasks. However, failing to adopt technology may expose hotels to various disadvantages, such as inefficiency and slow development. Therefore, the proposed solution involves recruiting young and tech-savvy candidates. Following that, it recommends transitioning or terminating employees

who cannot meet the basic job requirements to expedite the development of comprehensive skills, monitoring, and establishing a clear career progression path for employees. Additionally, emphasis is placed on enhancing further training for individuals who have not yet grasped technology. During supervisory training and evaluation, guidance and constructive feedback are consistently provided to employees. This approach allows them to sense the hotel's commitment, encouraging their effort to strive for additional learning and improvement to enhance the quality of customer service.

6. CONCLUSION

In summary, the integration of 4.0 technologies into the recruitment, training, evaluation, and development processes within the hotel industry signifies a transformative shift, bringing about significant impacts. Through in-depth interviews with human resource directors from diverse hotels across various regions of Vietnam, we gained nuanced insights into the challenges and opportunities associated with the adoption of these advanced technologies.

Recruitment Process: The incorporation of 4.0 technologies into the recruitment process has yielded notable improvements, optimizing operations, saving time, and reducing costs. However, a critical aspect to consider is the necessity for a professional workforce with knowledge and skills in utilizing these technologies. This emphasizes the importance of setting higher standards for human resource specialists and enhancing incentives for staff involved in human resource activities.

Training Programs: While integrating 4.0 technologies into training has produced positive results, challenges such as resistance to change, particularly among older or less tech-savvy employees, still persist. Establishing clear career pathways and developing training programs aligned with technological advancements is crucial. Personalized and periodic training, coupled with advanced technologies, can enhance employee interest and information retention.

Employee Assessment and Development: Regarding employee assessment and development, 4.0 technologies significantly contributes to monitoring and evaluating performance. However, challenges stemming from a diverse workforce in terms of age and technological literacy require appropriate strategies. Initiatives like recruiting tech-savvy individuals, transitioning, or terminating employees who cannot meet basic job requirements play a crucial role. Strengthening training for individuals struggling with technology is also essential. In the training, supervision, and evaluation processes, guidance and constructive feedback foster employee perception of the hotel's care and motivate them to strive for continuous improvement in customer service quality.

In overall, successfully integrating 4.0 technologies into the hotel industry demands a comprehensive approach and an optimized strategy. Addressing challenges in recruitment, training, evaluation, and development through the synergy of technological applications and people-focused innovations will position hotels firmly for sustainable success.

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CONDITIONS FOR BUILDING A SMART TOURISM DESTINATION IN VIETNAM IN THE CURRENT CONTEXT OF DIGITALIZATION

Hà Văn Sỹ[1], Phạm Thị Mai Liên[2]

Abtract: *In the Industrial Revolution 4.0, building a smart tourism destination is the goal for the tourism industry of countries around the world in general and in Vietnam in particular. "Smart Travel Destinations" is used to describe the growing dependence of destinations and tourists on new forms of information and communication technology; allowing a large amount of data to be used to add value to visitors, providing high quality tourism services with the best experience and utilities. Therefore, to achieve this target, Necessary conditions to help the destination become a smart tourism destination are the content that the article aims to, thereby contributing to clarifying the inevitable change/development of the industry and each field of tourism activities in the context of digital transformation today.*

Keyword: *Smart travel destination; smart tourism.*

Tóm tắt: *Xây dựng điểm đến du lịch thông minh trong thời kỳ Cách mạng công nghiệp 4.0 là mục tiêu quan trọng của ngành du lịch các nước trên thế giới nói chung và Việt Nam nói riêng. "Điểm đến du lịch thông minh" được sử dụng để mô tả sự phụ thuộc ngày càng tăng của điểm đến và khách du lịch vào các hình thức công nghệ thông tin và truyền thông mới; cho phép sử dụng lượng lớn dữ liệu để gia tăng giá trị cho du khách, cung cấp dịch vụ du lịch chất lượng cao với trải nghiệm và tiện ích tốt nhất. Vì vậy, để đạt được mục tiêu này, phải có những điều kiện cần thiết để giúp điểm đến trở thành điểm đến du lịch thông minh là nội dung mà bài viết hướng tới, từ đó góp phần làm rõ sự thay đổi/phát triển tất yếu của ngành và từng lĩnh vực hoạt động du lịch ở nước ta trong bối cảnh chuyển đổi số ngày nay.*

Từ khóa: *Điểm đến du lịch thông minh; du lịch thông minh.*

1. INTRODUCTION

The Industrial Revolution 4.0 is having a strong impact on all aspects of social life and economic sectors, which is also affecting tourist destinations. Increasing competition towards globalization, population growth, workplace shifts and innovation in technology are putting pressure on travel destinations. To improve tourism competitiveness at an international level, destinations around the world are becoming more and more "smart". Digital transformation is an inevitable trend and a priority orientation for global tourism, smart tourism that is currently being successfully implemented in many countries.

Smart technologies are crucial to developing better experiences in a smart travel

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destination and these applications play a crucial role in the process of building a smart tourism destination in order to improve the quality of tourism services, develop sustainable tourism, thereby developing a smart tourism ecosystem for Vietnam's tourism. Therefore, smart tourism has been a necessary issue to bring the best experience to tourists, bringing the effectiveness of destination marketing and tourism businesses in a positive way. However, research topics on smart tourism destinations and smart tourism applications are still not many, therefore, in the content of the article, the author focuses on researching the conditions for building a smart tourism destination, looking for optimal solutions in the process of building a smart tourism destination using applications of smart travel.

2. LITERATURE REVIEW

Currently, the concept of a smart travel destination is mentioned by many researchers and authors at different angles, namely: Spain's Institute for the Development of Innovation (SEGITTUR) 2015 together with the National Agency for Standardization (AENOR). According to the organization, the smart tourism destination is "an innovative tourism area that is accessible to everyone and built on modern technological infrastructure, ensuring the sustainable development of the territory, facilitating the interaction of visitors and their integration with the surrounding environment, improve the quality of their experience in destinations and people's quality of life."

According to Jovicic (2019), A smart travel destination is a geographical space where there is an interweaving of reality and digital in which knowledge and information are accessible to all stakeholders, enabling continuous innovation in performance and operations; enable better collaboration between travel agencies and travelers who can exchange information/knowledge with a higher level of understanding and socialization, increasing travel demand and seeking personalized experiences.

According to Boes and Buhalis (2016), Smart travel destinations are understood where there is a tourism infrastructure that delivers smart experience values, personalized experiences made possible using technological tools to provide smart services.

According to Sebrae (2016), Smart destinations are different from conventional destinations in that they are invested towards integrated governance, sustainable development, applying smart management of resources, easy accessibility, high competitiveness.

3. RESEARCH METHODOLOGY

This article uses the main research methodology which is the qualitative method. Synthesis of documents, analysis of secondary data, descriptive statistics, such as books, articles, domestic and foreign publications will be synthesized, analyzed and selected the

contents related to the research issue.

4. RESEARCH RESUTLS

4.1. Conditions for building a smart tourism destination

First, institutions and policies are very important factors to open, pave roads and create favorable conditions for technology application and innovation in the tourism sector, ensuring green growth and sustainable development. Develop the digital data system in the tourism sector, expand the database system of the tourism industry to ensure synchronization, connection and communication from the central to local levels, standardize data, identity system associated with management objects

Second, investment in technical infrastructure associated with Information Technology

+ Building the necessary digital infrastructure to support smart tourism, including: investing in the internet, wiffie, electronic devices ...; Tourist attractions must have good infrastructure, adequate housing, utilities and entertainment services;

+ Building appropriate platforms for digital data sharing, applying technology applications and using modern equipment, global information and data, ensuring low cost, safety and convenience to create many new attractive tourism products, stimulating sustainable tourism growth and development.

+ Building modern transportation systems, unique and attractive tourism resources.

Third, it is necessary to improve the quality of tourist destination facilities Allow all visitors to access and all areas with friendly public transport with roads, elevators for wheelchairs, strollers, including people with disabilities, using many different languages, for domestic and foreign tourists to experience the features of technology that can use smart access.

Fourth, smart Human Resources focus on improving skills and fostering new knowledge in a comprehensive, adaptable and "smarter" way to serve tourists to increase the experience and satisfaction, synchronization of digital technology and innovation to equip appropriate competencies. Building a team of human resources working for smart tourism destinations must be able to flexibly meet the technology sector in tourism, proficiently use many technology applications and software, be able to guide tourists to connect, search for tourist information data sources full of new fast utilities.

Fifth, travel resources are the constituent elements of the attractiveness of a tourist destination. Tourism resources need to be exploited and used optimally and effectively. At the same time, it is necessary to protect, preserve and embellish these resources, thereby aiming for sustainable use of resources.

4.2. Current situation of smart tourism destination development in Vietnam today

According to the General Statistics Office, international visitors to Vietnam in 2022 would reach about 3,661 million arrivals, of which visitors from Asia accounted for a large number reaching nearly 3 million arrivals. In 2022, arrivals by air reached 3.277 million, accounting for 89.5% of international arrivals to Vietnam and 29.5 times higher than the previous year; by road reached 381,900 arrivals, accounting for 10.4% and 8.4 times; by sea reached 3,100 arrivals, accounting for 0.1% and 5.1 times; Arrivals from Asia reached 2.595 million, 19.5 times higher than the previous year; visitors from Europe reached 508,400 arrivals, 31.8 times higher; Arrivals from the Americas reached 388,900, 67.6 times higher. Although the number of international visitors has not reached the set target of 5 million. The tourism industry focuses on promoting smart tourism, developing tourism towards green growth.

According to the Vietnam E-commerce Index 2022 report, Internet banking accounted for 86% of the surveyed businesses, followed by payment cards and e-wallets also accounted for 20% of the total surveyed businesses.

The tourism industry implements the Project: "Sustainable development of sea and island tourism to 2023, vision to 2045"; Project: "Building a national database on tourism" to develop, promulgate regulations and guide the application of a number of new economic models in the field of tourism: Sharing economy, circular economy, night tourism economy... The tourism industry focuses on promoting tourism digital transformation, developing a smart tourism ecosystem, promoting tourism development in the media with digital technology platforms.

Ho Chi Minh City has applied smart tourism software on Android and ISO platforms, deploying the application of 3D technology in tourism promotion information 2023.

According to statistics from the Hanoi Department of Tourism, in 2022, the total number of tourists to Hanoi reached 18.7 million, up 4.7 times compared to 2021, equal to 64.7% of the number of visitors in 2019; The number of international visitors reached 1.5 million. In Q1/2023, the total number of tourists to Hanoi will reach 5.88 million, up 2 times over the same period in 2022, international visitors to Hanoi will reach 978.9 thousand visitors. From the beginning of 2023, the database software of the whole tourism industry will be put into operation, Hanoi: The application of smart tourism portal with a data system of more than 300 tourist attractions in the area has been unified and linked together, standardizing the content of explanations with 6 languages: Vietnamese, English, French, Chinese, Japanese, Korean.

Da Nang has introduced VR360 virtual reality application "One station to Da Nang" for visitors to experience and explore famous daimyo here with automatic explanations in English - Vietnamese, 360-degree images....

In addition to the achieved results, the development of Vietnam's tourism has not been adequate, it also encounters difficulties and inadequacies, and its competitiveness is still modest compared to other countries in the region and the world. The reason is that resources are still limited, awareness of the role of tourism is still inadequate, the link between local ministries and agencies is still not synchronous and coordinated closely. Digital transformation with information technology application of the tourism industry is not synchronous and uniform, areas applying digital technology are big cities with disparities with local provinces, shortage of human resources in terms of sufficient knowledge, skills, a team of experts with technological capacity for training, lack of modern technology; data shortage due to incomplete updating of all data....

4.3 Some solutions to develop smart tourism destinations in Vietnam

First, it is necessary to develop and complete institutions, laws and policies, promulgate specific documents regulating or guiding specific ways to apply digital technology in tourism development in order to create conditions for tourist destinations to apply digital technology.

Second, to improve the efficiency of the infrastructure system, increase investment in construction, intelligently upgrade existing infrastructure on the basis of information technology application, standardize the database to coordinate the organization of interconnection operation in the most effective way, including the participation of citizens.

Third, application of GIS (Geographic Information System) information technology combining telecommunications, 3D, IOT, AI technology to develop digital map systems for navigation, serving the needs of searching at tourist destinations of tourists.

Fourth, focus on training human resources in the field of technology. From strengthening training, building a technology-minded management team, proficiently using information technology applications and connecting the network of tourism businesses to build smart tourism destinations.

Fifth, is necessary to apply smart management and research tools such as (Design a tourist traffic tracker or develop an appropriate customer relationship management program. From there, helping businesses and management agencies monitor the tourism situation conveniently, accurately and economically, helping to achieve business efficiency of travel enterprises better managed.

Sixth, enhance destination marketing with digital strategies (website applications and social networks) for tourists to identify and promote products to tourist destinations more, providing information through technology devices.

Seventh, choose smart applications that need to provide tourists with impressive destinations such as restaurants, hotels, entertainment destinations. Create the most convenient utilities in the guest area wishing to experience tourism such as: booking tickets, booking rooms ...

Eighth, smart product and service development Smart services include: smart tours, electronic maps, mobile smart games, smart booking services, experiences shared via social networks and smart payment methods.

5. CONCLUSION

Smart tourism is a new trend in the context of digital transformation taking place around the world. Vietnam needs to quickly seize and see this as an opportunity to develop the tourism industry. In the coming time, Vietnam needs to invest and upgrade technology, promote communication and smart destinations, train smart human resources to meet the needs of smart tourism and meet the needs of digital transformation today.. In order to continue developing smart tourism destinations, it is necessary to have synchronous participation among all levels of government, creating an attractive investment environment, attracting domestic and foreign businesses and investors to participate.

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FACTORS AFFECTING THE DEVELOPMENT
OF TOURISM HUMAN RESOURCES:
PERSPECTIVE FROM TOURISM ACCOMMODATION BUSINESSES

Đoàn Thị Thắm[1]

Abstract: *Tourism is a labor-intensive industry, tourism human resources play an important role, determining the level of development of the industry. Developing human resources in tourism is always of interest, however, there is not much research into factors affecting human resource development from the perspective of tourism businesses and the workers themselves. This article will focus on presenting and analyzing the results of in-depth interviews with managers and workers working at tourist accommodation businesses in Hanoi about factors affecting human resource development at tourism businesses.*

Keywords: *Influencing factors, tourism human resource development, tourist accommodation businesses.*

Tóm tắt: *Du lịch là một ngành thâm dụng lao động, nguồn nhân lực du lịch đóng vai trò quan trọng, quyết định trình độ phát triển của ngành. Phát triển nguồn nhân lực du lịch luôn được quan tâm, tuy nhiên việc nghiên cứu các yếu tố ảnh hưởng đến sự phát triển nguồn nhân lực từ quan điểm của các doanh nghiệp du lịch và bản thân người lao động chưa nhiều. Bài viết này sẽ tập trung trình bày, phân tích kết quả phỏng vấn sâu các nhà quản lý và người lao động làm việc tại các doanh nghiệp lưu trú du lịch ở Hà Nội về các yếu tố tác động đến sự phát triển nguồn nhân lực du lịch tại các doanh nghiệp.*

Từ khóa: *Yếu tố ảnh hưởng, phát triển nguồn nhân lực du lịch, doanh nghiệp lưu trú du lịch.*

1. INTRODUCTION

Tourism is a general service economic sector, playing an important role in the economy. Tourism human resources are the decisive factor in tourism production and affect the competitiveness of the destination (Murphy & Price, 2005 cited by (Prayag & Hosany, 2015). Tourism human resources play an important role in directly providing services to tourists and determining tourist satisfaction (Sara Joana Gadotti dos Anjos, Jéssica Vieira de Souza Meira & Limberger, 2017). Satisfying services will encourage tourists spend more, stay longer and are more likely to return in the future (Chun-Chu Chen & Petrick, 2016). In recent years, tourism human resources have made progress and gradually adapted to industry development practices, but there are still many shortcomings, the Report on Developing the Future Tourism Workforce in Asia - Pacific (APEC) commented: the demand for labor and skills is increasing, on-site training capacity is essential but very scarce because businesses in the tourism sector

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are mainly micro, small and medium-sized businesses therefore they respond to skills shortages by investing more in recruitment instead of improving internal capacity through training and employee retention (Asia-Pacific Economic Cooperation, 2017). In Vietnam, according to data in the Project "Research on tourism human resource needs to determine the scale and professions of tourism training by 2025, with a vision to 2030" approved by the Minister of Culture and Sports. Sports and Tourism in Decision No. 1509/QD-BVHTTDL dated April 27, 2018, human resource training has only reached 40-50% of needs. Resolution No. 08-NQ/TW dated January 16, 2017 of the Politburo commented: "Tourism human resources are both lacking and weak" and "The training and development of tourism human resources has not received adequate attention" and to develop tourism into a key economic sector, creating high quality tourism products, it is necessary to have a sufficient team of professional human resources, not only in terms of skills and working capacity but also creativeness and management mindset to adapt to the dynamic, constantly moving and changing tourism job environment. Therefore, research on tourism human resource development which points out and evaluates the factors affecting human resource development, especially from the perspective of employers and employees directly, will help human resource development activities be highly effective, which is very necessary.

