ISRG Journal of Arts, Humanities and Social Sciences (ISRGJAHSS)

ISRG PUBLISHERS
Abbreviated Key Title: ISRG J Arts Humanit Soc Sci
ISSN: 2583-7672 (Online)
Journal homepage: https://isrgpublishers.com/isrgjahss
Volume – II Issue-I (January- February) 2024
Frequency: Bimonthly

EFFECTS OF SMART TOURISM APPLICATIONS - DESTINATION IMAGE – TOURISTS' PERCEPTION OF CHOOSING PLACE TO VISIT

Le Thai Son[1*], Huynh Diep Tram Anh[2]

[1]Lecturer, Vietnam Aviation Academy
[2] PhD student at School of Hospitality and Tourism - Hue University; Lecturer at VietNam Aviation Academy

| **Received:** 13.02.2024 | **Accepted:** 17.02.2024 | **Published:** 21.02.2024

***Corresponding author:** Le Thai Son
Lecturer, Vietnam Aviation Academy

Abstract

This paper investigates how Smart Tourism Applications (STA) and Information Quality (IQ) affect Can Tho destination images as a tourism destination and the decisions of tourists who choose to visit. Based on previous research on smart tourism applications, this paper proposes a model to test the impacts of STA and IQ on enhancing the image of Can Tho destinations and tourists' choice to visit. Based on 400 questionnaires collected from tourists who visited Can Tho between April and June/2023, this paper analyzes the factors that impacted tourists' choices. The findings reveal that (1) Smart tourism applications influence IQ, Affective, and Cognitive image, and three perceptual attributes, namely Attitudes, perceived behavioral control, and subjective norms of tourists; (2) The three attributes of perception influence the tourists' choice. Theoretical and practical implications are discussed based on the research findings, then future research is suggested.

Keywords: *Affective image; Cognitive image; Tourists' Choice; Smart Tourism Application (STA), Information Quality.*

1. Introduction

Smart tourism destinations are aware of the crucial role of the cooperation between stakeholders, and the deployment of advanced technology in the destination, in which the quality of infrastructure systems in terms of information technology and smart tourism applications are upgrading attractions and services (Jocivic, 2019). Wang et al. (2013) found that smart tourism destinations rely on information technology platforms to help enhance the destination image in the minds of tourists and help them make decision choices. At this time, destination image is often used as a marketing tool to promote tourism destinations and develop the competitive advantage of that destination (Nicoletta, & Servidio, 2012). Therefore, tourism destinations of all kinds should attach importance to enhancing their destination image (Yuan and Gu, 2015; Ruiz-Real et al., 2020).

Destination image is the core of the success of a destination (Baloglu & Mangaloglu, 2001), and has received attention from many researchers who focus on the components of the image to influence satisfaction, loyalty, and intention to visit (Chen & Tsai, 2007; Chi & Qu, 2008; Park & Nunkoo, 2013). These studies have shown that environmental factors, landscapes, entertainment, or factors such as prices, and services which have influenced tourists' travel decisions, but have not considered the impact of smart mobile technology. Due to the rapid development of technology and the diversity of modern society, consumers have high demands for authentic images. Mehraliyev et al. (2020) suggest that the provision of smart tourism applications will be different for different destinations. Similarly, tourists mainly travel in search of authentic experiences through recognizing these images (Wang,

DOI: 10.5281/zenodo.10686482

1996). Papadimitriou et al. (2015) suggest that an image can help tourists distinguish one destination from another. Tourists may perceive and behave differently depending on personal characteristics, psychological needs, and destination image factors (Buhalis & Amaranggana, 2014). Therefore, improving tourists' perception of destination image will help them have destination choice behavior. Ramkisson et al. (2011) research shows that destination image is a salient factor influencing the cultural behavioral intentions of tourists to consume cultural attractions. Using a meta-analysis to synthesize the effects of destination image from 87 studies, the result of Afshardoost and Eshaghi (2020) research shows that both affective and cognitive have the greatest impact on behavioral intention.

From travelers' perspective, there has been no research on consumers' interests relating to STA, specifically the implementation of certain technologies (Femenia-Serra, Neuhofer, & Ivars-Baidal, 2019; Mehraliyev et al., 2020). Tavitiyaman et al. (2021) also realized that the quality of destination images has not been tested. Based on the above analysis, this study considers the Can Tho tourist destination as the research context with specific STAs are the website https://canthotourism.vn and application on mobile devices named Can Tho Tourism. The study uses the service-dominant logic (SDL) approach and the theory of planned behavior (TPB) as the main theoretical to explore the relationship between tourists' perceptions of STA and IQ affecting smart destination image and tourists' choice. The purposes of this study are: (1) to examine the relationship between smart tourism applications, information quality, and destination image; (2) to investigate the relationship between destination image and tourists' perception; and (3) to consider the relationship between tourists' perception and intention to choose a travel destination. This study contributes significantly to a number of common and divergent insights in the existing literature on the role of smart tourism applications, tourists' perception of destination image, and tourist choice.

2. Theoretical basis and proposed research hypotheses

2.1. Concepts

2.1.1. Destination Image – Smart Tourism Destination Image (SDI)

Destination image is the sum total of any individual's beliefs, attitudes, and expressions about a destination that influence the intention to visit it (Crompton, 1979). Buhalis (2000) mentioned the attributes of destination image which includes: Attractiveness; Accessibility; Product packages; Amenities and accessibility. Cohen (2014) identified the concept of a smart tourist destination as having six distinct aspects: smart governance, smart environment, smart mobility, smart economy, smart people, and smart life. With the above concepts, destination image is a multidimensional structure influenced by cognitive and affective assessment which affects tourist behavior (Baloglu & Mangaloglu, 2001; Crompton, 1979), and can stimulate their creativity and experience (Nicoletta & Servidio, 2012). Many tourist destinations strive to gain resource advantages, improve destination management efficiency, and optimize resource allocation to become competitive destinations through the rapid adoption of ICT (Wang et al., 2013). Under the influence of technology in today's tourism landscape, travelers are looking for suitable facilities and services to travel and seek interesting travel experiences during the trip. Availability and quality of information can also be important for destination perception and choice. Many modern travelers use smart mobile devices to perform intensive and active searches on websites, social media for information about customized and personalized services. as well as taking into account the value of money as well as safety and environmental issues.

2.1.2. Smart Tourism Application – STA

Smart tourism application, STA, is the application of information and communication technology to a physical system (Gretzel et al., 2015). This concept is to explain the use of technology by tourism providers and government organizations to provide a better experience for tourists as they travel. However, the available papers provide limited supporting evidence on the relationship between smart tourism applications and cognitive assessment from the perspective of tourists.

2.1.3. Information *quality (IQ)*

Huang et al. (1999) define information quality as information that is suitable for use by consumers, while Kahn et al. (2002) describe IQ as the property of information that satisfies consumers' expectations. IQ has two main directions of research, namely from information providers and users. It also contains many factors; this paper, however, focuses mainly on the IQ from tourist's perspective instead of system users. The numbers generated therefore contain aspects such as added value, level of relevance, timeliness, completeness, level of information, interest and attractive website design in the context of the task for which it will be used, according to the IQ framework of Wang & Strong (1996). Research on information quality from STA by Son (2023) shows that quality information from STA will have a strong impact on the tourist experience through perceived behavioral control and subjective norms.

2.1.4. Perception and Tourists' choices

An enjoyable experience is a set of emotions and images positively remembered and recalled when tourists visit a smart tourism destination (Loureiro 2014; Oh, Fiore, and Jeoung, 2007). The experiential nature of the tourism industry provides each traveler with a unique experience through their own interactions and perceptions of smart technology applications (STA) and unique images of tourism destination. While each tourist may engage in similar activities at the same destination, their memories of such experience could vary, leading to different assessments of experience (Kim, 2018). The operation and use of images from the STA allows travelers to access relevant information about their tourism activities or interact with any resources available at the smart tourism destination. If people have access to information about a historical attraction and interact with the resources provided by STAs, the level of engagement and participation within these smart attractions will increase, thus enhancing their ability to remember the experience.

2.2. Theoretical basis and proposed hypotheses

Service-dominant logic (SDL) and STA

The core of S-D logic is the determination of service type and the application of its resources to provide benefits. Specifically, consider the role of integrated operational resources to influence other resources to create benefits for users (Vargo and Lusch, 2016) such as experience, choice, and value in each consumption step of tourism products and services (Neuhofer et al., 2014, Kirova & Tan, 2019, Wang et al., 2013), marketing communications through personal media (Bacile et al., 2014), and content produced by users create about brands (Halliday, 2016).