2. LITERATURE OVERVIEW

In the process of researching human resource development, authors and researchers have pointed out factors that affect the human resource development process. Factors often mentioned are: 1) Level of economic development and tourism development 2) Level of development of education and training; 3) Population growth rate; 4) Macro-economic and social policies; 5) External influencing factors: Globalization; The development of science and technology; Changing trends in travel methods and needs while traveling (T. S. Hai, 2011; Huyen, 2019) (Luu, 2019). Some authors emphasize factors in the macro environment including: 1) Economic factors such as interest rates, exchange rates, inflation, taxes, supply/demand ratio, but above all the situation, the stage of the economic cycle in the country where the company operates, especially during recessions and crises 2) Legal factors include regulations related to employment, salary levels minimum, taxes, fees and workplace safety 3) Demographic factors, aging population and workforce 4) Technological factors such as growing demand for workers workforce with technical skills; pressure to use new technology in human resource management; Computerization, gradually replacing the workforce with modern technology (Kenneth R. Bartlett, 2016; Letkova, 2018; Murray et al., 2017). Micro factors in the organizational environment such as new career profiles, skill requirements and skills gaps; change employee records; effective HRD practices (Thomas BAUM and Patricia REID, 2014), working environment, performance

evaluation and salary payment (Truong, 2017) or in-depth analysis of factors of employee capacity such as professional capacity, technical capacity, personal capacity, executive leadership capacity, foreign language capacity (Nhi, 2019).

Whether at the level of corporate governance, behavior, personal capacity or macro management, factors affecting human resource development can be divided into groups: internal factors, external factors (Atthakorn, 2013; Nickson, 2007), group of organizational, functional and individual factors (Ensour et al., 2013), group of factors belonging to the macro environment; group of industry environmental factors; and a group of factors belonging to the business and the workers themselves (Hung, 2019), a group of objective factors, a group of subjective factors, a group of factors belonging to local characteristics (Quan, 2014), group of international factors, domestic factors, and local specific factors (T. D. Hai, 2020). Approaching research within businesses, Thai Doan Hong (2022) believes that the factors of recruitment and selection of personnel, training and career development, working environment, remuneration policies, employers' brand have an impact on human resource development of tourism businesses.

About research methods, the authors mainly use synthetic research methods, analyzing the results of previous studies (T. D. Hai, 2020; T. S. Hai, 2011; Hung, 2019; Huyen, 2019; Kenneth R. Bartlett, 2016; Murray et al., 2017; Quan, 2014), some authors combine qualitative and quantitative analysis to determine the influence of factors on the human resource development levels of organizations such as Lecturing Human Resources Development of universities in the Northeast region, Thailand (Atthakorn, 2013), the level of organizational, functional and individual factors affecting the strategic position of human resources development at universities University of Jordan (Ensour et al., 2013), organizational factors affecting human resource development of tourism businesses (Hong, 2022), identifying groups of important and unimportant factors in terms of individual capacity that influence affecting the development of highly qualified human resources in the tourism industry in Binh Duong province (Nhi, 2019). Currently, in the tourism sector, there are no empirical studies assessing the level of development and researching factors affecting human resource development from the perspective of employers and directly employees in available documents. Therefore, in this article, the author uses the expert interview method, a method that does not take much time but is highly reliable, as a research method. Furthermore, to find out the enterprise's perspective on issues related to human resource development at the enterprise, the best way is to directly ask managers and employees working at the enterprise. However, it should be noted that interview participants must be people with long-term work experience, knowledgeable about human resource development and career success, hold management positions or be skilled employees who selected and recommended by the business director for an interview.

3. FACTORS AFFECTING HUMAN RESOURCE DEVELOPMENT

Researching factors that influence human resource development increases the ability to choose strategies, structure appropriate roles, and operationalize human resource development. However, simply creating a learning environment to solve operational problems is not enough to meet needs and aspirations. In fact, in some organizations, employees have knowledge and ability but lack will and do not work hard. According to Wararat Kieopairee (2008), factors affecting human resource development can be divided into the following three groups:

1) External organizational factors such as globalization, technology and innovation, economic conditions, demographics, workforce and consumer behavior.

2) Factors within the organization such as culture, organizational structure, resources and organizational management.

3) Personal factors such as values, motivation, personality, ability to learn.

The factors of the three groups are interconnected and affect human resource development as follows:
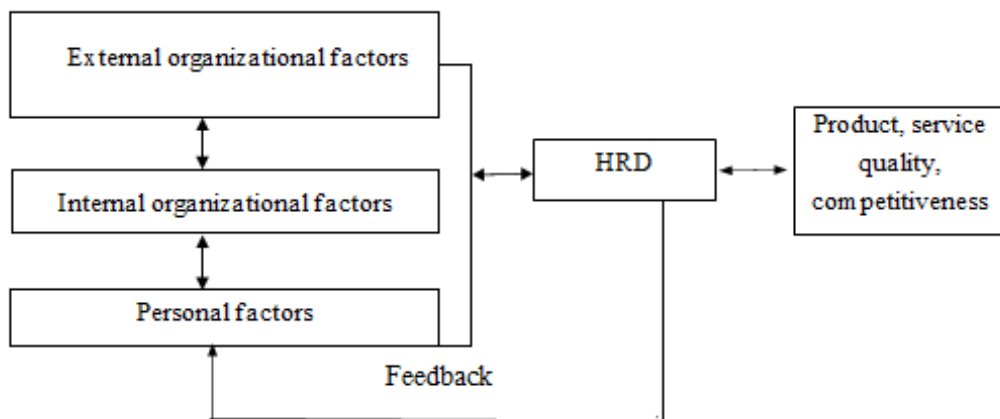
Figure 1. Linkage of factors affecting human resource development

Source: Wararat Kieopairee, 2008: 30, cited by Atthakorn, 2013

Figure 1 shows that there is a relationship between human resource development factors considered from aspects outside the organization. These factors influence factors within the organization and also impact individual factors. Besides, factors within the organization also affect the basic factors of the individual, conversely, the basic factors of the individual also affect the factors within the organization and other factors. inside the organization will have an impact on factors outside the organization. All three of these factors have an impact on human resource development in the organization, playing an important role in the structure and role of human resource development.

Human resource development requires the support of the government and related agencies, the support of the head as well as the organization's leadership, in addition to requiring coordination and cooperation of related agencies and organizations, such as finance, budget, education and training, policies, regimes, labor and employment, and are also influenced by objective factors such as economics, culture, technology, development trends… In particular, the role and capacity of individuals and units responsible for human resource development are very important in developing the organization's human resources. The process of human resource development is associated with the qualifications, abilities, and skills of employees as well as the quality of products, services, and competitiveness of the organization.

4. DEVELOPING TOURISM HUMAN RESOURCES

Regarding tourism human resource development, there are many different concepts from a macro and micro perspective. The author would like to mention some concepts in recent studies, specifically as follows:

1. Liu, A. Y. (2002) Tourism human resource development is the training and development of skills for workers, in order to improve operational efficiency, create products with quantity and quality for tourism businesses.

2. Dennis Nickson (2007) Tourism and hospitality human resource development is the process of creating favorable conditions and investing in human resources to improve the capacity, skills and performance of employees in the hospitalities and tourism industry. The goal of human resource development is to ensure that employees have the capacity and knowledge to meet industry requirements and challenges, while creating a positive work environment and personal growth.

3. Tran Son Hai (2011) Human resource development in the tourism industry is the totality of forms, methods, policies and measures to perfect and improve the quality of human resources (intellectual, physical and psycho-social qualities) increases the quantity and adjusts the structure of human resources in the tourism industry to suit the requirements of socio-economic development and tourism development in each stage of development.

4. Le Thi Thanh Huyen (2019) Tourism human resource development is the process of increasing quantity and quality, expressed in the gradual improvement of physical and mental strength (professional qualifications, knowledge, skills, attitude) through training, fostering, attracting and using tourism resources in a reasonable structure to promote the tourism development process of a locality or a country.

5. Nguyen Manh Hung (2019) Tourism human resource development is the growth in quantity, structural development and improvement of the quality of tourism human resources in all aspects (level of meeting job requirements, professional knowledge, professional skills, physical and mental, working attitude) through activities such as

attracting, developing policies, linking activities and measures to train and foster tourism human resources to suit the requirements of socio-economic development and tourism development of localities, tourist destinations, and a country in each stage of development.

6. Do Thi Y Nhi (2019) starting from Bui Van Nhon's (2006) perspective on human resources development, the author believes that human resource development in the tourism industry is the totality of forms, methods, policies and measures to perfect, improving the quality of human resources in the tourism industry (that is, physical strength, mental capacity and personal - social qualities) in accordance with the requirements of socio-economic development in each stage of development.

7. Thai Doan Hong (2022) Human resource development of tourism enterprises is about improving the quality of human resources and developing the number of employees for the enterprise, expressed through improving professional qualifications, skills, and abilities as well as the awareness and ethics of each individual to bring the best results to the business.

8. Abdolmalek Khareh et al (2021) Human resource development includes the introduction, elimination, modification, direction and guidance of processes to enable all individuals and groups to acquire skills, knowledge and abilities needed to perform current and future tasks.

9. Amer Hani Al-Qassem (2022) Human resource development (HRD) is a comprehensive approach to human resource development to improve the knowledge, skills and abilities of all members of society.

Through the above concepts, it can be seen that concept 1 and concept 7 focus on training, developing skills and qualifications for workers to improve operational efficiency for businesses. Concepts 3,4,5,6 emphasize tourism human resource development as activities or processes that increase quantity, improve quality, and adjust structure, manifesting in perfecting and improving physical strength, intelligence and qualities (knowledge, skills, attitudes) through training, fostering, attracting and using tourism human resources in accordance with local socio-economic and tourism development requirements, tourist area, a country in each stage of development. Concepts 2,8,9 also emphasize improving knowledge, skills, and abilities for workers but ensuring that employees have enough capacity and knowledge to meet industry requirements and challenges, while creating a positive work environment and personal development (Nickson, 2007), is open to all members of society (Al-Qassem, 2022) and aims to help individuals and groups carry out tasks both present and future (Abdolmalek Khareh, Habibollah Salarzehi, Normohammad Yaghoubi, 2021).

Based on the above concepts of tourism human resource development, the author proposes that tourism human resource development in this article is understood as all the opportunities and support that workers at tourism businesses receive to develop their potential. Tourism human resource development includes providing training activities, promoting education and personal development to help employees learn to improve knowledge, skills and abilities to meet current job needs, develop personal development as well as development challenges of businesses and the tourism industry.

5. PROPOSE A RESEARCH FRAMEWORK

In this study, the dependent variable is the human resource development of tourism businesses in which the researcher chose training, further education, on-the-job learning, and personal development as factors constituting development. The independent variables are internal organizational factors, external organizational factors and personal factors.

Factors within the organization are explained on the basis of Barnard's closed system theory (1938) with concepts related to communication theory and motivation in organizations. External organizational factors are explained by open systems theory and resource dependence theory of Pfeffer and Salancik (1978).

In addition, the researcher considered and included personal factors into the theoretical framework of the study with the aim of examining more comprehensively the influence of personal factors such as gender, age, recruitment status, motivation, aspiration... for the development of tourism human resources.

Regarding the research model, based on the connection between human resource development factors in the study of Wararat Kieopairee (2008), refer to the detailed content in the research model on factors affecting the development of Rajabhat University lecturers in Northeast Thailand by Atthakorn (2013), and based on the research results of a number of authors researching the development of tourism human resources in the context of Vietnam, the results of in-depth interviews with experts in the field of tourism in qualitative research to add corporate governance and organizational culture factors to internal factors, refer to Pfeffer & Salancik's (1978) Nickson (2007) Kenneth R. .Bartlett et al. (2016) to develop, adding factors of economic situation, labor market, cultural changes, tourism trends and technological developments to the external influencing factors into the development of human resources.
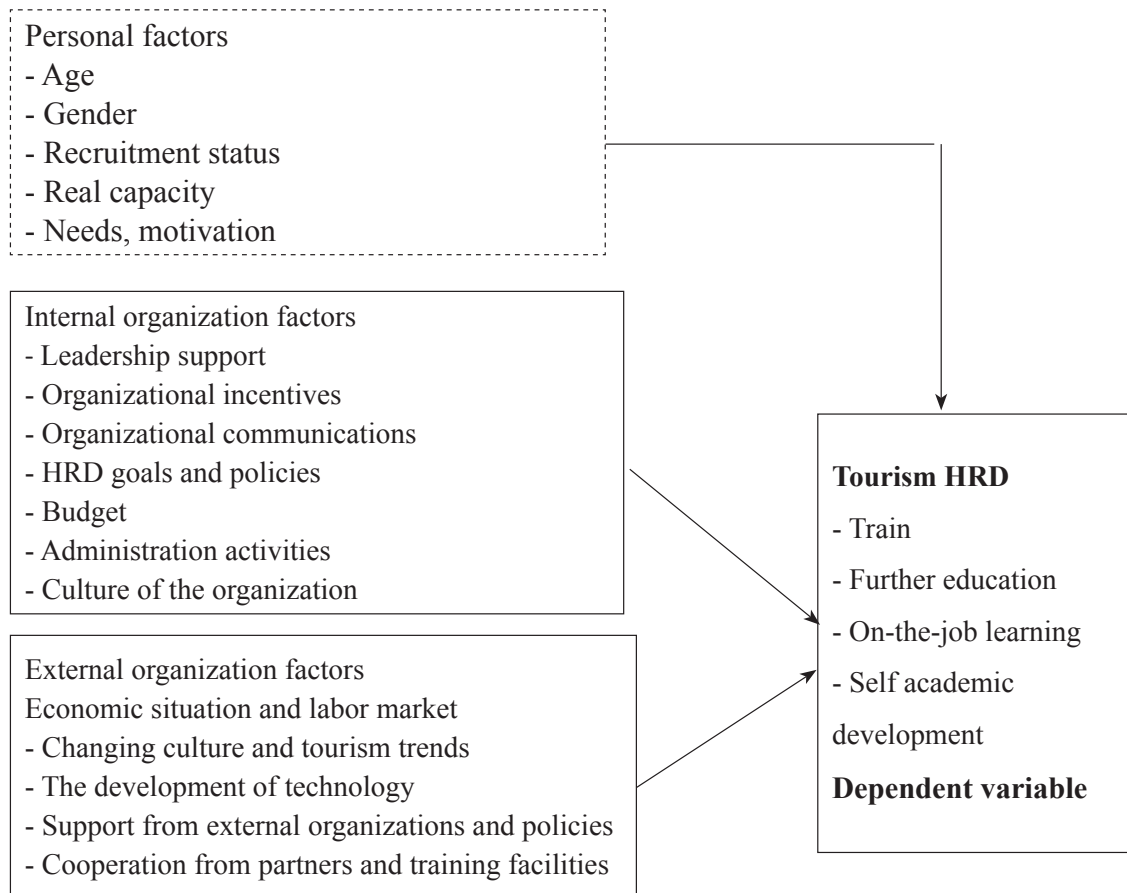
Independent variables

Personal factors
- Age
- Gender
- Recruitment status
- Real capacity
- Needs, motivation

Internal organization factors
- Leadership support
- Organizational incentives
- Organizational communications
- HRD goals and policies
- Budget
- Administration activities
- Culture of the organization

Tourism HRD
- Train
- Further education
- On-the-job learning
- Self academic
development
Dependent variable

External organization factors
Economic situation and labor market
- Changing culture and tourism trends
- The development of technology
- Support from external organizations and policies
- Cooperation from partners and training facilities

Figure 2. Research models

6. RESEARCH RESULTS

6.1. Time, subject and content of the interview

This section presents the results of in-depth qualitative interviews with senior management teams and employees to learn about their development process and how they perceive factors affecting their development and learn more about the difficulties that businesses and workers face in the process of developing human resources as well as the measures and methods applied or suggestions and proposals to deal with those difficulties.

- Interview time: All interviews will be conducted in August 2023

- Most of the people selected for interview have university degrees, a few have intermediate or vocational degrees, and the majority have decades of experience working in the hotel and tourism industry to be able to recognize development process as well as having complete and objective assessments of the main factors affecting the development

process of oneself and the unit's human resources. Besides, there are also a few cases where new employees are hired for a few years to consider the level and development opportunities they receive.

- The in-depth interviews were divided into two groups and they were asked about issues for tourism human resource development and additional resources:

+ Group 1 includes 05 business managers: General Director of Candle Hotel Hanoi, Human Resources Director of Deawoo Hotel Hanoi, Deputy General Director of Danly Hotel, Deputy General Director of Estin Hotel and Director of Hoa Binh Hotel. Issues include policy direction on human resource development (HRD), barriers & issues as well as factors affecting human resource development.

+ Group 2 includes 10 officers and employees from 05 hotels in Group 1 whose leaders and managers were interviewed and the interviews focused on their views on human resource development.

From in-depth interviews, fifteen case studies were developed.

6.2. Main findings

6.2.1. On aspects of tourism human resource development

- Training: The majority of interviewees said they were trained by businesses to adapt to job positions when newly recruited or when newly transferred or appointed. The way to organize training is quite diverse, it can be classroom training, on-the-job training or a combination of classroom training and on-the-job instruction and training. Some interviewees said that the best way to develop tourism human resources is for businesses to have detailed, scientific training programs that create excitement for employees; Training activities need to be close to the needs of the job as well as appropriate to the employee's abilities. Besides, the quality of trainers must be met and standardized.

- Further education: Among those interviewed, only a few mentioned that businesses had ever provided further education courses, and these were usually people holding leadership positions and businesses management with strategic human resource development training programs and plans.

- Learning from work experience: Interviewees said that they have also learned and accumulated a lot through actual work and this can be considered a training method of the business (on the job training) . In order for this training method to be effective, respondents stated that tourism and hotel businesses should appoint instructors and tutors to create favorable conditions for the learning and development process of human resources at the workplace.

- Self-academic development: Many interviewees have gone through many positions from low to high, starting as baggage handlers, receptionists, marketing and sales staff, and a time after, they were appointed as front office supervisor, department head, assistant

general manager, then executive director, general manager... at high-ranking hotels. Many interviewees believed that each individual's self-learning and self-improvement efforts are very important, determining the level of development of each individual. In addition to the environmental factors and favorable conditions of the business, the employees themselves must really make efforts and overcome many work and life pressures to improve and develop themselves.

6.2.2. About factors affecting the tourism human resources development

Factors affecting the tourism human resources development are arranged in order of importance in Table 1 below:

Table 1. Synthesize the opinions of interview respondents to arrange factors affecting the tourism HRD

Studying cases	Internal organization factors							External organization factors				
	LS	OI	OC	OP	BT	AA	CO	EL	CT	DT	SP	CF
Case 1	2	3	5	1	4	6	7	2	3	1	4	5
Case 2	2	4	5	1	3	6	7	2	4	3	5	1
Case 3	3	5	7	1	2	4	6	1	2	5	3	4
Case 4	1	5	4	2	3	6	7	1	2	3	4	5
Case 5	3	4	5	1	2	6	7	2	4	3	5	1
Case 6	2	3	4	1	5	6	7	1	2	3	4	5
Case 7	2	3	5	1	6	4	7	3	2	1	4	5
Case 8	2	4	5	3	1	6	7	1	3	4	5	2
Case 9	1	3	5	4	2	6	7	2	3	1	5	4
Case 10	3	4	5	1	2	7	6	1	4	5	3	2
Case 11	1	3	6	4	2	5	7	2	3	4	1	5
Case 12	4	7	5	6	2	3	1	1	2	5	4	3
Case 13	3	5	7	1	4	6	2	1	2	3	4	5
Case 14	2	1	7	3	4	6	5	1	2	3	5	4
Case 15	1	5	4	2	3	7	6	1	2	3	4	5

Notes: Leadership support (LS), Organizational incentives (OI), Organizational communication (OC), Objectives and policies for HRD (OP), Budget (BT), Administration activities (AA), Culture of the organization (CO), Economic situation and labor market (EL), Changing culture and tourism trends (CT), The development of technology (DT), Support from external organizations and policies (SP), Cooperation from partners and training facilities (CF); Source: Author's compilation

Table 1 shows that respondents believe that the factors affecting the development of human resources in tourism businesses include internal factors and external factors, in which the ranking order is from high to low for specific impact factors are as follows:

- For internal organization factors: (1) Enterprise human resource development goals and policies; (2) Leadership support; (3) Budget (4) Organizational incentives; (5) Organizational communications; (6) Management activities; and (7) Organizational culture.

- For external organization factors: (1) Economic situation and labor market; (2) Cultural changes and tourism trends; (3) Technological developments; (4) Support from policies and regulations external organizations; (5) Cooperation from partners and training units.

In addition, the interviewees also added a number of factors affecting the development of tourism human resources, specifically:

Case 1: Development motivation

Case 2: Motivation, personal capacity

Case 3: Recruitment status, job positions

Case 4: Corporate culture, corporate policies, personal motivation

Case 5: Diseases and environmental disasters also impact human resource development

Case 6: Attitude and commitment level of employees

Case 7: Policies to support and promote the development of tourism human resources of the State and budget

Case 8: Business income and incentives

Case 9: Capacity, motivation, level of engagement

Case 10: Enterprise regulations, capacity level

Case 11: Consciousness and motivation for development

Case 12: Ability, motivation

Table 2. Other factors can affect the development of tourism HRD

No	Factors	Frequency
	Personal factors	
1	Motivation	6/12
2	Capacity	4/12
3	Awareness, attitude	2/12
4	Recruitment status	1/12
5	Working position	1/12
6	Income	1/12
	Internal organization factors	
7	Regulations and policies of the enterprise	2/12
8	Budget	1/12
	External organization factors	
9	State support policies	1/12
10	Diseases and environmental disasters	1/12

Source: Author's compilation

6.2.3. Difficulties in developing tourism human resources

According to the opinion of the majority of interviewees, tourism human resource development currently faces some major difficulties as follows:

- Lack of human resources, especially high quality human resources, human resources with deep professional skills and management capacity leads to unfair competition between businesses in attracting and using unqualified human resources, high labor turnover rate, increased costs due to continuous recruitment and additional training.

- Tourism is an industry with a highly interdisciplinary and integrated nature, requiring human resources in the industry to have good communication skills and basic knowledge of fields such as food, agriculture, transportation, spa, events or understanding on art and culture such as museums, theatre and cinema... to connect and thereby provide overall products and services that ensure quality. However, the quality of input human resources is not satisfactory and businesses do not have the capacity to train and foster these types of knowledge and skills.

- In the past few years, the COVID-19 pandemic has seriously affected the tourism industry, causing businesses to become exhausted, some businesses have gone bankrupt or had to close or stop operating for a long time, most of the reserve funds have been used to pay salaries and cover expenses to help maintain the business. Business activities have not been restored for long, so funding for training and human resource development is very limited, especially is a source of funding for advanced education and specialized training activities.

- Without a unified set of skill standards, it is difficult to determine standard operating procedures.

- Development plans of human resources in businesses are not clear.

- Human resources at tourism businesses seem to be overloaded with work and have no time or energy to further study and develop themselves.

6.2.4. Suggested solutions from human resources at tourism enterprises

Through the open questions of the questionnaire, respondents suggested a number of solutions to solve difficulties in the current development of tourism human resources, specifically as follows:

- There must be a good orientation for tourism development to have attractive policies to attract workers and professional training to nurture and develop talents.

- State management agencies need to build a standard and mandatory documentation system for each position, accompanied by an online learning library to support each

business with a number of regular learning accounts; help harmonizing industry standards and accommodate competency development according to the levels of a specific competency framework.

- There needs to be many exchange activities between workers and employers. Build corporate culture and encourage, motivate, and create conditions for employees to have opportunities to develop their careers. The first step is through training sessions and internal training. Employees themselves will update new and useful knowledge at work, thereby having more orientation for personal development (promoting strengths and overcoming weaknesses).

- It is necessary to allocate enough budget for tourism human resources development activities, especially in-depth training and advanced development.

- Enterprises need to adjust working hours regulations, reduce some administrative work, and arrange flexible time arrangements so that employees can participate in activities to improve their capacity and develop themselves.

- State management agencies need to support and closely inspect and supervise the promulgation and implementation of training activities by organizations and training units to ensure that standards for graduating students meet basic knowledge, skills and a willingness attitude to work in the dynamic, integrated and flexible context of the tourism industry.

7. POLICY IMPLICATIONS

7.1. For Businesses

- Based on research results, it shows that the human resources development goals and policies of enterprises are the most important factors determining the overall development of tourism human resources, therefore, to develop sustainably tourism human resources in enterprises effectively and efficiently, the author recommends that tourism businesses having specific policies, programs, and plans to develop human resources in the business, paying attention to the aspects of training and advanced education of HRD, ensuring human resource development programs, policies, and plans are consistent with the capacity and development goals of the enterprise; unified communication and implementation of those programs and plans throughout the organization.

- Business leaders play a very important role in human resource development. Leaders of tourism accommodation businesses need to pay attention to investment and spend a reasonable part of the budget to develop human resources, create an environment and harmonizing policies between training and using, remuneration and retention of employees, helping them feel secure to stick with and contribute their best to the business; regularly and periodically evaluate the effectiveness of implementing programs, policies, and human resource development plans of the enterprise and make adjustments if necessary.

- Cooperation between businesses and other organizations also contributes to enhancing human resource development of tourism enterprises. Therefore, establishing agreements and training cooperation with universities, academies, educational establishments in Hanoi city and organizations with resources will ensure sustainability for the successful development of human resources development.

- Coordinate and support state tourism management agencies in building mechanisms, policies, planning strategies, tourism industry development plans and sustainable tourism human resources.

- Income can also be one of the important factors that create motivation and influence the development of tourism human resources, but the income of tourism industry workers is currently not high. Tourism businesses need to consider enhancing the value of products and services of the tourism industry through improving human resource capacity, thereby increasing prices and increasing income for workers. This is also a way to require employees to constantly learn and improve their own values, contributing to the sustainable development of businesses and the tourism industry.

7.2. For state management agencies

The results of the study also show that support from policies and external organizations is an important factor determining the development of training and advanced education activities of tourism HRD, therefore, state management agencies need to have policies to make it easy for human resources of tourism businesses to have easy access and conditions to participate in training and education activities to improve specialized capacity in the field of tourism.

7.3. For workers

- Pay attention to grasping, utilizing and effectively exploiting human resource development policies of businesses as well as programs to support human resource development of Hanoi, the tourism industry and projects receive other funding for training and fostering to improve skills and working capacity.

- Create motivation for career development, regularly update knowledge and improve professional skills.

- Proactively grasp these changes to promptly prepare and improve yourself to adapt to the dynamically changing environment of the tourism industry.

8. CONCLUSION

Starting from the closed system theory of Barnard (1938) and the open system theory and resource dependence theory of Pfeffer and Salancik (1978), referring to the research model of Atthakorn (2013), the study has proposing a model of factors affecting the

development of tourism human resources, on that basis, determining the important of each factor inside and outside the enterprise on the development of human resources from the perspective of managers and employees at tourist accommodation businesses. Besides, the research has also identified that among the individual factors of the employee, the motivational factor has the most influence on the development of human resources. If previous studies indicate influencing factors (T. S. Hai, 2011; Huyen, 2019) (Luu, 2019), (Quan 2014, Hung, 2019), (Kenneth R. Bartlett, 2016; Letkova, 2018; Murray et al., 2017), analyze factors within the enterprise (Truong, 2017) (Thai Doan Hong, 2022) or analyze in-depth factors of employee capacity (Nhi, 2019), this article with discoveries about the importance of internal factors, external factors of the enterprise and individual factors can be suggested to supplement and enrich the theory of tourism human resource development. However, to be able to confirm this discovery with certainty, further research is needed at a deeper level, with a broader scope, or with more diverse and convincing research methods. In terms of practice, this research result can be a basis for managers, businesses and workers to consider when implementing tourism human resource development activities.

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DEVELOPING AN INTELLIGENT TRAVEL RECOMMENDATION APPLICATION UTILIZING CHATGPT ON MOBILE DEVICES

**Le Nhat Tung[1], Nguyen Thi Lieu[2], Nguyen Anh Tuan[2],
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Abtract: *In this project, the author team presents and proposes a solution to develop a travel support application. The application integrates advanced artificial intelligence technologies such as ChatGPT, LangChain, and Dialogflow, and is deployed on mobile platforms. The goal of the application is to enhance the traveler's experience by providing recommendations for itineraries and tourist destinations. Additionally, other features such as weather information lookup, tourist destination search, and voice narration are also integrated into this application. The development and deployment of AI-integrated travel applications will address some limitations of traditional travel solutions.*

Keywords: *Intelligent travel application; travel experience improvement; ChatGPT; AI ChatBot.*

Tóm tắt: *Trong bài viết này, nhóm tác giả trình bày và đề xuất giải pháp xây dựng một ứng dụng hỗ trợ cho người du lịch. Ứng dụng được tích hợp các công nghệ trí tuệ nhân tạo tiến tiên như ChatGPT, LangChain và Dialogflow, và được triển khai trên nền tảng di động. Mục tiêu của ứng dụng là nâng cao trải nghiệm của người du lịch thông qua việc gợi ý về lịch trình, địa điểm du lịch. Ngoài ra một số tính năng khác như tra cứu thông tin thời tiết, tìm kiếm địa điểm du lịch, thuyết minh bằng giọng nói cũng được tích hợp trong ứng dụng này. Việc phát triển và triển khai các ứng dụng du lịch có tích hợp AI sẽ giải quyết được một số hạn chế của các giải pháp du lịch truyền thống.*

Từ khóa: *Du lịch thông minh; cải thiện trải nghiệm du lịch; ChatGPT; AI chatbot*

1. INTRODUCTION

Nowadays, tourism is considered an essential need in cultural and social life, and it also plays a crucial role in the economy of many countries, including Vietnam. After the COVID-19 pandemic years, tourism in Vietnam has shown strong development. According to statistics from the Vietnam National Administration of Tourism, in 2023, Vietnam welcomed 12.6 million international visitors, which is 3.4 times higher than in 2022. The total number of domestic tourists for the entire year is estimated at 108 million. Revenue from accommodation and dining services in 2023 is projected to reach 673.5 trillion VND, accounting for 10.8% of the total and witnessing a 14.7% increase compared to the previous year [1]. Vietnam's tourism industry is experiencing significant growth, with an increasing number of international and domestic tourists. Vietnam is

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gaining more recognition worldwide, with many domestic destinations being voted as favorite choices among international travelers. Tourism is receiving growing attention from society as a whole.

The tourism industry is undergoing a significant transformation as technology advances rapidly. Travel applications have become increasingly common tools for promoting destinations, providing users with convenient access to information. However, despite these advancements, the development and promotion of local tourism destinations' images have not been as effective as desired. This calls for attention not only from the tourism industry but also from locals and tourists alike. With the integration of advanced technologies such as artificial intelligence (AI) into travel applications, users now enjoy unprecedented convenience, flexibility, and access to information. In this digital era, travelers rely more than ever on mobile applications to plan, book, and enhance their travel experiences, fundamentally changing how they explore destinations and interact with their surroundings.

In recent years, many research works have proposed the use of AI and recommendation systems in the field of tourism. Some notable research works include: "Toward an intelligent tourism recommendation system based on artificial intelligence and IoT using Apriori algorithm" [2], "Design of an AI-Empowered Recommender System for Traveling Support: Individual Traveler as an Instance" [3], "Building effective recommender systems for tourists" [4], "A Thematic Travel Recommendation System Using an Augmented Big Data Analytical Model" [5], "Intelligent recommendation model of tourist places based on collaborative filtering and user preferences"[6] ... However, developing a travel itinerary recommendation support application based on the ChatGPT tool is a novel approach. With the power of the large language model, ChatGPT is an attractive tool for recommending travel itineraries. In the Vietnamese market, there are some software products related to tourism; however, these applications do not integrate AI ChatBot for users to interact with about itineraries, weather, and other questions.

In this paper, we present the development and implementation of a comprehensive travel support application that integrates advanced AI technologies, including ChatGPT, LangChain, and Dialogflow. Our application aims to provide users with accurate, diverse, and interactive travel recommendations while addressing the limitations of traditional travel solutions. By combining these technologies, we ensure the authenticity and reliability of the information provided, offering users a seamless and intuitive experience throughout their journey.

2. TECHNOLOGIES AND METHODOLOGY

2.1. Technologies

In this project, we combine a series of ChatGPT technologies with LangChain and Dialogflow to authenticate the information provided by ChatGPT. Avoid the software illusion that ChatGPT creates that causes incorrect information. At the same time, it helps bring about natural, on-topic conversations about the field of tourism. Technologies used in this project include:

2.1.1. Recommendation Systems

Recommender systems or recommendation systems are a subset of information filtering system and are software tools and techniques providing suggestions to the user according to their need [7]. A recommendation system is an artificial intelligence or AI algorithm, usually associated with machine learning, that uses Big Data to suggest or recommend additional products to consumers. These can be based on various criteria, including past purchases, search history, demographic information, and other factors.

Recommendation systems play a pivotal role in modern applications, particularly in the realm of tourism, by leveraging advanced algorithms to analyze user preferences and historical data to provide personalized recommendations. These systems employ various techniques such as collaborative filtering, content-based filtering, and hybrid approaches to deliver tailored suggestions to users. Collaborative filtering techniques utilize the behavior and preferences of similar users to recommend items or services that may be of interest to the target user. This approach relies on user interaction data, such as ratings or purchases, to identify patterns and make predictions about user preferences. Content-based filtering, on the other hand, focuses on the attributes or characteristics of items themselves to make recommendations. By analyzing item features and user profiles, content-based filtering can suggest items that match the user's preferences or characteristics.

In the context of tourism, recommendation systems have been instrumental in enhancing the travel experience for users. In this project, we utilize ChatGPT to harness its capabilities in recommending travel itineraries for customers. ChatGPT will be elaborated on in detail in section 2.1.3.

2.1.2. ChatBot

Chatbots are intelligent conversational software agents activated by natural language input (in text, voice, or both) [8]. They provide conversational outputs to respond to queries and, when commanded, sometimes execute tasks. While chatbot technology has existed since the 1960s and influenced user interface development in gaming since the early 1980s, chatbots today are easier to train and deploy. This is due to abundant open-source code, widely available development platforms, and deployment options through Software as a Service (SaaS).

Chatbots are widely applied in many fields of activity, bringing many benefits to society, as long as there is responsibility and ethics in developing and using AI [9]. Currently ChatBot is used in many fields such as healthcare, education, banking, transportation, public administration, transportation and especially in applications related to tourism.