DOI: 10.5281/zenodo.10686482

With many information and communication technology applications based on SDL components such as cloud services, the Internet of Things, and user Internet service systems (Zhang, Li, & Liu, 2012), when applying SDL to the tourism sector, Wang et al. (2016) proposed that SDL can be used to determine the future direction of smart tourist destinations by realizing the creation of experiences, increasing the perceived value for tourists about the destination image, and develop strategic plans for destination marketing activities. This platform also includes providing relevant information through STAs to the search and consumption activities of tourism products to create their own experiences (Vargo & Lusch, 2004; Wang et al., 2013).

Smart tourism application and information quality

Studies by Wang et al. (2016), Huang et al. (2017), and Tavitiyaman et al. (2021) interpreted online tourist information sources to generate should experience for visitors with attributes including 'Smart Tourism Management' which is used to systematically suggest travelers' browsing behaviors, social networking sites and the creation of their travel plans; 'Smart Tour' describes the electronic guide and electronic tour map; 'E-commerce system' is used to describe point-of-sale systems and smart payment applications; 'smart traffic system' describes digitized information about road traffic, traffic management systems such as online car booking services; 'Smart Forecast system' provides information about traffic forecast and waiting time at a tourist destination. When tourists travel to a destination, they frequently use smart devices to find travel information from STAs. Through the perception of search results compared to tourism reality, the perception of the quality of information received from smart travel applications that they use during their trip will influence their beliefs and attitudes. their perception of the destination (Xia et al. (2018)). This shows that tourists mainly use smart mobile devices to search for information when traveling, through which they evaluate the perceived quality of smart travel applications that they use during their trip, thus influencing their beliefs and perceived attitudes towards the destination.

Therefore, the IQs are made from the consumer's point of view according to the conceptual framework of IQ of Wang and Strong (1996) in the tourism environment, mainly focus on factors such as added value, level of relevance, timeliness, completeness, level of information, interest and attractive website design in the context of the task for which it will be used. When users receive and process travel information on social media through an STA, they will often consider not only the quality of the content, but also the quantity of information provided.

From the above discussion, a hypothesis is proposed to study:

H_1: Smart tourism applications has a positive effect on information quality

Influence of smart applications and information quality on destination image.

The main objective of smart destinations is to enhance the memorable tourist experience through greater personalization of services and products (Buhalis and Amaranggana, 2014) and co-creation of shared value in a dynamic way (Boes et al., 2015) through combining smart technologies and integrating tourism big data from separate sources into a central, real-time platform that allows travelers to make better decisions and enhance their personal experiences (Buhalis and Amaranggana, 2014; Xiang and Fesenmaier, 2017). Femenia-Serra et al. (2019) and Ivars-Baidal et al. (2017) suggested smart solutions, including established technologies such as public Wi-Fi, tourist destination websites, mobile apps, virtual and augmented reality… with potentials to be used in smart destinations to enhance the travel experience of tourists and local residents. In order to personalize the experience, get as much information about pre-travel needs, emotions during and after travel through media and social networks, Ivars-Baidal et al. (2017) suggest that not only businesses are called upon to deliver unique experiences through ICT but also destination management organizations (DMOs). These organizations are challenged to plan and implement technological solutions that benefit the destination itself in both public and visitors'perspective. From the above discussion, the following hypotheses are proposed:

H_{2a}: Smart tourism applications have a positive effect on destination cognitive image.

H_{2a}: Smart tourism applications have a positive effect on destination affective image.

H_{3a}: Information quality has a positive effect on destination cognitive image.

H_{3b}: Information quality has a positive effect on destination affective image.

Influence of tourism destination images on tourists' perception

The theory of planned behavior (TPB) proposed by Ajzen (1985, 1991) is a routine analytical framework in the social sciences, including tourism, and consists of three levels: (1) attitude; (2) perceived behavioral control; and (3) subjective norms. Very few studies have analyzed the effect of destination image on the three TPB constructs concurrently in the context of tourism. Collins-Dodd and Lindley's (2003) study found that consumers' perceptions of store image and store brand image are positively associated with their overall attitude toward store brands. Jalilvand et al. (2013) proved that destination image positively affects tourist attitudes toward visiting Iran in the tourism context.

In the context of tourism, travelers with the ability to assess the attractiveness and benefits of choosing and visiting a particular place through high-quality images will have a more pleasant experience. Perceived behavioral control refers to thoughts about how attractive it is to be influenced by their experience, in relation to the cognitive-affective image of a tourism destination. Subjective norms are formed by social information about destination images and predicted responses to either expected or unexpected behaviors (Ajzen, 1991). Bilgihan et al. (2016) argue that it is an individual's view of the importance of various interactions in a social environment when they expect themselves to act in a certain way. The stronger of tourism destination images, the higher subjective norms will be, thus the decision to receive high-quality images will result in an enjoyable visitor experience.