Chatbots play a crucial role in providing information and assistance to travelers during the planning and execution of their trips. One of the key benefits of using chatbots in the tourism industry is their ability to provide 24/7 service without the need for human intervention. This ensures that travelers can receive answers to their questions and requests immediately, regardless of the time of day. Chatbots also have the capability to provide detailed and personalized information based on the preferences and specific requirements of each traveler, from suggesting sightseeing spots and restaurants to providing information about weather and public transportation schedules. Furthermore, utilizing chatbots helps optimize human resources and reduce costs for travel businesses by automating some simple tasks such as answering basic questions and guiding travelers. This allows staff to focus more on complex tasks and enhance customer experience [10].

2.1.3. ChatGPT

ChatGPT is a publicly available tool developed by OpenAI, harnesses the GPT language model technology [11]. It functions as a highly sophisticated chatbot capable of addressing diverse text-based queries. From simple inquiries to more intricate tasks like crafting thank-you letters or facilitating discussions on productivity issues, ChatGPT exhibits remarkable versatility [12]. This proficiency is enabled by its extensive data repositories and streamlined design, allowing it to comprehend and interpret user inputs before generating responses in a manner closely resembling natural human language. Beyond its practical utility, ChatGPT's ability to generate human-like language and tackle complex tasks marks a significant advancement in the realms of natural language processing and artificial intelligence.

2.1.4. LangChain

LangChain is a framework for developing applications powered by language models. It enables applications that: Are context-aware: connect a language model to sources of context (prompt instructions, few shot examples, content to ground its response in, etc.). Reason: rely on a language model to reason (about how to answer based on provided context, what actions to take, etc.) [13].

The core component of LangChain is its Libraries, available in both Python and JavaScript. These libraries encompass interfaces and integrations for a wide range of components. They also provide a fundamental runtime for assembling these components into chains and agents, along with pre-built implementations of chains and agents for immediate use.

2.1.5. Dialogflow

Dialogflow is a Google AI-based application development platform used to build chatbot and voice interaction systems. It provides tools and APIs for developers to create

intelligent chat applications capable of understanding and responding naturally to users through text or voice. Dialogflow employs natural language processing technology to comprehend user intents and interact with them in the most natural way possible. It also offers features such as context analysis, conversation flow management, and integration with other platforms like Facebook Messenger, Slack, and more.

2.1.6. Node. JS

Node.js is an open-source application development platform based on JavaScript, built on the Google JavaScript Engine (V8 Engine). It allows writing JavaScript code to run on the server side, rather than just on the web browser as usual. Node.js provides a runtime environment that supports the development of efficient, flexible, and lightweight web and server applications. It is widely used for developing web applications, network applications, and various web services.

2.2. Methodology

2.2.1. System architecture design

In the current application development landscape, every system adopts its own specialized system architecture, spanning from web applications to mobile applications. The system architecture plays a pivotal role as the foundational framework ensuring the robustness and flexibility of the application. Below is the system architecture model of the application.
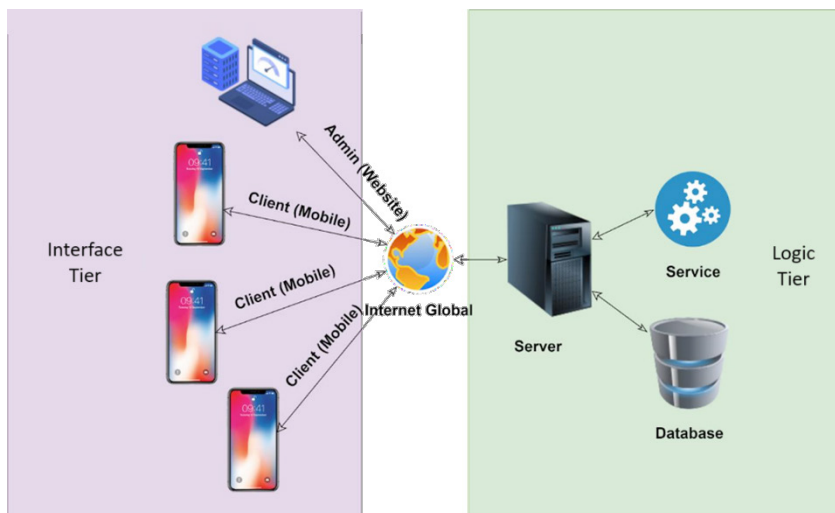
Figure 1. System architecture

The components of the system include:

Client: This is the software or device that users use to access the application or service. In this case, the client can be a mobile application (for Android and iOS) or a web browser.

Server: This is a computer or server system responsible for providing services and resources to clients. The server may contain applications and data necessary to serve requests from clients.

Database: This is where the system's data is stored and managed, including user information, article content, location information, and other data. This data is accessed and managed by the server to serve client requests.

Admin website: This is a part of the system dedicated to administrators to manage and control system activities, including user management, content moderation, settings and configurations, and other administrative functions.

Third-party Services: These are services integrated into the system from third-party providers to provide additional features or supplementary data, such as ChatGPT API, Google Place API, Dialogflow API, Open Weather API, and other services.

We can divide the system into two distinct tiers: the interface tier and the logic tier.

Interface Tier: This includes the user interface and the admin interface, designed to be visually appealing, user-friendly, and easy to use. Users can search for travel information, make reservations, and manage their travel itineraries through the mobile interface. This interface integrates Google Maps, directions, location search, weather data at various locations, and intelligent interactive features such as chatbots or recommendation systems to enhance user experience. The admin interface allows management of users, locations, posts, and modification of the application's introductory images.

Logic Tier: Processes requests from clients, stores, and manages information related to tourist destinations, hotels, restaurants, entertainment activities, and other tourism services through databases and APIs connected to external services. The database supports search and categorization features based on user requirements. This information is organized systematically and easily retrievable.

In summary, the basic idea is as follows: from the client's interface (users operating on the mobile application) and the admin interface (administrators operating on web platforms), requests are sent to the logic tier through the internet. Subsequently, the server accesses the database to retrieve the required information for the client and also accesses services (provided through the internet) to obtain the necessary information requested by the clients.

2.2.2. Software architecture design

With the aim of creating an intelligent, personalized, and user-friendly travel application, the team emphasized the development of a software architecture ensuring flexibility, reusability, and scalability of the system, utilizing a modular software

architecture approach. The modular software architecture model divides the application into independent components, with each component responsible for a specific task and capable of operating independently. This enables the author's solution to easily adapt and scale according to the changing requirements and needs of users and the travel market.
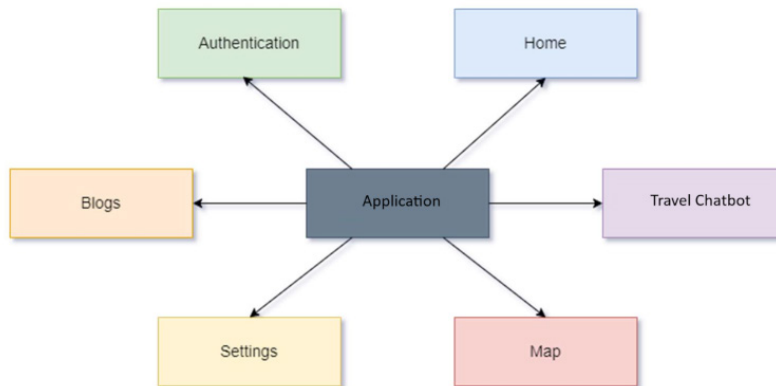

Figure 2. Software architecture

2.2.3. Deployment method

Step 1 - Infrastructure Setup: In this step, we use Node.js for backend development to handle basic operations and provide APIs for the mobile application. We integrate Dialogflow to process and understand natural language from users, enabling the chatbot to interact naturally and intelligently. We use LangChain to connect the language model to various sources of context, ensuring context-aware responses and reasoning capabilities.

Step 2 – Chatbot Deployment: Integrate ChatGPT with other components using LangChain to ensure the chatbot's contextual understanding and natural responses. OpenAI provides an API for communicating with ChatGPT remotely. By utilizing this API, the mobile application can send text requests to ChatGPT's API and receive responses from the chatbot. This process can be executed using transmission protocols such as HTTP or WebSocket.

Step 3 - Mobile Application Development: Develop the mobile application using suitable frameworks for mobile app development, such as React Native. Integrate the chatbot functionality into the application interface to enable users to interact intuitively and seamlessly. Implement authentication and authorization mechanisms to ensure security and privacy for users.

3. EXPERIMENT

Based on the system architecture outlined in section 2.2 and leveraging the technologies presented in section 2.1, the author team has developed a tourism application with the following features:

3.1. Module Travelbot

The Travelbot module within the tourism application integrates artificial intelligence technology to provide interactive support through a chatbot based on the ChatGPT platform. The Travelbot module includes the following features:

Map Viewing: Travelbot can display maps for users to view various locations and important landmarks. Users can search for specific places on the map and receive detailed information about those locations.

Directions: Travelbot assists users in finding directions from one location to another. Users can request directions from their current location to a designated destination, and the chatbot will provide detailed instructions on how to get there.

Weather Data Viewing: Travelbot provides information about current weather conditions and forecasts for locations within the tourism application. Users can request to view the weather at a specific location, and the chatbot will provide information about temperature, weather conditions, and forecasts for the next day.

Travel Agency Advice: Travelbot can advise on travel agencies and tourism services. Users can inquire about reputable travel agencies, tour packages, popular destinations, and the chatbot will provide advisory information to help users make suitable choices.

Travel Itinerary Suggestions: Travelbot offers advice and suggestions on travel itineraries based on user requests and preferences. Users can request advice on travel itineraries, attractive destinations, interesting activities, and the chatbot will provide suitable suggestions.

Answering External Questions: Travelbot runs on the ChatGPT platform, allowing it to answer a variety of questions from users. Travelbot will attempt to provide accurate and useful information based on available data and knowledge.
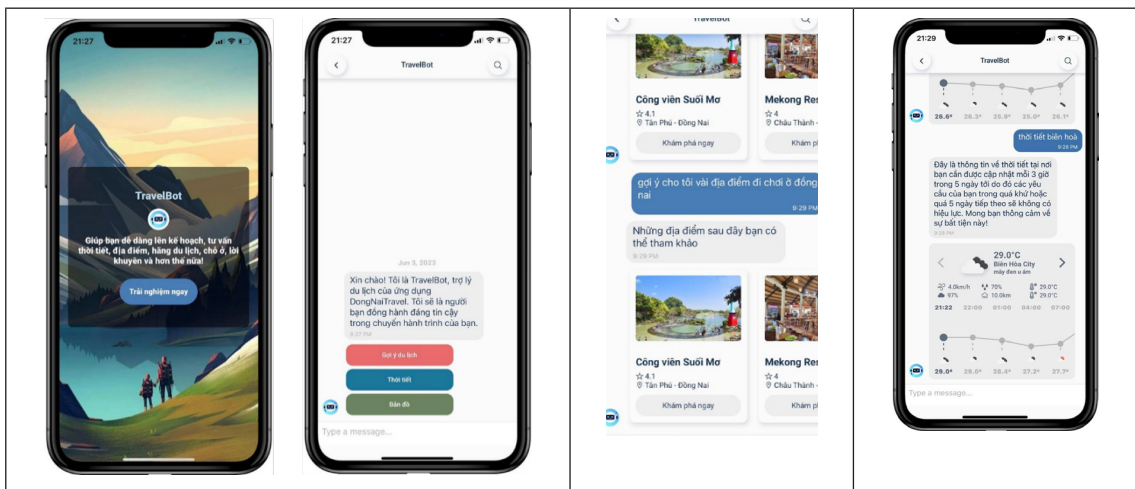

Figure 3. Module Travelbot

3.2. Other modules

In addition to the main modules, the application also includes other modules to become a comprehensive app. These modules are:

Authentication Module: This module plays a crucial role in identifying and authenticating users' identities. It ensures that only authorized users can access the system, thereby safeguarding personal information and important data.

Home Module: The primary objective of this module is to offer an appealing, user-friendly, and intuitive interface. It allows users to conveniently and enjoyably discover information and explore travel experiences.

Places Module: This module assists users in discovering, searching, and learning about tourist destinations conveniently and interactively. It provides detailed information and diverse support for users in selecting and experiencing travel destinations.

Map Module: The Map module helps users easily view maps, search for locations, and receive convenient and efficient navigation directions. It offers detailed information and real-time support for users during exploration and movement within travel destinations.

Blog Module: This module aids users in exploring and accessing information about tourist destinations, experiences, and author shares through blogs. It features a user-friendly interface and flexible search features, allowing users to find and read relevant blogs tailored to their personal needs and preferences.
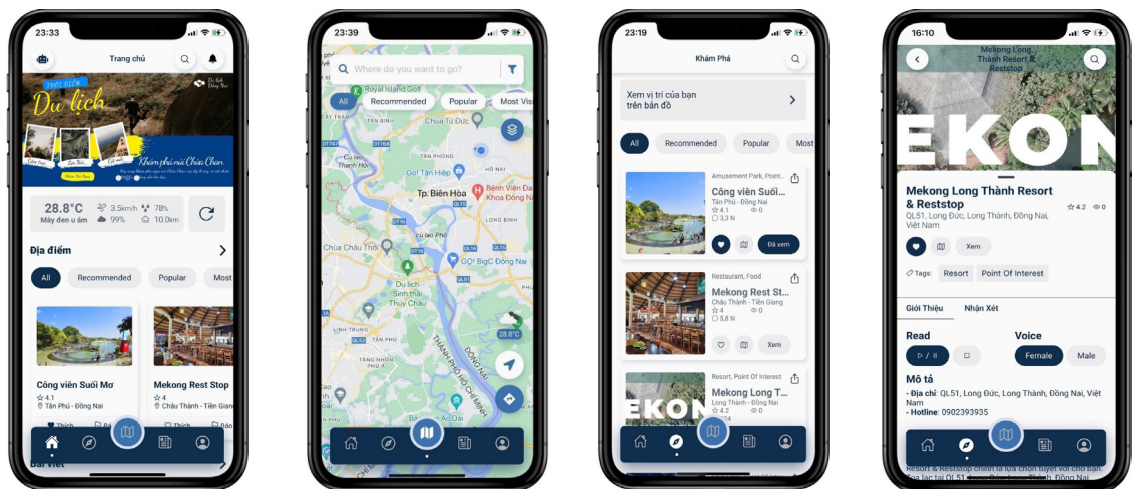
Figure 4. Other modules

4. CONCLUSION

The author team has successfully developed a travel support application integrated with recommendation features based on ChatGPT on mobile devices. The application is capable of providing detailed, diverse, accurate, and useful information for travelers in

choosing destinations, planning, and experiencing their trips. Additionally, the solution aims to address some drawbacks of traditional travel solutions, such as limitations in information sources, accuracy, and objectivity of information, as well as the ability to interact and meet specific customer needs to promote, encourage, and motivate both locals and international tourists to experience tourism.

Some economic and social benefits of implementation: The application will effectively promote and advertise tourist destinations. By providing detailed information about destinations, activities, and amenities, the application will attract more interested tourists and enhance tourism resources in the area. The application can create a tourism community where users can share experiences, suggestions, and reviews about tourist destinations.

The application is deployed across multiple platforms (Android and iOS). With the technical expertise and market availability of materials domestically, especially with the development of smartphones and the internet, using travel apps on smartphones to search for information, plan, and book services has become more popular and convenient than ever. Through practical trials on both Android and iOS phones, the application has demonstrated high performance when running directly, with minimal occurrence of errors.

4.1. Advantages

Convenient and Quick Access: With an information lookup application, travelers can easily search for relevant information about destinations, such as attractions, restaurants, hotels, itineraries, and more. Accessing this information only takes a few minutes and can be done anytime and anywhere with an internet connection.

Detailed Information: The application provides detailed information about tourist destinations, including descriptions, ratings, directions, prices, and images. This allows travelers to gain a deeper understanding of destinations before deciding to visit.

Location and Maps: Integrated with GPS positioning functionality, the application helps travelers determine their current location and find directions to desired destinations. Detailed maps and instructions also assist travelers in navigating easily during their travels.

Reviews and Feedback: Some travel applications offer the ability to view reviews and ratings from previous users. This helps travelers gain an overview of the quality and experience of a specific tourist destination. Additionally, travelers can contribute their own opinions and feedback, helping other users gain a more accurate insight into that destination.

Customizable Itineraries: Some travel applications feature customizable itinerary creation, allowing travelers to plan their trips and manage their activities. Travelers can choose destinations, determine timing, and add activities accordingly.

4.2. Research Directions

Alongside the achievements attained, the author team continues to research to enhance the accuracy of the responses. In addition to the existing technologies used, we

are still exploring additional platforms to ensure the accuracy of recommendations from the application. Furthermore, integrating voice recognition technology and automatic response, integrating hotel booking systems, and multilingual support are also our development goals for the application.