From the above discussion, the following hypotheses are proposed:

- $H4_a$: Cognitive image has a positive influence on the attitude of tourists.

- $H4_b$: Cognitive image has a positive influence on perceived behavioral control.

- $H4_c$: Cognitive image has a positive influence on the subjective norms of tourists

- $H5_a$: Affective image has a positive influence on the attitude of tourists.

- $H5_b$: Affective images have a positive influence on visitor perceived behavioral control.

- $H5_c$: Affective image has a positive influence on the subjective norms of tourists

The influence of perception on tourists'choice

DOI: 10.5281/zenodo.10686482

Theory of Mind (ToM) is a widely known concept in psychology, defined as "the ability to assign mental states, thoughts (cognitive components) or emotions to (affective component) to others (Heitz et al., 2016, p. 2)." ToM can explain individual behavior based on mental state and has significant results in the interaction with others for social interaction through the information they receive. In other words, ToM seeks to understand an individual's thinking about the interrelationships of a context based on quality information (Stone & Gerran, 2006). In the context of smart tourism, discovering the attitudes, perceived behavioral controol, subjective norms of tourists from cognitive-affective image, and the choice of destinations are necessary to be studied (Jocevic, 2019; Mehraliyev et al., 2020).

The impact of technology has been highlighted recently, as travelers are looking for attractive and interesting tourism destinations' image to enhance their travel experience. Many modern travelers rely heavily on ICT, conduct in-depth information searches, and are very active on social media. They are looking for customizable personalized services and care about values as well as environmental and safety concerns. New distribution channels, diverse social media platforms, virtual communities, efficient mobile applications and secure online payment processes are expected and ready to be adopted (Buhalis & Law, 2008; Xiang & Gretzel, 2010). The main focus has shifted from e-tourism focusing on web pages to smartphones and sensors playing an important role before, during and after travel (Buhalis & Amaranggana, 2015). Currently, tourists rely on smart devices, connected devices based on IoT, ICT and information provided from service provider websites and social networks to plan their trip. Destination images selection and holiday planning factors involve before, during and after travel.

From the above discussion, the following hypotheses are developed:

- $H_{6a:}$ *Attitude has a positive influence on tourists' choice.*
- H_{6b}*: Perceived behavioral control has a positive influence on tourists' choice.*
- H_{6c}*: Subjective norms have a positive influence on tourists' choice.*

3. Research Methods

3.1. Data collection

The verification of the research model was carried out, first of all, by a survey of tourists who travelled in Can Tho city from April to June 2023. There are several reasons to choose this survey: Firstly, after the Covid 19 pandemic, tourists have the opportunity to relieve the pressure of not being able to move during the outbreak; The secondly, Can Tho is a land with diverse natural and human resources; Finally, Can Tho is being vigorously deployed to become a smart tourism destination. This means that the technology platform is widely deployed.

Research has distributed 450 survey questionnaires to tourists who have traveled to Can Tho, collected 450 questionnaires. After excluding invalid votes, there are 400 usable. The proportion of female tourists participating in the survey was 58.75% compared to the number of male tourists, who only accounted for 41.25%. The age of tourists participating in the survey is from 18 to 60 years old, which shows that the research has selected the right interviewer and they are capable of using and understading smart technology and smart mobile applications, importantly, the ability to answer survey questions correctly.

Table 1. Descriptive statistics

Characteristic		Number	Frequency
Sex	Male	165	41.25%
	Female	235	58.75%
Total		400	100%
Age	Under 20	70	17.5%
	From 20 - 35	155	38.75%
	From 36 - 49	114	28.5%
	From 50 -60	51	12.75%
	Over age 60	ten	2.5%
Total		400	100%

(Source: Results of data processing of the study)

3.2. Measurement Scales

The scales for measuring factors were derived from existing studies to fit the context of this study. Specifically, the scale of research model is synthesized from the research results of Tavityyaman et al. (2021), Kim et al. (2017), and Ghaderi et al. (2018), including 40 observed variables (Table 2). The original synthetic scale used inverted translation methods to ensure the correct meaning and the validity. After that, the research team had in-depth interviews with seven experts to ensure that the measurement criteria were corrected with the research context, easy to understand, and easy to answer. The study used a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 2. Measurement Criteria