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THE DEVELOPMENT OF AGRITOURISM PRODUCTS
IN NINH THUAN, VIETNAM: PRACTICAL EXPERIENCES AND CHALLENGES

Đặng Thị Minh Tâm[1], Nguyễn Bảo Châu[2]

Abtract: *In modern times, Vietnam has adopted the emerging global trend of agricultural tourism (agritourism) thanks to its richness in agricultural resources and cultural heritage. Among many regions and destinations in Vietnam that have tried to promote different models of agritourism, this paper seeks to investigate Ninh Thuan's potential for agritourism development through primary data collection, interviews with experts, and social questionnaire survey. The findings indicate that the integration of tourism and agriculture in Ninh Thuan has brought promising benefits in various aspects such as diversification of income sources for famers and rural communities, infrastructure development in rural areas, cultural exchange between visitors and local communities, and promotion of sustainable practices. However, the province still faces limitations in infrastructure conditions, exploitation of agritourism resources, and marketing strategies for agritourism promotion. In response, this paper draws recommendations to address the above limitations, proposing strategies for infrastructure improvement, diversification of agritourism products, effective human resources allocation, and tourism market expansion.*

Keywords: *Agritourism; tourism products, Ninh Thuan agriculture.*

Tóm tắt: *Trong bối cảnh Việt Nam, phát triển du lịch gắn với nông thôn đã trở thành một xu hướng tất yếu nhờ vào nguồn tài nguyên nông nghiệp dồi dào và các di sản văn hoá đặc sắc. Nhiều địa phương đã phát triển mô hình du lịch nông nghiệp dựa trên tài nguyên của điểm đến, trong đó có Ninh Thuận. Thông qua những phương pháp nghiên cứu bao gồm thu thập và phân tích dữ liệu thứ cấp, phỏng vấn chuyên gia, và phỏng vấn bằng bảng hỏi, nghiên cứu này tập trung tìm hiểu điều kiện, thực trạng và tiềm năng phát triển sản phẩm du lịch nông nghiệp tại tỉnh Ninh Thuận. Phát triển du lịch gắn với nông nghiệp đem lại cho tỉnh Ninh Thuận nhiều giá trị kinh tế và phi kinh tế; cụ thể là đa dạng hoá hoạt động kinh tế và tăng thêm thu nhập cho các hộ nông dân, chủ vườn ươm và trang trại; nâng cấp cơ sở hạ tầng và cơ sở vật chất - kỹ thuật phục vụ du lịch; trao đổi văn hoá giữa khách du lịch và cộng đồng địa phương; và thúc đẩy phát triển du lịch theo hướng bền vững. Tuy nhiên, tỉnh Ninh Thuận còn gặp nhiều hạn chế trên nhiều khía cạnh, bao gồm điều kiện về cơ sở hạ tầng và cơ sở vật chất - kỹ thuật, hạn chế trong khai thác các tài nguyên du lịch nông nghiệp, và chưa có chiến lược phát triển sản phẩm du lịch nông nghiệp một cách toàn diện và hiệu quả. Từ cơ sở trên, nghiên cứu đưa ra khuyến nghị để khắc phục những hạn chế và đề xuất một số chiến lược nhằm nâng cao cơ sở hạ tầng và cơ sở vật chất - kỹ thuật, đa dạng hoá sản phẩm du lịch nông nghiệp, phát triển nguồn nhân lực phục vụ du lịch, và mở rộng thị trường cho các sản phẩm du lịch nông nghiệp của tỉnh.*

Từ khoá: *Du lịch nông nghiệp; sản phẩm du lịch; nông nghiệp Ninh Thuận.*

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1. INTRODUCTION

In Vietnam, blending tourism with agriculture is not only a trend but also a crucial strategic approach towards the development of rural communes throughout the country. Agriculture makes up 72.84% of Vietnam's economy (General Statistic Office of Vietnam, 2022), thus it's becoming a significant factor that can diversify tourism activities and support sustainable development in tourism.

Agritourism has developed under different forms in regions across Vietnam, such as dairy farms in Moc Chau (Son La), terrace rice fields in Sa Pa (Sa Pa), Tra Que veggetable village in Hoi An (Quang Nam), or Dong Trieu pottery village (Quang Ninh).

In the context of Ninh Thuan, the province possesses plenty of resources that support agritourism development, owing to its favorable terrain, climate, and fertile soil that have given rise to specialized fruit cultivation areas such as vineyards, apples, pears, avocados, dragon fruit, pepper, tobacco, onions, garlic, as well as goat and sheep farming. However, the province has not fully capitalized on its potential in agritourism. The expansion and development of agritourism products in Ninh Thuan are still limited in speed and scale due to various factors such as the accessibility of the province, infrastructure conditions, participation of local communities in agritourism, and policies of local authorities in fostering the development of agritourism.

Thus, this paper seeks to discuss the current development state of agritourism products in Ninh Thuan as well as the challenges it faces in order to draw suggestions and recommendations that can address Ninh Thuan's limitations in agritourism development.

2. LITERATURE REVIEW

2.1. The concept of agritourism

In the context of this paper, the concept of agritourism is to be distinguished from the concept of rural tourism.

UNWTO defines rural tourism as a type of tourism activity in which the visitor's experience is related to a wide range of products generally linked to nature-based activities, agriculture, rural lifestyle/culture, angling and sightseeing. Rural tourism can be divided into sub categories including heritage tourism, cultural tourism, craft tourism, community-based tourism, eco-tourism and agro-tourism (Katsuhiro & Ha, 2013).

Agritourism refers to a form of tourism based upon the agricultural economy which aims to generate values from tourism through the local agricultural system (Phillip, Hunter, & Blackstock, 2010). Therefore, agritourism can be understood as activities in which tourists visit farms and agricultural facilities, or participate in agricultural production activities for the purposes of entertainment, relaxation, or education.

2.2. Tourism product

The concept of a tourism product has been defined through different perspectives. Smith (1994) was amongst one of the earliest researchers who dissected a tourism product into 5 fundamental components including: physical plants, services, hospitality, freedom of choice, and involvement.
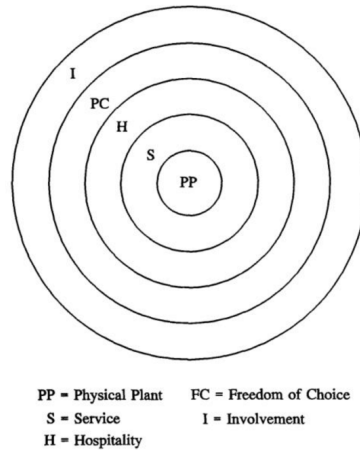

Figure 1. The Tourism Product (Smith, 1994)

According to Smith, the core of any tourism product is the physical plants which include sites, natural resources, and facilities like waterfalls, wildlife, resorts, hotels, or mobile entities such as cruise ships. Additionally, it involves factors like weather, water quality, crowding, and infrastructure conditions. Smith refers to services as the technically-competent performance of a task to make the physical plants useful for tourists while hospitality is the manner or approach in which the task is performed. The concept of freedom of choice refers to the satisfactory range of options a tourist has in travel. The extent of this freedom depends on the purpose of travel such as for pleasure, business, family, or a combination. Finally, involvement is the participation of consumers in the delivery of services. This model encompasess the tourist experience as an essential factor in creating the tourism product through two last elements: freedom of choice and involvement. According to Smith, a tourism product is not just the combination of all 5 components but also the interaction between these elements.

Besides Smith's model, UNWTO also defines a tourism product as a combination of tangible and intangible elements, such as natural, cultural, and man-made resources, attractions, facilities, services and activities around a specific center of interest. A tourism product is then priced and sold through distribution channels and has a life-cycle.

From above definitions, the development of a tourism product does not only focus on the development of resoures both tangible and intangible but also on customer experience of the product itself.

2.3. Tourism product development

Tourism product development can be looked at from two perspectives: it's either the process of creating new products to enter the market or innovating existing products, experiences, and services based on tourist's preferences. Both approaches aim to attract diverse types of tourists which can lead to increased sales of tourism products, fortified marketing positioning, and the exploration of new market opportunities (Melese & Belda, 2021).

Smith (1994) introduced the tourism production process which comprises of 4 distinct stages. Initially, primary inputs which are resources like land, labor, water, buildings, materials, capital, etc. undergo a transformative process to create intermediate inputs. These intermediate inputs include refined facilities such as hotels, parks, resorts, convention centers, and museums. Such intermediate inputs then undergo additional enhancements through managerial expertise, technical services, scheduling and packaging to transform into intermediate outputs. These outputs include services typically associated with the tourism industry such as accommodation, tour services, food services, and festivals. These services then must undergo refinement by consumers to constitute the final output – personal experiences. Smith's model highliths two distinctive features of tourism product development process: first, value is continuously added throughout each production stage; and second, the consumer is an integral participant in the production process.

Table 1. The Tourism Production Function

Primary Inputs (Resources)	Intermediate Inputs (Facilities)	Intermediate Outputs (Services)	Final Outputs (Experiences)
Land	Parks	Park interpretation	Recreation
Labor	Resorts	Guide services	Social contacts
Water	Transportation modes	Cultural performances	Education
Agricultural produce	Museums	Souvenirs	Relaxation
Fuel	Craft shops	Conventions	Memories
Building materials	Convention centers	Performances	Business contacts
Capital	Hotels	Accommodations	
	Restaurants	Meals and drinks	
	Rental car fleets	Festivals and events	

Sources: Smith, S. L. J. (1994)

In a more recent research, Custódio Santos et. al introduced a model of innovative tourism product development which is based on three fundamental components:

1. Identifying destination's core resources for innovative tourism products

2. Determining the transformative experiences provided by these products

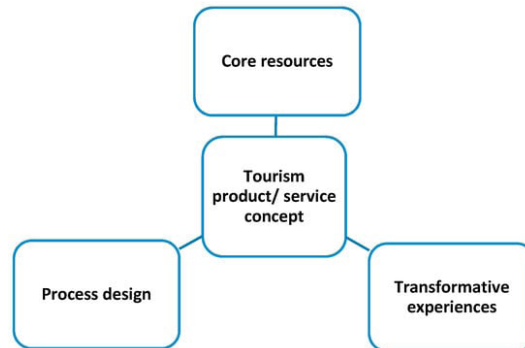3. Establishing the design of product development processes

Figure 2. Framework for Innovative Tourism Product Development (Custódio *et al.* 2020)

Based on the theoretical framework above, Custódio Santos and colleagues have constructed a process for developing tourism products with an emphasis on innovation and creativity. This process consists of the following stages: the design phase, the evaluation phase, the development phase, and finally, the market introduction phase. With this model, the authors integrate the assessment of existing tourism products into the overall process of developing tourism products, emphasizing the purpose of the tourism product development process, which includes both innovating existing products and designing new ones to meet market demands.

2.4. Tourism product development in agritourism

Based on the concepts of tourism products and studies on tourism product development mentioned above, this paper refers to tourism product development in agritourism as a process of designing, expanding, and enhancing experiences and activities related to tourism in agricultural and rural areas. This process involves integrating agricultural elements into tourism activities to create an engaging and educational experience that promotes sustainability development in tourism. Such agricultural elements include agriculture produce cultivation, livestock farming, processing agricultural products, and rural landscapes. Thus, the development of agritourism products provides opportunities for farmers and rrual communities to leverage their resources in order to generate additional income and promote economic and social development in rural areas.

3. RESEARCH METHODS

3.1. Research framework

This research uses a combination of both quantitative and qualitative methods as shown in the framework below (Figure 3). Data is collected to analyze and synthesize concepts related to agritourism development. This method is then combined with expert

interviews to identify factors and conditions for agritourism product development. Additionally, this research carries out questionnaires to gather tourists' evaluation of agritourism products in Ninh Thuan. From there, the author conducts a SWOT analysis which establishes a foundation for drawing recommdations for the development of agritourism products in Ninh Thuan.
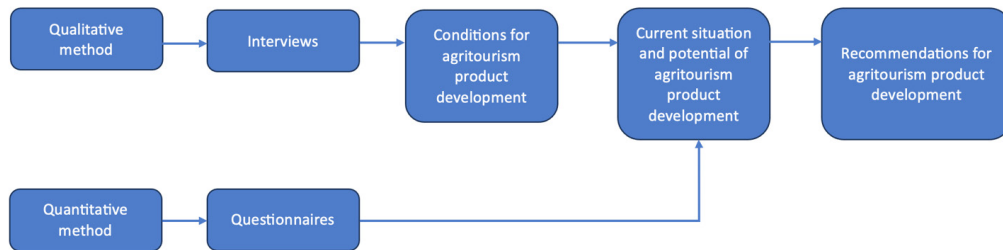

Figure 3. Research framework

3.2. Primary data colletion

Primary data is collected from local management agencies, namely the Department of Culture, Sports and Tourism, the Tourism Information and Promotion Center, and Ninh Thuan Tourism Association, Ninh Thuan Statistics Office, the Ministry of Culture, Sports and Tourism, Vietnam National Administration of Tourism, and the General Statistics Office. Additionally, data is also collected from scientific research, books, and journals published on reputable and realiable websites as well as reports from tourism management agencies in Ninh Thuan. After collection, data is organized, analyzed and synthesized to serve the research purposes.

3.3. Interviews

Interviews are conducted with 7 experts including university lecturers, travel business professionals, and officers at state offices who have a keen interest in the research and development of agritourism (Table 2). These interviews aim to gain in-depth insights into agritourism resources and factors influencing agritourism development. From there, the interviews sought opinions on implications and recommendations for developing agritourism in Ninh Thuan.

Table 2 . Lists of Experts and Professionals forInterview

Name	Place of work
Expert 1	Investment, Trade, and Tourism Center of Ninh Thuan
Expert 2	The Department of Culture, Sports, and Tourism of Ninh Thuan
Expert 3	Ho Chi Minh University of Agriculture and Forestry, Ninh Thuan Sub-Campus
Expert 4	Tan Loc Co.,Ltd. Phan Rang – Thap Cham, Ninh Thuan
Expert 5	Academy of Finance, Ho Chi Minh City

| Expert 6 | Vinh Toan Travel Co.,Ltd. Hanoi |
| Expert 7 | Hai Dang Travel Co.,Ltd, Ho Chi Minh City |

3.4. Questionnaires

Questionnaires are conducted to assess the current state of agritourism development in Ninh Thuan. Questionnaires are distributed to tourists through a Google form link in order to gain tourists' evaluation of Ninh Thuan's conditions for agritourism development. The author collected a total number of 231 valid responses.

4. FINDINGS AND DISCUSSION

Interviews with 7 above-mentioned experts and professionals indicate that there are specific factors that pose great impacts on the development of agritourism products in Ninh Thuan, namely government's and local authorities' policies on agritourism development; the condition of infrastructure and facilities; characteristics of tourists visiting Ninh Thuan; the exploitation of current agritourism resources and products; the participation of local community in agritourism development; and the cooperation of related parties.

4.1. The current state of agritourism products development in Ninh Thuan

- Government's and local authorities' policies

The decree 922/QĐ-TTg issued on 02 August 2022 by Prime Minister of Vietnam approved the rural tourism development program for the period 2021-2025. This program focuses on shifting from traditional agricultural cultivation and production to rural's economic growth and development; promoting sustainable development for rural tourism; and encouraging local communities and enterprises to participate in rural tourism development. Acting upon this decree, Ninh Thuan has implemented proactive policies to support agritourism development as an integrated sector of rural tourism. Such policies include plans for infrastructure development, rural area restructuring, application of advanced technology to agricultural cultivation, and implementation of One Commune One Product (OCOP) to promote local agricultural produces.

Three models of agritourism that Ninh Thuan has been implementing include:

- Fruit orchards in lam son, ninh son, ninh thuan.

- Culture and heritage tourism of the raglai ethnic group in churur, phuoc binh, bac ai and in phuoc binh national park.

- Grape orchard in thai an and culture tourism of the raglai ethnic group in cau gay commune, vinh hai, ninh hai.

Ninh Thuan's policies to support agritourism development emphasize the collaboration of related parties which are farmers; local community; enterprises; and local authority

departments and offices including the Department of Agriculture and Rural Development, Department of Science and Technology, Department of Culture, Sports and Tourism, Department of Natural Resources and Environment, and People's Committees of districts within Ninh Thuan.

- Infrastructure and facilities

Ninh Thuan's transportation system has been improved drastically during the period 2011-2020. The National Highway No. 1A runs parallel to the province's borders; the National Road No. 27A connects Ninh Thuan to Dalat and the southern part of Central Highlands while the 27B provides a vital link from Ninh Son – Ninh Thuan to Cam Ranh – Khanh Hoa. These systems of roads allow accessibility by car from all Ninh Thuan's communes to their respective centers. Thus, tourists who visit Ninh Thuan can easily get access to agritourism sites. Thai An grape orchard and Dam Vua salt field are both located on the National Road No. 702 which leads directly to Vinh Hy Harbour, allowing tourists to incoporate visting these two sites in their trip to Vinh Hy. An Hoa sheep farm, another famous agritourism site, is only 16 kilometers away from Phan Rang – Thap Cham and can be accessed through the National Highway No. 1A. Craft villages like Bau Truc Pottery Village and My Nghiep Brocade Weaving Village are located on the National Highway No. 1A and only 10 kilometers to the South of Phan Rang – Thap Cham. Overall, the routes to agritourism sites in Ninh Thuan are quite scenic, accessible and convenient, providing favorable conditions for tourists for access and explore.

However, the transportation system in Ninh Thuan primarily connects the North – South direction and there is currently no East – West transportation link, making it difficult to connect mountainous districts with the central urban area and the coast. In addition, as the National Highway No. 1A is the main road that runs along the province, it endures a heavy amount of traffic, often causing congestion and safety concerns for travelers. Besides, the only way to get to Ninh Thuan by air is through Cam Ranh International Airport which is located in Khanh Hoa provicne as there are no civilian airports in Ninh Thuan. The restoration of the railway route from Dalat to Ninh Thuan is not completed yet and the Doc Ham – Ca Na seaport is also not fully utilized. These limitations in the province's transportation system are factors that slow down the economic and tourism development of Ninh Thuan.

In terms of accommodation facilities, the Phan Rang – Thap Cham and Ninh Hai areas are where accommodation facilities are primarily located. According to the Statistical Office of Ninh Thuan, as of 2018, the province had 132 registered accommodation establishments, providing a total of 2,150 rooms. In 2019, there were 141 establishments with 2,752 rooms, and 150 establishments with 3,300 rooms in 2020. As of 2021, the numbers rose up to 166 establishments with a total of 3,452 rooms, which was a

4.6% increase compared to 2020. The majority of these establishments are homestays and farmstays offering agricultural experiences and practices such as cultivating and harvesting. Even though the number of accommodation facilities rose up each year, the quantity is still inadequate with many unregistered and substandard establishments run by local people. The number of 3-star rooms only accounted for 40%, there are no 5-star facilities, which puts limitations on attracting both domestic and international tourists.

- Characteristics of tourists visiting Ninh Thuan

From 2016 to 2019, the number of tourists grew rapidly with an average annual increase of 162,500 visits. However, in 2020, due to the impact of the pandemic, the number of tourists dropped to only as half the number in 2019. Moving into 2022, thanks to Ninh Thuan's efforts in tourism recovery and development, the province recorded 2.4 million visits. And in the first 6 months of 2023, the number already reached 1.7 million visits, which is an obvious proof for the positive recovery and growth in Ninh Thuan's tourism industry after Covid-19.

The primary target market for Ninh Thuan's tourism is still the domestic market which accounts for about 95% of the province's total number of tourists. The majority of domestic tourists coming from Hanoi, Ho Chi Minh City, and provinces in the Northen and Southeastern regions of Vietnam. Meanwhile the majority of international tourists come from Eastern European countries including Russia, Ukraine, and Poland. International tourists visit Ninh Thuan mostly for its warm climate with beautiful coastal and scenic landscape.

Amongst tourists visting Ninh Thuan, those who participate in agritourism activities are families who want to combine tourism activities with educational experiences and individual travelers who seek nature experiences. Families often have a preference for speciality products, clean agricultural produces, and tourism services catered to young children. On the other hand, individual travelers seek to explore unique agritourism models and prefer a community experience, thus homestays and farmstays are usually their accommodation of choice.

- The exploitation of current agritourism resources and products

The management system for tourism in Ninh Thuan consists of the Department of Culture, Sports, and Tourism; the Tourism Promotion Center; and the Department of Culture and Information which serves as an advisory agency to the People's Committee on tourism development. Besides these state offices and departments, the Ninh Thuan Tourism Association operates on a self-managed and self-funded basis but still has legal responsibilities. This association consists of travel companies, accommodation establishments, food service outlets, agriculture-related establishments, and representatives

of traditional craft villages. Together with the state offices and departments, Ninh Thuan Tourism Association contributes to the implementation of tourism activities in Ninh Thuan and fosters positive collaboration between related parties to promote tourism. In terms of agritourism, these above departments, offices and association also play a huge role in managing the exploitation of agritourism resources and products.

Some signature agritourism experiences and products that are currently available in Ninh Thuan include: Visiting grape orchards; Visiting sheep and goat farms; Visiting salt fields; Visiting cham ethnic's craft villages ; Attending ninh thuan's grape and wine festival; Shopping agricultural produces and craft products .

Visiting grape orchards

Ninh Thuan is very well-known for growing and distributing grapes. Grapes grown in Ninh Thuan are distributed to major markets including Hanoi, Da Nang, Nha Trang, Ho Chi Minh City and are used in production of different products such as grape jam, raisins, grape syrup, wine, and grape juice.

Grape orchard tours are usally combined with visits to other tourist destinations, such as Vinh Hy Bay or craft villages. Notable grape orchards in the province include Thai An Agriculture Cooperative, Ba Moi Grape Orchard, and Hoang Yen Grape Orchard. These grape orchards offer tourists a wide variety of experiences rainging from sightseeing to harvesting. Tourists are often introduced to diverse grape varieties, grape cultivation techniques, wine-making process, and local specialties made from grapes. Picking grapes and learning to make wine are also common activities preferred by tourists. With making wine, they receive step-by-step instruction from orchard owners, from grape selection, fermentation, aging and bottling. Furthermore, tourists indulge in tasting products made from grapes and purchase agriculture products directly from the orchard itself. Direct interaction with the orchard and the orchard owner provides tourists with a more authentic experience.

Visiting sheep and goat farms

From 2016 to 2020, Ninh Thuan experienced significant transformations in the scale and techniques of goat and sheep farming in order to meet market demands. The traditional practice of extensive farming at farmer's households has shifted towards concentrated and specialized farming. Advanced technology and farming methods were implemented to minimize environmental impacts and help Ninh Thuan build a reliable brand for its goat and sheep through regular vaccinations, improvement of breeding quality, and expansion of the farm size.

Apart from their nutritional value, goat and sheep farming has been integrated with tourism to make contributions to the economy. The most common activity is goat and sheep farm tours. Since goats and sheep hold great values in Cham ethnic's culture and

beliefs, by visting goat and sheep farms tourists have an opportunity to gain insights into the customs, traditions and way of life of the local community. Besides, through observation, tourists can get to know more about the entire livestock farming process, including how the animals are fed and cared. Tours to goat and sheep farms do not only offer tourists with an authentic and unique experience but also enhance their awareness of farming practices' impacts on the environment and promote sustainable tourism.

Ninh Thuan's Grape and Wine Festival

The Grape and Wine Festival was first held in Ninh Thuan in 2014 and has since become a biennial celebration in the province. This festival is held to showcase and promote grapevines, grape-based products, and most importantly to honor the significant value of grapes and the hard work of farmers. The festival highlights Ninh Thuan's potentials in agricultural economy and helps the province attract potential investments.

In 2023, the Grape and Wine Festival featured a wide range of activities including a trade fair, a food festival, street art performances, showcases of ethnic groups and craft products, and workshops on growing grapes and products made from grapes. The festival attracted not only tourists but also professionals and experts from research institutes, universities, enterprises, and wine producers from within and outside the province. Additionally, the festival was a platform for farmers to showcase their products, establish trade connections, foster cooperation and exchange cultivation experiences with each other.

The survey reveals that amongst these above agritourism products and experiences, visting grape orchards and visting goat and sheep farms are more common with tourists. Other activities such as visting craft villages, shopping for agricultural produces and handicrafts also attract a great number of tourists. These are all distinctive agritourism products with high experiential values. The activity of visiting salt fields receives less attention due to its limited interaction between tourists and local farmers.

- Participation of local community

Local farmers in Ninh Thuan have actively engaged in offering different agritourism activities and experiences to tourists. They have essential knowledge about distinctive agricultural products and extensive experience in cultivating, preserving and maintaining natural resources. The local community and farmers in Ninh Thuan primarily offer basic services to tourists which include accommodation facilities (mostly homestays and farmstays), food services, transportation services (taxis, motorbike rides, buses between the airport and tourist destinations), tour guiding services, and sales of souvenirs and local specialties. However, these services are still at small-scale and do not offer a differentiated value to tourists. Though local farmers have a positive, open and friendly attitude, their experience in tourist engagement is still limited as they lack communication skills and a sense of business.

- Cooperation of related parties

The development of agritourism products in Ninh Thuan is closely tied to the production of local agricultural products. Related parties including businesses, cooperatives, and farmers have been working together to create agricultural products that meet the OCOP standards in order to establish an agritourism brand for Ninh Thuan. Thus, in 2023 the province planned to inviest nearly 4.5 billion VND on additional 20 to 30 OCOP products and upgrade at least 50% of previously rated OCOP products.

An interview with a grape orchard owner in Van Hai, Phan Rang – Thap Cham reveals that grape cultivation has faced challenges in the past as farmers lacked knowledge about cultivation methods, which then led to low production efficiency and eventually difficulties in product distribution. Many cooperative models have then been established to address these issues by providing support and guidance to farmers, improving both the quantity and quality of grapes. The participation of cooperatives has created favorable conditions to foster agritourism activities such as grape orchard tours in this case.

In addition, state departments and offices in Ninh Thuan have implemented policies for agritourism development across 13 locations including ecotourism villages such as Bo Lang ethnic village and Raglai ethnic village in Bac Ai district, Vinh Hy village and Cau Gay village in Ninh Hai district, Thai An grape orchards in Vinh Hai district, Bau Truc pottery village, Chung My and My Nghiep traditional weaving villages. The province has also invested in different aspects to support tourism such as upgrading infrastructure through building community houses and public toilets in tourist destinations, training local communities on creating unique agritourism experiences and products, and propagating information about local agritourism products and experiences.

Overall, the support for agritourism development in Ninh Thuan is carried out with the involvement of various related stakeholders such as the Department of Culture, Sports, and Tourism; the Department of Agriculture and Rural Development; the Department of Planning and Investment; the Department of Finance, the Department of Natural Resources and Environment; the Department of Industry and Trade; Ninh Thuan Newspaper, Radio and Television Station, People's Committees of districts; and local farmers and commnuities.

4.2. SWOT analysis of ninh thuan's potentials for agritourism product development

- Strengths: Ninh Thuan has favorable conditions for agritourism development in terms of its geographical location and tourism resources. Ninh Thuan has a strategic location for economy and tourism development. The province shares border with Khanh Hoa province, Lam Dong province, and Binh Thuan province, thus it links to the above three provinces' popular tourist destinations including Nha Trang, Da Lat and Phan Thiet re-

spectively. In terms of resources, Ninh Thuan has a diverse range of agritourism resources including scenic agricultural landscapes, dinstinctive agriculture products, and Cham's culture with unique agricultural customs and traditions

- *Opportunities:* Due to Ninh Thuan's strategic location and its link to popular tourist destinations, the province has the opportunity to attract international markets, especially high-end markets and those in Eastern Europe. The province can also secure investments for infrastructure development, entertainment complexes, and tourism development projects. Ninh Thuan's tourism resources expose the province to opportunities to create innovative and competitive tourism products. The province can apply advanced technology in agricultural production, which contributes to the development of building an exlusive brand for Ninh Thuan's agricultural goods. Especially in this post-Covid-19 period, tourists have shown great interest in forms of tourism that emphasize proximity to nature, activities with educational and experimental values, relaxation and healthcare. Ninh Thuan can seize this opportunity to cater to the needs of tourists by developing distinctive agritourism products and experiences.

- *Weaknesses:* Due to the lack of a comprehensive guidance from Ninh Thuan's state departments and offices, the province hasn't exploited its abundant tourism resources effectively and hasn't actually paid much to the development of agritourism. Public infrastructure, technology applications, and variety of services in Ninh Thuan are still limited and have not yet catered to the diverse needs of tourists. In addition, efforts made for agritourism promotion have been inadequate, which results in a relatively modest number of tourist visits to Ninh Thuan in comparisons with other tourist destinations.

- *Threats:* Ninh Thuan's location in relation to Nha Trang, Da Lat, Phan Thiet brings opportunities for the province to attract more tourists but it also increases the level of competitiveness for the province to create tourism products and experiences with a differentiated value. Moreover, in terms of agritourism, the development of this sector needs to go hand in hand with sustainable tourism development. Therefore, local farmers need to take into consideration sustainable cultivation practices when utilizing agricultural products for tourism activities.

5. RECOMMENDATIONS FOR AGRITOURISM PRODUCT DEVELOPMENT IN NINH THUAN

With the SWOT analysis and results discussed above, Ninh Thuan has a great potential to develop agritourism and to create innovative agritourism products and experiences. However, the province still faces limitations in certain core aspects that directly effect the development of agritourism products. Thus, this part draws recommendations to address the difficulties and challenges that the province faces as mentioned above.

5.1. Recommendations on agritourism development policies

Ninh Thuan's policies for agritourism development need to follow closely the guidance provided by the Government, especially the Resolution No. 82/NQ-CP and the Acree No. 922/QD-TTg. Based on the Resolution No.82/NQ-CP, Vietnam shall promote tourism products relating to agriculture, rural scenery, and community culture. The Resolution also states that tourism products should focus on improving tourist experiences, maximizing tourism in agricultural areas, associating tourism with rural areas and farmers, and developing rural occupations especially in craft villages and in service providing areas. The Acree No.922/QD-TTg outlines the development purposes for rural tourism, in which rural tourism should be based on the potential of the destination's agriculture, culture, craft villages, and environment.

Taking these guidance into consideration, Ninh Thuan needs to focus on transforming agritourism into economic activities by improving public infrastructure, restructuring the tourism market, diversifying tourism products, and promoting local agritourism brands.

5.2. Recommendations on infrastructure improvement

In terms of infrastructure, there's a need to upgrade the quality and ensure traffice safety for the National Highway No. 1A, 27A and 27B as they are still the main routes for tourists to travel to and from Ninh Thuan. Besides the current road systems that are in use, the province should consider building a transportation network that connects the East and the West, restore the railiway line from Phan Rang – Thap Cham to Da Lat, exploit the full potential of Ca Na seaport, and develop inland waterway services to provide more transportation options for tourists.

Regarding accommodation facilities, policies should be made to encourage investments for building accommodation facilities that actually meet the standards of 3-star or above to be able to meet the demands of tourists. The province should promote homestays and farmstays run by local farming households to encourage tourists to be close to nature and have exposure to available agritourism resources.

5.3. Recommendations on human resources

Human resources is a primary factor that makes a direct impact on tourism development. Especially if Ninh Thuan wants to ensure a sustainable development for agritourism products, the province needs a large workforce with great knowledge and skills from both travel businesses and local communities.

First and foremost, the province needs to create favorable conditions for local communities and farmers to participate in tourism activities. They should receive both financial support for agriculture cultivation and training to organize and provide tourism services on their properties.

Local communities and farmers should also be encouraged to start up their own businesses, or to form cooperatives to explore opportunities in the tourism market.

With the current workforce and those who are to work in tourism, they should be equipped with knowledge and skills on how transform agriculture resources into tourism products and services, as well as on how to promote and market their own tourism products. Such knowledge and skills can be transferred and spread through workshops, seminars or simply get-togethers between experts, farmers, and travel businesses. More importantly, events like workshops and seminars are an efficient way to create a cooperative network between different stakeholders, from there increase their awareness of the potential and benefits of agritourism.

5.4. Recommendations on creating differentiated agritourism products

Ninh Thuan's geographical location and climate conditions have created favorable conditions for to grow a variety of distinctive agricultural products including grapes, apples, onions, garlic, asparagus, aloe vera, etc. and to raise goats and sheep. From these resources, the province has developed several agritourism products and experiences that help shape a tourism identity for Ninh Thuan.

The two most common experiences are visting grape orchards which allows tourists to learn about Ninh Thuan's grapes and participate in the harvesting process, and visting sheep and goat farms which exposes tourists to an authentic life on farms of local people. To further develop these existing agritourism models, it is necessary to support farmers in applying advanced technology applications on agriculture practices to improve the quality of their products. This includes using organic fertilizers, efficient irrigation management, and environmentally friendly farming practices. Especially, the province should promote the development of organic farming as organic products often have higher value and can cater to tourists who take an interest in health and the environment.

5.5. Recommendations on tourism market expansion

Ninh Thuan primarily receives attention from domestic tourists while international tourists only account for a very small market share. Thus, the province should continue to focus on attracting and retaining domestic tourists by promoting Ninh Thuan's tourism on different media channels, social networks, and travel agencies. Events, festivals and promotion programs should be held to highlight the province's agritourism resources to increase the level of competitiveness for the province. To attract tourists from international markets, Ninh Thuan needs to explore opportunities for collaboration with international partners, travel agencies, and embassies to introduce and promote agritourism products. The province should have representatives participating in international tourism exhibitions and conferences to expand the market. Especially for the target Eastern European market, market research should be carried out to better understand the needs of tourists in order to create a comprehensive marketing strategy.

6. CONCLUSION

To summarize, Ninh Thuan has a promising opportunity to develop distinctive agritourism products due to its geographical location, climate, and unique agritourism resources. The province has utilized these advantages to create several agritourism products with high educational and experiental values despite still having limitations in crucial aspects including infrastructure conditions, exploitation of tourism resources, and participation of local community in tourism development. Thus, it's necessary for the province to have comprehensive promotion strategies and build strong collaboration with stakeholders both inside and outside of the province to further develop its agritourism products, making Ninh Thuan an attractive and sustainable tourist destination in the future.

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POTENTIAL OF DIGITAL TECHNOLOGY IN THE 4.0 CONTEXT FOR THE HOSPITALITY INDUSTRY IN VIETNAM

Trần Đức Thành[1]

Abtract: *This study delves into the digital technology potential in the context of Industry 4.0 within the Vietnam hotel industry. The contents encompass key aspects such as the roadmap for digital technology orientation and development, the organization of operations, digital data management, leveraging existing potential within hotels, and utilizing online marketing tools for customer outreach. Additionally, it explores strategies for training, recruitment, and the development of a proficient digital-specialized workforce to enhance future hotel operational activities.*

Employing a quantitative research approach, the authors primarily focused on descriptive statistics and statistical analysis. The sample size comprised 220 participants, divided into two main survey sections: demographic content and a cluster of 4 factors measured by 16 observed variables. These participants represented hotel management across a range of 1 to 5-star hotels in Vietnam. Geographically, the survey ensured a relatively even distribution across the North, Central, and South regions. The research results identify the digital technology potential of Vietnamese hotels in the context of industry 4.0.