Factors	Code	Items	Citation source
Smart tourism application	STA	8	Tavitiyaman et al (2021); Kim et al., (2017)
Information quality	IQ	10	Kim et al., (2017)
Cognitive image	CI	3	Kim et al., (2017)
Affective image	AI	6	Kim et al., (2017)
Attitude	A	4	Ghaderi et al., (2018)
Perceived Behavioral control	PBC	3	
Subjective norms	SN	3	
Tourists' Choice	TC	3	Kim et al., (2017)

(Source: Summary of research)

4. Data Analysis

4.1. Measurement Model Verification

The data analysis was performed using the partial least squares variance-based structural equation model (PLS-SEM), which is suitable for the purpose and predictive power of this study. PLS-SEM has been widely used in other disciplines such as strategic management or marketing (Hair, Ringle, & Sarstedt, 2016). Moreover, PLS-SEM allows us to retain more indicator variables and to confirm the potential of a second-order construct. Considering the low likelihood of normal distribution in social sciences, PLS-SEM seems to be more appropriate. Therefore, we used PLS-SEM, because of its advantages in handling small

DOI: 10.5281/zenodo.10686482

sample sizes, complex models with multiple endogenous and exogenous constructs and indicator variables, or non-normal data distributions.

Firstly, the test model has a value of SRMR = 0.058 < 0.08, showing that the research data is consistent with the model.

The scales used in this study were evaluated for their reliability using Cronbach's Alpha and composite reliability (CR). Table 3 presents the results of these measures for all constructs. The values of Cronbach's Alpha and CR were above 0.70 for all constructs, indicating that the scales had acceptable reliability.

Table 3. The measurement model

	Cronbach's Alpha	Composite Reliability (rho_a)	Composite reliability (rho_c)	Average Variance Extracted (AVE)
AI	0.935	0.935	0.949	0.755
A	0.839	0.843	0.892	0.674
SN	0.802	0.803	0.883	0.717
TC	0.852	0.856	0.910	0.771
CI	0.835	0.836	0.901	0.753
PBC	0.801	0.803	0.884	0.717
IQ	0.911	0.913	0.926	0.555
STA	0.864	0.865	0.894	0.515

(Source: Results of data processing of the study)

We used methods the average variance extracted (AVE) to assess the convergent validity of our constructs. As shown in Table 3, the AVE values ranged from 0.718 to 0.878, indicating high convergent validity. In particular, the construct of STA and IQ had an AVE of 0.55, and 0.515 which was above the threshold of 0.5 (Hair et al., 2016).

Table 4. Discriminant Validity

	A	AI	CI	IQ	PBC	SN	STA	TC
A	**0.821**							
AI	0.39	**0.869**						
CI	0.306	0.702	**0.868**					
IQ	0.543	0.305	0.277	**0.745**				
PBC	0.556	0.275	0.218	0.567	**0.847**			
SN	0.446	0.211	0.27	0.525	0.468	**0.846**		
STA	0.49	0.505	0.412	0.623	0.403	0.353	**0.718**	
TC	0.47	0.325	0.263	0.485	0.524	0.548	0.403	**0.878**

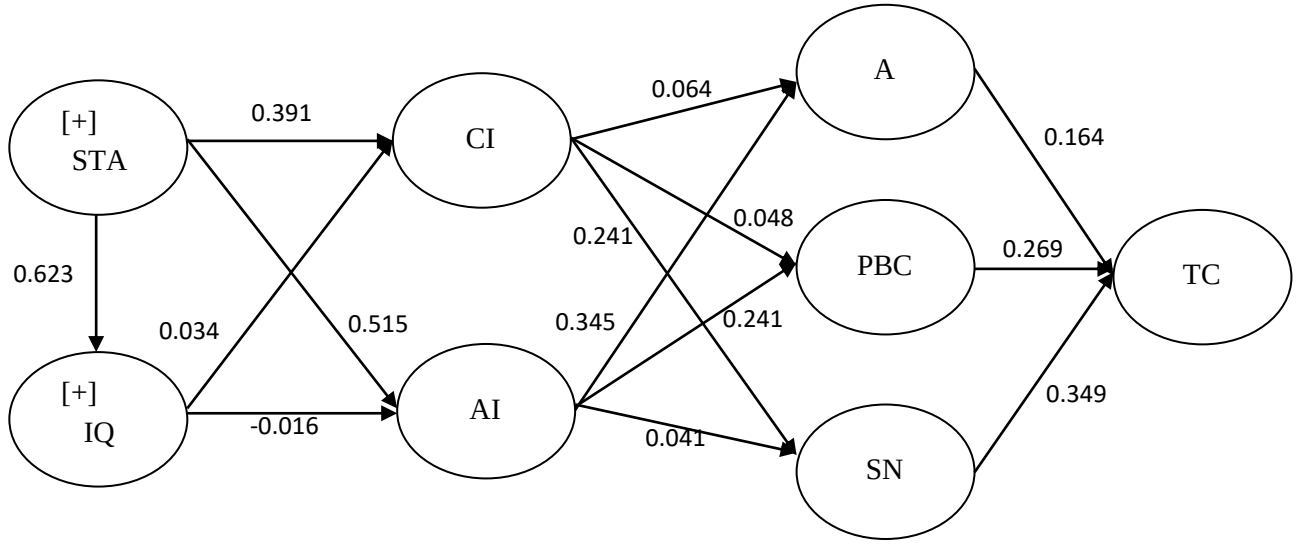
(Source: Results of data processing of the study)