Keywords: *Digital technology potential, 4.0 context, hotels*

Tóm tắt: *Nghiên cứu này tập trung vào tiềm năng công nghệ số trong bối cảnh công nghệ 4.0 của ngành khách sạn ở Việt Nam. Các nội dung để cập đến đó là kế hoạch định hướng công nghệ số và lộ trình phát triển; tổ chức vận hành và quản lý dữ liệu số; kế thừa tiềm năng sẵn có của các khách sạn và tận dụng các công cụ tiếp thị trên không gian mạng để tiếp cận với khách hàng; tập huấn, tuyển dụng và phát triển đội ngũ có năng lực chuyên môn kỹ thuật số phục vụ cho hoạt động kinh doanh vận hành khách sạn sau này. Phương pháp nghiên cứu định lượng, nhóm tác giả chỉ tập trung vào thống kê mô tả và phân tích thống kê mô tả, với kích thước mẫu n = 220, phần khảo sát chia làm 2 nội dung chính đó là nội dung nhân khẩu học và nhóm 4 nhân tố được đo lường bởi 16 biến quan sát trên 220 cán bộ quản lý đại diện cho 220 khách sạn từ 1 sao đến 5 sao ở Việt Nam, với tỷ lệ phân vùng địa lý khảo sát Bắc – Trung – Nam tương đối đồng đều. Kết quả nghiên cứu xác định được tiềm năng công nghệ số của các khách sạn Việt Nam trong bối cảnh công nghệ 4.0.*

Từ khóa: *Tiềm năng công nghệ số, bối cảnh 4.0, khách sạn*

1. INTRODUCTION

Since the inception of human civilization, our world has undergone four technological revolutions, each marked by ground-breaking innovations with strategic orientations, reshaping the entire of production approach. The first industrial revolution commenced in 1784, characterized by the utilization of water, steam power, and mechanized production. By 1860, the second industrial revolution unfolded, marked by the adoption of electric power and the establishment of large-scale production lines. Subsequently, the third technological

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revolution in 1960 witnessed the advent of information technology, leveraging electronics for automated production—an epoch often denoted as the computer or digital revolution. Entering the 21st century, the fourth industrial revolution has materialized, building upon the advancements of the digital revolution and introducing new technologies such as 3D printing, robotics, artificial intelligence, the Internet of Things, nanotechnology, biotechnology, and innovative materials technology. The emergence of the Industry 4.0 revolution serves as a harbinger for the development of various sectors, encompassing the economy, science and technology, manufacturing, and especially the tourism and hospitality industry.

In the era of Industry 4.0, the hotel industry undergoes a transformation through the integration of digital technologies such as artificial intelligence, robotics, the internet of things, big data, and digital marketing to enhance customer engagement (Osei *et al*, 2020b). Leveraging digital advancements, travellers can virtually explore destinations and hotel accommodations before making reservation decisions. Hotel services are seamlessly integrated with guests' personal devices, including smartphones and laptops. Notably, some hotels have embraced robotic staff, assuming roles like receptionists, luggage handlers, and door attendants. Virtual reality allows hotels to showcase their complete range of services, while augmented reality applications guide guests to the hotel on their smart devices (Ivanov *et al*. 2017; Osei *et al,* 2020b) . Big data plays a pivotal role in the hotel industry by capturing guest information and preferences, enabling targeted approaches to introduce tailored services. The incorporation of machines, facial recognition technology, artificial intelligence, and the Internet of Things facilitates efficient task management without incurring additional monthly labour costs, ultimately optimizing the guest experience during their stay (Egan and Haynes, 2019).

In the context of the fourth industrial revolution, the Vietnam hotel industry finds itself at a crossroads, offering both opportunities and formidable challenges for hotel businesses. Before integrating into the digital environment, hotel enterprises are advised to meticulously assess the existing technological potentials within their hotels. This strategic evaluation is designed not only to capitalize on inherent strengths and rectify existing shortcomings but also to optimize digital applications and minimize upfront investment costs, thereby ensuring streamlined and efficient hotel operations. Through this article, the authors aim to provide comprehensive insights into the identification and strategic utilization of the digital technology potentials within hotels, tailored for effective integration within the framework of the fourth industrial revolution.

2. THEORETICAL BASIS AND RESEARCH LITERATURE REVIEW

Industrial revolution 4.0 is in the development stage and will impact all socio-economic fields, opening up many opportunities to develop economic sectors in Vietnam, including the hospitality industry and tourism businesses. The integration of

people, territories, things and systems in cyberspace. Objects and services are connected by sensors, radio frequency identification, software and mobile phones in a common network so that information is analyzed and all things, phenomena and people are reached highly interactive and connected in real time (Pencarelli, 2020). In tourism business and hospitality industry, 4.0 technology applications are developing rapidly, aiming for high connectivity in the tourism industry to serve tourists. Some technology applications such as websites, network technology systems, internet of things (IoT), big data (Big data), artificial intelligence (AI), virtual reality (VR), augmented reality (AR), cloud computing, wireless communication, robotics, 3D printing, simulation, blockchain, location-based services, and traveler mobile phones (Pencarelli, 2020). Hospitality and tourism business in the context of 4.0 technology is an ecosystem that brings new and useful values based on high technology platforms such as interoperability, virtualization, decentralization, and collection capabilities. Real-time, service-oriented and modular data collection and analysis. In the tourism service industry, technology can perform routine standard tasks such as booking and managing rooms (Pencarelli, 2020; Solnet *et al.*, 2019). Digital data assists staff in greeting customers by name in a quick, friendly manner and recalling the customer's previous history. Robots are often used to provide services on the front line and in repetitive tasks such as hotel concierge robots, check-in and check-out service robots, bartending robots, food serving robots, Food delivery robots, waiter robots in restaurants, delivery robots to hotel rooms, cleaning service robots, dish washing robots, floor cleaning robots, security robots, and entertainment robots. In addition to baggage delivery support, receptionist, and operations jobs, robots can be used to perform predictive analysis jobs. Chatbots use AI to answer customer questions quickly in many different languages in real time. Big data to predict customer needs and personalize customer experience, helping to increase hotel business efficiency. The Internet of Things allows wireless data connection of all furniture in the room to be able to look up, send and receive data and control remotely in real time (Buhalis, 2020). Acoording to (Osei *et al*, 2020b), there are six technological elements of fourth industrial revolution (FIT) for the tourism and hospitality industry. Based on the advanced technologies applied currently in the industry, these technologies promise both hospitality businesses and consumers a more relevant information, greater mobility, better decision support, and more enjoyable experiences (Osei *et al.*, 2020b, p. 31). These six key generic FIR technologies are cyber physical systems (CPS), Internet of things (IoT), advanced robotics (AR), cloud computing (CC), artificial intelligence (AI) and big data (BD) (see Figure 1).
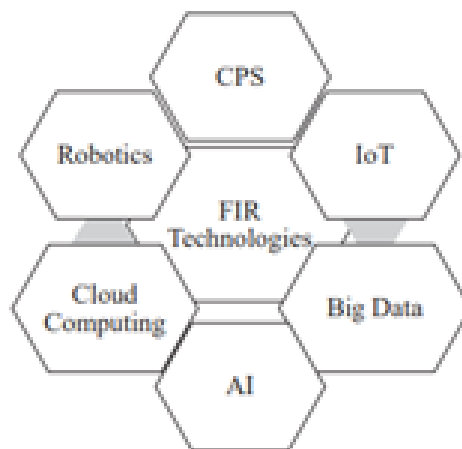
Figure 1. Key technologies of the FIR for the tourism and hospitality industry

Source(s): Osei, Ragavan, Mensah & Kandappan (2020)

These technologies also served as the basis for this study, which assisted in the enquiry on the preferred FIR technologies for the hospitality industry. These technologies are explained in turns below.

Cyber physical systems (CPS) for the tourism and hospitality industry is defined; "advanced technological systems or platforms, that allow and manage the interconnection or integration of computational capabilities and physical assets and also facilitate the interaction with human living and existence" (Osei *et al,* 2020b). For the hospitality industry, CPS has been highlighted to provide some benefits along with its implementation. These include CPS usage for effective data or information collection, management, analysis and sharing. Also, CPS has the ability to ensure cost and time efficiency with production as well as communication efficiency among other technological systems within the work environment (Chen, 2017).

The Internet of Things (IOT) is "a network of physical and virtual objects intended to collect, share or exchange information through a unified platform over the Internet, enabling automated solutions to many groups of problems. topic" (Osei *et al.* 2020b). IOT serves as a bridge between the physical and digital systems of the current industrial revolution. Studies have also classified this technology as one that will realize the full potential of FIR. Advantages of IoT include improving decision making, ensuring productivity and optimizing operational efficiency by connecting different systems over the Internet, this technology becomes a driving force for tourism business and hospitality around the world, especially in difficult times when the Internet has become a global field of exploitation.

Cloud Computing (CC) based on existing technologies such as distributed computing, virtual computing and cluster computing, cloud computing is one of the inevitable

technologies that is considered very convenient as well as the basic utilities of human life. The use of cloud computing in an organization involves a seamless transition of traditional service processes to cloud-based solutions. It is worth noting that cloud computing relies on other technologies, especially internet of thing, to implement its complete services. Therefore, with cloud computing, the technology is not present in the workplace where the service takes place but is controlled and managed by sophisticated scalable systems over the Internet at a remote location (Zhong *et al,* 2017). Cloud computing is: "a technological concept that deploys infrastructure, applications, and data resources over the internet as a distributed service by a service provider; based on virtualization, scalability, on-demand, and pay-per-use basis" (Osei *et al,* 2020b). For tourism and hospitality industry, the benefits of cloud computing include saving on data storage and management costs, optimizing resource usage, advanced virtualization, and scalability.

Big Data (BD), continuous advancements and adoption of technological systems such as internet of thing, cyber physical systems and utility computing, along with the proliferation of smart devices have also brought about an exponential increase in data; and thus one of the popular literary terms, big data is appeared (Egan and Haynes, 2019). According to authors (Osei *et al*, 2020b) theorized big data in their study as "a general technological term used to describe the attributes of volume, variety, velocity, authenticity, value, collect, process, manage, analyze, system and secure digital data, which is beyond the capabilities of traditional data management and analysis methods; within an acceptable and convenient period of time". Today, organizations and societies continuously witness an exponential increase in data from almost every system including social media networks, sensors, customer log files and feedback, transaction application systems, machines. It is worth mentioning that big data as a technology of this industrial revolution offers outstanding applicability for data management, predictive analytics and decision making for the tourism and hospitality industry.

Artificial intelligence (AI) has developed from just simulating human activities, building automatic working systems, creating robots with simple tasks to creating complex machines, machine learning advanced, deep learning and multitasking robotics (Osei *et al.*, 2020a). AI is "human-based intelligence, distinct from natural intelligence, that allows machines to learn without explicit programming and tasks to be automated with little human intervention; along with the environmentally friendly ability to realize goals through maximizing opportunities and solving problems" identified by (Osei *et al,* 2020b). AI is a broad technological idea that harbours a lot of existing and emerging technologies, which include robotics, natural language processing, speech recognition, virtual agents, machine learning, augmented reality. The obvious benefits of AI for the tourism and hospitality

business are its ability to enable employees to avoid repetitive and monotonous works; which ensures free time that can be used for other innovative assignment (Ivanov *et al*, 2017). Some key AI technologies for hospitality businesses are self-service mobile check-in, keyless systems, information kiosks, automated room systems, mobiletele-presence.

Advanced Robotics (AR): Robots are a part of various technological elements of AI with a foundation of computer science and engineering that can create robots, Robots developed in this FIR era show the possibility thinking, acting, feeling, autonomy and high flexibility. Robots have been expected by some scholars to change the stages and processes of businesses in the era (Ivanov and Webster, 2017; Kamble *et al.*, 2018), especially with the existence of COVID-19. The necessity of this technology for the hotel industry is that it can effectively replace employees, create new jobs and reduce personnel costs. Advanced robotics are "an electromechanical or biomechanical machine or group, capable of autonomous interaction with humans and the environment; collects information about its environment through sensors and uses that information to follow instructions and perform repetitive or pre-programmed tasks." This is a useful achievement in the 4.0 digital era and plays a huge role in the hotel business (Osei *et al.*, 2020b).

According to the statistic of department of Hotel, and Vietnam National Authority of Tourism in 2023, Vietnam's hotel industry, specifically considering hotel accommodations, shows as following: The total number of 5-star hotels is steadily increasing and reaching 204 hotels, equivalent 68,171 guest rooms. The labor demand is estimated at approximately 122,708 employees (corresponding to 70% of room occupancy rate). Likewise, the total number of 4 star hotels is rising upward, reaching 312 hotels, equivalent to 42,230 guest rooms. The demand for labor in this category is approximately 54,899 employees (reflecting a room occupancy rate of above 70%). However, the total number of 3-star hotels is experiencing a decline to 511 hotels, which are equivalent to 38,588 guest rooms. The labor demand is approximately 34,914 employees, aligning with a room occupancy rate of 70% or higher. The total number of 2-star hotels is decreasing to 1,284 hotels and 43,642 guest rooms, the demand of labor in this segment is around 34,914 employees, corresponding to 70% or more of room occupancy rate. Similarly, the total of 1 star hotels is declining to 2,106 hotels, equivalent to 42,070 guest rooms, the labor demand is around 21,035 employees (corresponding to a room occupancy rate of 70% or more). Collectively, the Vietnam's hotel industry comprises 4,417 hotels ranging from 1-5 stars, providing a total of 234,701 guest rooms and approximately 272,144 employees. With a large number of hotels, Vietnam's hotel industry is poised for even further growth in the future, aiming to attract tourists and cater to the service needs of travellers. In the context of digital technology, hotels can leverage existing technologies

to search for customers and establish standardized business operations. Utilizing tools and technological devices on social media is promoting the hotel's image and introducing its services. Effective management of customer and employee data is equally crucial. To optimally integrate digital technology in the era of the 4.0 technological revolution, hotel staff must experience training to update their knowledge, adapting either to leverage the existing potential and technological capabilities of established hotels or to fully embrace entirely new technologies for newly opened hotels.

Based on an extensive review of both domestic and international research materials, the author's team poses a series of research questions to clarify the research content. Specifically: *Firstly*, what is the technological potential of hotels? *Secondly,* how is the integration of devices on social media influencing technology in the hotel industry? *Thirdly,* how is human resource training structured to apply available devices or wholly embrace new hotel operational technologies? The authors will elucidate these three aspects through research surveys, expert interviews, and the analysis and processing of information within the research methodology and results, thereby presenting a set of issues for discussion in this article.

Additionally, the authors concentrate on four key factors in the potential of digital technology within the hotel industry. These factors include the digital transformation orientation of hotels and the development roadmap to achieve outlined plans; leveraging the internal strengths of hotels to integrate with communication tools and marketing on digital platforms to reach the hotel's customer base; managing customer data and internal data within the hotel; digital technical capabilities and adaptability of the workforce resources to serve the digital business. The specific relationships among these factors and the potential of digital technology in the hotel business within the context of Industry 4.0 are illustrated in figure 2:
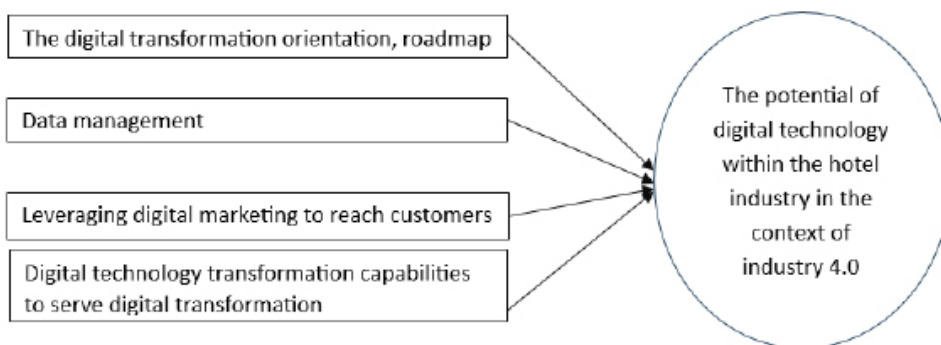

Figure 2. The potential of digital technology in the Vietnam hotel industry

Source: The authors proposed the model

To explore the interrelationship depicted in figure 2, the authors identify digital technology potential as the dependent variable (*symbolized as PD*), while the independent variables are sequentially analysed and denoted as follows:

Firstly, we consider the variable of digital transformation orientation and the road map (*symbolized as DT*), this independent variable is measured by four observed variables: my hotel currently has plans to digitize procedures that are presently carried out manually or through office application tools; my hotel has a comprehensive digitization strategy aimed at streamlining customer-related procedures across all systems, moving towards paperless workflows, and enhancing flexibility; there is an ongoing digitization plan for key business processes, especially those tied to hotel operations and customer workflows; and my hotel has an overarching digitization strategy to digitize all business procedures. The adoption of digital technology is acknowledged by both external and internal partners, and we have a dedicated team of project managers responsible at all organizational levels.

Secondly, we address the variable of data management (*symbolized as DM*), this independent variable is assessed through four observed variables: My hotel currently possesses limited digital data; my hotel owns a data collection procedure, but there is a lack of a clear process to ensure the proper management of this data. We maintain a dedicated team responsible for the data management but the collected data is not subjected to analysis; data at my hotel is manually collected which is not stored within any digital database. Its primary utilization is for meeting regulatory obligations imposed by external authorities; my hotel has implemented an integrated process for collecting digital data along with a secure data storage solution. We have a dedicated team responsible for the management and analysis of digital data, facilitating real-time decision-making.