The discriminant value measurement in the study was assessed using the Fornell-Larcker criterion, which compares the square root of the AVE for each structure with the correlations between the structures. As shown in Table 4, all diagonal elements, which are square roots of AVE, exceed the correlations in the column and row containing it and establish discriminant validity as they all meet the requirement.

The collinearity problem is considered, according to Hair et al. (2016), the VIF value should not exceed 5. The results show that the VIF values of the measured variables are all less than 5, therefore, does not occur collinearity phenomenon.

DOI: 10.5281/zenodo.10686482

4.2. *Structural model*



(Source: Results of data processing of the study)

Figure 2. Research model result

To test the hypotheses, we measured the explained variance ($R^{2)}$ of the dependent and intermediate variables, the path coefficients (β) and their significance (p-value), obtained from a boostrapping by resampling (5000 observations) to assessing the significance of the assumed relationships. The results are summarized in Figure 2, Table 5.

Table 5. Path coefficient and hypothesis testing

	β	Standard deviation	T values	P values	Hypothesis testing
H_1 : STA -> IQ	0.623	0.033	18,998	**0.000**	**Accept**
H_{2a} :STA -> CI	0.391	0.077	5.066	**0.000**	**Accept**
H_{2b} :STA -> AI	0.515	0.072	7.2	**0.000**	**Accept**
H_{3a} :IQ -> CI	0.034	0.069	0.494	0.621	Rejected
H_{3b} :IQ -> AI	-0.016	0.067	0.24	0.81	Rejected
H_{4a} :CI -> A	0.064	0.084	0.765	0.444	Rejected
H_{4b} :CI -> PBC	0.048	0.085	0.569	0.569	Rejected
H_{4c} :CI -> PBC	0.241	0.071	3.374	**0.001**	**Accept**
H_{5a} :AI-> A	0.345	0.081	4.261	**0.000**	**Accept**
H_{5b} :AI -> PBC	0.241	0.081	2.99	**0.003**	**Accept**
H_{5c} :AI-> SN	0.041	0.08	0.519	0.604	Rejected
H_{6a} :A -> TC	0.164	0.068	2.422	**0.015**	**Accept**
H_{6b} :PBC -> TC	0.269	0.074	3,647	**0.000**	**Accept**
H_{6c} :SN -> TC	0.349	0.071	4,919	**0.000**	**Accept**

(Source: Results of data processing of the study)

Table 5 shows the influence of STAs strongly on information quality, and emotional image, and perceived image of the destination. The new finding of the study is that the quality of information derived from STAs to affect cognitive and emotional images has a very weak effect. Similarly, cognitive image has a very weak effect on visitor behavior and control, emotional image has a weak effect on trust, and all are not statistically significant. This study also found specifically the relationship between cognitive images that will affect beliefs, emotional images that will affect visitors' behavior and ability to control. This result shows that the components of tourist perception will have different influences from the destination image in the technology context.

To test the predictive ability of the model, the study used Blindfolding technique with a jump of D = 7. The results in Table 6 show that the Q^2 of the structures are all high and >0. These results provide clear support for model relevance prediction.