Thirdly, leveraging the existing conditions of the hotel to integrate with communication tools and marketing on digital platforms to reach customers *(symbolized as LD)*, this variable is measured by four observed variables: my hotel lacks the requisite technical knowledge to fully capitalize on the opportunities presented by digital marketing; my hotel possesses both technical expertise and digital capabilities to support and enhance digital marketing activities. We have a well-defined strategy and a specific plan for digital marketing, aimed at maximizing these capabilities and innovating our approach to reach our target customer base; my hotel has the ability to occasionally use digital and technological initiatives for digital marketing, but lacks a comprehensive strategy or plan for it; my hotel has limited understanding of digital marketing.

Fourthly, we consider the variable of digital technical capability and the adaptability of the workforce to meet the demands of digital business *(symbolized as TT)*, this variable is evaluated through the following observed variables: my hotel lacks a formalized process

for assessing essential digital skills for employees to effectively fulfil job requirements. However, the company does have a policy that supports staff in seeking and participating in digital skills training; my hotel actively recruits digital and technology experts to address specific critical needs, concurrently implementing training programs to equip existing staff with essential digital skills; my hotel has a strategic plan to develop digital capabilities aligned with our overall roadmap. This plan includes both attracting new hires with digital expertise and implementing structured training programs to enhance the digital skills of our existing staff; my hotel does not have a clear understanding of the actual limitations by gaps in digital skills and capabilities among staff regarding the organization's ability to achieve its business goals.

3. DATA AND RESEARCH METHODS

In order to undertake the research outlined in this article, the authors' team employed a quantitative research method. Utilizing a 5-point Likert scale to gauge the digital technology's potential within Vietnam's hotels. The scale was designed to assess capabilities, potential, and the capacity to integrate digital technology in the context of the Fourth Technology Revolution. The Likert-5 scale questions were crafted to evaluate various aspects, including the present status of devices within hotels, whether they apply comprehensive digital technology, their ability to apply digital technology to customers, integration of digital technology into operational processes, hotel management involving staff training to adapt emerging trends, data management practices, and leveraging digital technology devices on social media platforms to amplify advertising efforts for hotel products and services.

The research target was the digital technology potential of hotels in Vietnam, with a sample of 220 hotels, including 40 one-to-two star hotels, 80 three-star hotels, 60 four-star hotels and 40 five-star hotels. The sampling area was taken for representativeness across 32 provinces and cities in Vietnam.

Participants in the article included hotel directors, human resource managers, or information technology managers who represented the sample. A total of 236 questionnaires were distributed, after collection and cleaning, the research team utilized 220 samples for the content analysis presented in this article.

4. RESEARCH RESULTS

4.1. Descriptive statistics of the research sample

The research team conducted quantitative research on a representative sample of hotels across various geographical regions, ranging from 1-star to 5-star hotels in Vietnam. The Northern region contributed 36.4% of total hotels, the Central region accounted for 27.2%, and the Southern constituted 36.4%. The selection of hotels for the survey

demonstrated a well-balanced distribution across the entire Vietnamese landscape. After cleaning, 93.3% of the collected questionnaires met the criteria for data analysis.

Regarding gender distribution, there was a notable predominance of male managerial staff, with 134 male managers representing 60.9%, and 86 female managers making up 39.1%. The balance between these gender components is one of the crucial objective bases in scientific research. The surveyed job positions were categorized into three groups: Hotel Managers, comprising 100 individuals, accounting for 45.5%; Human Resource Managers in hotels, totalling 60 individuals or 27.25%; and Information Technology Managers, also numbering 60 individuals or 27.25%. The years of work experience for hotel staff were meticulously tabulated. Managers with less than 2 years of experience amounted to 6 individuals, representing 30.5%; those with 6-10 years of experience were 81 individuals, making up 36.8%; and managers with more than 11 years of experience were 66 individuals, accounting for 30%. Due to the specific requirements of the industry and the professional nature of the job, the proportion of newly experienced managers participating in hotel management activities stood at a relatively modest 2.7%, while the remaining 97.3% of managers had extensive seniority and work experience. The types of surveyed hotels were relatively equally distributed and corresponded to star ratings; 40 hotels rated 1-2 stars, accounting for 18.2%; 80 hotels rated 3 stars, making up 36.4%; 60 hotels rated 4 stars, representing 27.2%; and 40 five-stars hotels, comprising 18.2%. Specific information is presented in table 1- Descriptive statistics of the research sample.

Table 1. Descriptive statistics of research sample

Classification Criteria		Number of Individuals	Percentage (%)
Gender	Male	134	60,9
	Female	86	39,1
Years of working	Less than 2 years	6	2,7
	2-5 years	67	30,5
	6-10 years	81	36,8
	11 years and above	66	30
Hotel ranking	1 – 2 stars	40	18,2
	3 stars	80	36,4
	4 stars	60	27,2
	5 stars	40	18,2
Job position	Hotel Manager	100	45,5
	Human Resource Manager	60	27,25
	Information Technology Manager	60	27,25

Working region	Northern of Vietnam	80	36,4
	Central of Vietnam	60	27,2
	Southern of Vietnam	80	36,4

Source: Authors compiled from database

4.2. Statistical analysis of survey results on factors

In evaluating the digital technology potential of the hotel industry in Vietnam, the authors utilized a 5-point Likert scale with 5 response options for each question: 1-Strongly Disagree; 2-Disagree; 3- Neutral; 4- Agree; 5- Strongly Agree. The assessment was organized into four distinct groups, four questions and five answer choices were included in each group, leading to a total of 16 questions. The survey questions were distributed to hotels through the Google Forms platform. Subsequently, the authors extracted and processed the data by using Excel, cleaned and focused on selecting a representative sample from 220 responses, encompassing hotels ranging from 1 to 5 stars. The respondents included individuals in key managerial positions such as hotel managers, human resource managers, and information technology managers. For streamlined data analysis and the comparison of influencing factors, the authors symbolized PD as the dependent variable, measured by four independent variables: DT *(DT1, DT2, DT3, DT4)*, DM *(DM1, DM2, DM3, DM4)*, LD *(LD1, LD2, LD3, LD4)*, TT *(TT1, TT2, TT3, TT4)*. Each independent variable was gauged by four observed variables. Thus the specific findings of the research are outlined as follows:

In the context of digital technology, the factor of orientation and digital transformation roadmap of the hotel industry DT, was measured by four observed variables: *DT1, DT2, DT3, DT4*. In which, *DT3* and *DT4* demonstrated equivalent and the highest average values, reaching 3.7227. This suggests that hotels are actively adopting digital transformation based on existing values, including the current system of equipment in use, the operational software system, and organizational activities aimed at enhancing operational processes with a customer-centric approach. Several hotels are currently undergoing a comprehensive digitization of their operational service processes, incorporating innovative technologies provided by their hotel partners. To successfully execute this, hotels are reliant on the expertise of external technology specialists. Participating experts from the hotels hold crucial positions such as hotel directors or heads of departments. Despite the average value being considered the highest in the comparison to other variables, it is not the most expected number to fulfil the expectations set by the Likert scale with 3.7227 out of 5. Specifically, the survey results indicate that *DT1* has the lowest average value among the DT factors, standing at 3.4591. This suggests that a significant proportion of hotels are still adhering to traditional work processes and implementing outdated software, rather than embracing a more robust digital direction. Furthermore, the implementation

of digital plans in the hotel industry, while initiated, has yet to demonstrate significant effectiveness. However, in the immediate future, this does not emerge as a critical concern for hotel businesses. Analysing the survey results from the four observed variables, the average value stands at 3.615, marking it as the highest among all variables surveyed. Consequently, the potential for digital transformation within the context of Industry 4.0 in the Vietnam hotel industry has taken initial strides toward establishing a clear direction and a roadmap for transformation. Nonetheless, for a thorough implementation, various challenges are encountered in practice, depending on different types of hotel businesses.

The organizational factor of data management activities DM comprises four observed variables: *DM1, DM2, DM3, and DM4*. These variables are utilized to gauge data management DM and offer insights into the organization of data management activities within the context of Industry 4.0 in the Vietnam hotel industry. From the survey results, it is evident that the observed variable *DM4* has the highest average value of 3.836. This suggests that hotels predominantly integrate processes for collecting digital data and employ digital data storage solutions to securely manage their data assets. This is typically overseen by a dedicated team responsible for data analysis, enabling them to make informed real-time decisions. Such an approach represents an optimized strategy employed by hotels to leverage existing resources and adapt the technological platform, emphasizing cost and functionality maximization in the era of digital technology. On the other hand, *DM1*, with an average value of 2.6409, and *DM3*, with an average value of 2.8136, are two observed variables with relatively lower scores. These results imply that a majority of hotels either possess limited digital data or manually collect data and the gathered data may not be stored in any digital database. In cases where digital data collection and storage activities are conducted, they often adhere to regulatory requirements set by government authorities. The overall average value of DM is 3.0579 out of 5 on the Likert scale, indicating that the hotel industry in Vietnam is not fully prepared to optimize the organization of digital data management activities. Detailed survey results for the DT and DM factors are presented in Table 2:

Table 2. Survey results for the DT and DM factors

No	Digital transformation (DT) factor	Average value	No	Data management (DM) factor	Average value
1	DT1	3.4591	1	DM1	2.6409
2	DT2	3.5545	2	DM2	2.9136
3	DT3	3.7227	3	DM3	2.8136
4	DT4	3.7227	4	DM4	2.8636
5	Average (DT) factor	3.6147	5	Average (DM) factor	3.0579

Source: Compiled by author from the research survey results

The factor of leveraging digital communication and marketing tools LD in the internet to optimize and reach customers is measured by observed *variables LD1, LD2, LD3, LD4*. Among these, the average value of *LD1* is 2.6909, and the average value of *LD4* is 2.6091, indicating them with low measurement indices. According to survey content, most hotels lack the necessary technical capability to take full advantage of the potential provided by digital marketing. In reality, hardly many hotels have a good workforce knowledgeable in this field. On the other hand, with an average value of 3.9954, the observed variable *LD2* represents the highest index within the LD factor. Based on survey results, many opinions suggest that hotels possess the technical and digital capabilities to support and expand their digital marketing activities. Hotels that have specific digital marketing plans and strategies in place capitalize on these capabilities to innovate how they reach their target consumers. The differences in index values among these variables lead the authors to conclude that the digitization application of online tools is a double-edged sword. Hotels that are not proactive in operation and security may incur unnecessary expenses and risk losing data in the future when utilizing online advertising. This explains why *LD1* and *LD4* have lower indices, while *LD2* demonstrates a higher one.

The factor of digital technology transformation capability TT serving the digital business of the hotel industry is measured by observed variables *TT1, TT2, TT3, TT4*. According to survey results, *TT4* has an average value of 2.7727, which is the lowest index in the group of indices used to measure TT. This implies that hotels may not be fully aware of or appreciate the importance of integrating technology into their business operations. Additionally, due to workforce limitations, there are still skill and digital competence gaps among staff, thereby affecting their ability to achieve hotel business objectives. On the other hand, the observed variable *TT3* has an average value of 3.8136, the highest value among the TT observed variables. Based on the data provided in the survey, several hotels have plans to develop digital technical capabilities aligned with their strategic roadmap. This plan includes attracting new digital experts and implementing training programs to enhance the skills and digital capabilities of existing staff. The survey results indicate that the digital technology potential of hotels depends on the operational human resources. Hotels that have recruitment and training solutions tend to address these issues regularly. However, these tasks require a certain amount of time for hotels to master digital capabilities and integrate with the technology revolution of Industry 4.0. The detailed presentation of the survey results for the LD and TT variables is provided in table 3:

Table 3. Survey results for the LD and TT factors

No	Leveraging digital (LD) factor	Average value	No	Technology transformation (TT) factor	Average value
1	LD1	2.6909	1	TT1	3.0681
2	LD2	3.9954	2	TT2	3.0863
3	LD3	3.3363	3	TT3	3.8136
4	LD4	2.6090	4	TT4	2.7727
5	Average (LD) factor	3.1579	5	Average (TT) factor	3.1852

Source: Compiled by author from the research survey results

5. DISCUSSION RESEARCH RESULT, SOLUTIONS AND RECOMMENDATIONS

In order to seamlessly align with the ongoing digital transformation and meet the demands of smart consumer trends, especially within the dynamic sector of tourism and hospitality, it becomes imperative for each hotel business to delve into its intrinsic capabilities. This exploration is essential for adapting to the societal shift towards digital transformation that every hotel enterprise undergoes. While there are numerous avenues to explore in terms of digital technology potential, the authors focus on four key areas for the hotel industry in Vietnam: the digital transformation orientation and its roadmap, activities related to digital organization and data management, leveraging marketing tools and social media for effective customer outreach, and the digital technology transformation capabilities to serve digital business. Drawing upon the research results, the author's team would like to present several discussions and propose practical solutions as follows: in the era of digital technology, most hotels express an inclination towards digital transformation. However, the journey of implementing digital conversion often encounters various challenges, resulting in a fragmented and tentative approach among hotels. When it comes to complying with the digital transformation directives issued by governmental agencies, hotels adhere to mandatory regulations. In the case of hotels rated from 1 to 3 stars, the adoption of digital technology progresses at a relatively slower pace, with some establishments yet to embark on this transformation. On the other hand, the majority of 4 to 5-star hotels, especially those affiliated with prominent international hotel groups, execute digital conversion with greater optimality and efficiency. From a hotel management standpoint, the process of digital transformation appears to be more illustrative than substantive. There is a notable absence of specific guidance outlining the tasks, technological equipment, and standardized procedures for digital transformation. Furthermore, the lack of a defined standard for measuring the extent of digital transformation has resulted in a scenario where a significant number of hotels are executing these changes in a cursory manner.

In light of the aforementioned points, the author's team suggests the necessity for a well-defined policy regarding the digital transformation of the hotel industry in Vietnam. This is particularly vital within hotel classifications, where specific benchmarks for digital transformation should be integrated to enhance the value of hotel ratings. Regarding data management, the predominant approach among hotels involves manual handling of data, often neglecting the pivotal role of data management. Notably, only 5-star hotel groups organize a systematic approach to data management, including the storage of customer data within the organization, the data associated with the company utilized for communicating with guests, and the collection of information from walk-in guests. Data related to organizational and operational management, such as employee profiles, standardized procedures, and job description matrices, are integral components of this methodical data management system for 5-star hotels. To foster effective data management practices, hotels need specific guideline and even tailored training for different hotel raking group to ensure the uniformity in data management. Leveraging digital marketing tools to connect with customers is crucial, given the rapid and diverse development of online marketing tools. While booking applications can yield initial success, their long-term effectiveness is uncertain. To proactively manage their customer base, most hotels opt for a business strategy for marketing and revenue management. Specialized staffs are often designated to execute these strategies. Unfortunately, when it comes to digital technology capabilities, most hotels lack a systematic process to evaluate the digital skills necessary for employees to meet job demands. Digital competency training is often insufficient, resulting in staff members not possessing the required skills for a smooth and adaptable digital transformation.

In light of these findings, the authors suggest several solutions for hotels. They recommend strengthening training programs, introducing conversion training, hiring digital experts to boost knowledge and digital skill development among hotel staff. Moreover, they propose developing a comprehensive plan to enhance digital skills aligned with employees' strategic trajectories, implementing recruitment policies to attract individuals with digital expertise, and initiating training programs aimed at elevating the digital competencies of existing hotel staff.

For government management agencies, there should be reasonable solution policies to create conditions for maintaining the development of hotel businesses. For instance, changing hotel rating guidelines in accordance with technology capabilities. Develop innovative strategies to address issues, encourage investment in the growth of hotel technology capabilities, and boost employment and productivity in the sector. Policies that seek to guide the training and development of competent hotel staff who have become fluent in digital operations should be implemented so that they can properly integrate with digital applications. In the limited time and budget conditions, the authors

have not comprehensively surveyed on a larger scale; therefore, in the future, to improve this research method, the authors will conduct further investigations, combined with interviews and in-depth group discussions to refine the questionnaire. They will also undertake quantitative research in a more professional manner to explain the relationships between the factors in the research model.

6. CONCLUSION

The fourth technological revolution is a breakthrough bringing numerous benefits to the socio-economic landscape, with the tourism and hotel business sectors reaping substantial value from it. Faced with this trend, identifying the digital technology potential of the hotel industry plays a crucial role in enabling hotel managers to develop a roadmap by maximizing the utilization of available technological devices. This involves enhancing the application of technology to manage customer data and internal information, flexibly utilizing various communication channels to reach target customers, and expanding training and development of the workforce to adapt to technological changes. Identifying the technological potential of the hotel industry is immensely significant for minimizing investment and optimizing functions for each hotel. Furthermore, it assists state management agencies in formulating comprehensive policies and guiding the overall development of the entire industry. The application of technology in serving guests at hotels provides customers with convenience, novelty, and less disruption. On the other hand, it enhances the promotional effect of hotels through guests' personal online platforms. Based on existing potential, including application devices, human resources, investment capabilities, customer segments, different hotel categories will have varying digital technology potentials. Investment development strategies will consequently differ based on the requirements and objectives of each type of hotel.

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Kỷ yếu hội thảo khoa học quốc tế 2024: Du lịch thông minh và phát triển bền vững: Tiềm năng, cơ hội và thách thức (Smart tourism and sustainable development: Potentials, opportunities and challenges) - Quyển 2