DOI: 10.5281/zenodo.10686482

Table 6. Q^2 value

	SSO	SSE	Q^2 (=1-SSE/SSO)
AI	240,000	841.545	0.649
A	1600,000	878,671	0.451
SN	1200,000	697,917	0.418
TC	1200,000	579.134	0.517
CI	1200,000	618,783	0.484
PBC	1200,000	693,378	0.422
IQ	400.000	2221.247	0.445
STA	3200,000	1975,760	0.383

(Source: Results of data processing of the study)

4.3. Discussion

The results of this study confirm the relationship between the factors of smart applications, IQ, cognitive-affective images, perception and tourists' choice. But, the role of information quality is not significant. The affective images component have a medium impact on attitude, perceived behavioral control and subjective norms; the cognitive image component have a weak influence to the attitude and perceived behavioral control, and medium influence to the subjective norms when tourists receive tourism destination images through STAs. This research is consistent with the studies of Tavitiyaman et al. (2021), and Kim et al. (2017). However, there are some differences with the study from Ghaderi et al. (2018) is the three components of tourist perception that influence the choice of travel destination.

STAs simultaneously affect the information quality and the affective image to a rather high degree. Diversified STAs, provided in a timely manner, suitable for the purpose of the visitor's trip will create a good impression of the image of a smart tourism destination. With the participation rate of social networks, namely Facebook and Youtube accounting for rate of 83%, showing that STAs providing information to publish, and for travelers to share on social networks are a rich, interesting source for them before, during and after travel. This will greatly increase the image of a smart tourist destination, and help tourists make quick travel decisions.

5. Conclusions and Management Implications

5.1. Research significance

This study has several implications for the theory in the following ways. First, our study contributes to understanding the influence of smart technology applications on destination image, both cognitive and affective components, and positively influences the perception and choice of travel of tourists. Second, the study provides empirical evidence of different influences from the three tourists' perceptions. Therefore, STA elements will become one of the tools that increase the image of smart tourist destinations. It also has empirical evidence on the role of tourists' perception when considering both sides, perception of destination image to make choices compared to the influence of destination image for selection in Tavitiyaman et al. (2021) research, or the influences of STA on destination image in Kim et al. (2017) research.

5.2. Practical Implications

Research results from Table 6 show that there is a strong association and influence from STAs to the image of smart tourism destinations. This in turn will help increase the visitor's identity of the destination and provide more opportunities for visitors to choose from. Therefore, destination stakeholders need to invest in smart mobile applications and provide travel-related and actual information at the destination that will help visitors quickly choose and go to the destination to have interesting. In addition, both travelers and marketers using social media should pay more attention to reviews and recommendations from travelers and smart app vendors, as they are a source of information. reliable about the destination.

5.3. Research limitations

However, the study still has some limitations. First, this study was conducted in Can Tho, a city that is developing an urban smart system in a digital way, and is increasingly perfecting the development of the tourism industry with the challenges of tourism development specifically. Next, the sample was selected in this study in a convenient way and in a modest number. Therefore, the results may not be generalizable to the general tourism context of Vietnam. Therefore, in the future there is a need for surveys on this topic at the national scale and with a larger sample size.

References

1. Afshardoost, M., Eshaghi, M.S. (2020). Destination image and tourist behavioural intentions: A meta-analysis. *Tourism Management*, 104154. Retrieved from https://doi.org/10.1016/j.tourman.2020.104154
2. Ajzen. (1985). *From intention to actions: A theory of planned behavior*. Heidelberg: Springer.
3. Ajzen. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 179 - 211.
4. Bacile, T. J., Christine, Y., Swilley, E. 2014. "From firm-controlled to consumer-contributed: consumer co-production of personal media marketing communication." *Journal of Interactive Marketing* 28 (2):117-133
5. Baloglu, S., & Mangaloglu, M. (2001). Tourism destination image of Turkey, Egypt, Greece, and Italy as perceived by US-based tour operators and travel agents. *Tourism Management, 22*(1), 1-9.
6. Bilgihan, A., Barreda, A., Okumus, F., Nusair, K. (2016). Consumer perception of knowlegde-sharing in travel-related online social networks. *Tourism Management*.
7. Boes, K., Buhalis, D. and Inversini, A. (2016). Smart tourism destinations: ecosystems for tourism destination competitiveness. *International Journal of Tourism Cities, 2*(2), 108-124. doi:doi.org/10.1108/IJTC-12-2015-0032

DOI: 10.5281/zenodo.10686482

8. Buhalis, D. (2000). Marketing the competitive destiantion of the future. *Tourism Management, 21*(1), 97-116.
9. Buhalis, D., Amaranggana, A. (2014). Smart Tourism destinations. In Z. T. Xiang.
10. Buhalis, D., Law, R. (2008). Progress in information technology and tourism management: 20 years on and 10 years after the Internet—The state of eTourism research. *Tourism Management*, 609-623. Retrieved from https://doi.org/10.1016/j.tourman.2008.01.005.
11. Chen, C. F., & Tsai, D. C. (2007). How destination image and evaluative factors affect behavioral intentions?. *Tourism management*, 28(4): 1115-1122.
12. Chi, C. G. Q., & Qu, H. (2008). Examining the structural relationships of destination image, tourist satisfaction and destination loyalty: An integrated approach. *Tourism management*, 29(4): 624-636.
13. Cohen, B. (2014). (T. s. Methodology, Producer) Retrieved (Accessed 27 January 2018), from https://www.fastcompany.com/3038818/the-smartest-cities-in-the-world-2015-methodology.
14. Collins-Dodd, C., Lindley, T. (2003). Store brands and retail differentiation: the influence of store image and store brand attitude on store own brand perceptions. *Journal of Retailing and Consumer Services, 10*(6), 345-352. Retrieved from https://doi.org/10.1016/S0969-6989(02)00054-1.
15. Crompton, J. (1979). An assement of the image of Mexico as a vacation and the influence of geographical location upon that image. *Journal of Travel Research, 17*(4), 18-23.
16. Femenia-Serra, F., Barbara Neuhofer, B., Ivars-Baidal, J.A. (2019). Towards a conceptualisation of smart tourists and their role within the smart destination scenario. *The Service Industries Journal, 39*, 109-133. Retrieved from https://doi.org/10.1080/02642069.2018.1508458.
17. Gretzel, U., Koo, C., Sigala, M., Xiang, Z. (2015). Special issues on smart tourism: Convergence of information technologies, experience, and theries. *Electronic Markets*, 553-564.
18. Hair, J.F., Hult, G.T.M., Ringle, C., Sarstedt, M. (2016). *A prier on partial least squares structural equation modeling*. Thousand Oaks, CA: Sage.
19. Halliday, S.V. (2016). "User-generated content about brands: Understanding its creators and consumers." *Journal of Business Research* 69 (1):137-144.
20. Heitz, C., Noblet, V., Phillipps, C., Cretin, B., Vogt, N., Philippi, N., Kemp, J., de Petigny, X., Bilger, M., Demuynck, C., Martin- Hunyadi, C., Armspach, J.-P., & Blanc, F. (2016). Cognitive and affective theory of mind in dementia with Lewy bodies and Alzheimer's disease. *Alzheimer's Research & Therapy, 8*(10), 2-15.
21. Huang, C.D., Goo, J., Nam, K., Yoo, C.W. (2017). Smart technologies intravel planning: The role of exploration and exploitation. *Information and Management*, 757-770. doi:https://doi.org/10.1016/j.im.2016.11.010.
22. Huang, K.T., Lee, Y.W., Wang, R.Y. (1999). *Quality information and Knowlegde.* Printice Hall, New Jersey.
23. Ivars-Baidal, J.A., Celdran-Bernabeu, M.A., Mazon, J.N., & Perles-Ivars, A.F. (2017). Smart destinations and the evolution of ICTs: a new scenario for destination management. *Current issues in Tourism*, 1-20.
24. Jalilvand, M.R., Ebrahimi, A., Samiei, N. (2013). Electronic Word of Mouth Effects on Tourists' Attitudes Toward Islamic Destinations and Travel Intention: An Empirical Study in Iran. *Procedia - Social and Behavioral Sciences, 81*, 484-489. Retrieved from https://doi.org/10.1016/j.sbspro.2013.06.465
25. Jocevic, D. (2019). From the traditionnal understanding of tourism destination to the smart tourism destination. *Current Issues in Tourism, 22*(3), 276-282.
26. Kahn, B.K., Strong, D.M., Wang, R.Y. (2002). Information quality benchmarks: product and service performance. *Communication of the ACM, 45*(4), 184-192.
27. Kim, J.-H. (2018). The impact of memorable Tourism Experiences on Loyalty Behaviors: The mediating effects of destiantion image and satisfaction. *Journal of Travel Research*, 856-870.
28. Kim, S.E., Lee, K.Y., Shin, S.I., Yang, S.B. (2017). Effects of tourism information quality in social media on destination image formation: The case of Sina Weibo. *Information and Management*, 687-702.
29. Kirova, V., Tan. V.T. (2019). Smartphone use during the leisure theme park visit experience: The role of contextual factors. *Information & Management, 56*(5), 742-753. Retrieved from
30. Loureiro, C. S. (2014). The role of the Rural Tourism Experience Economy in Place Attachment and Behavioral intentions. *International Journal of Hospitality Management, 40*, 1-9.
31. Mehraliyev, F., Chan, I.C.C., Koseoglu, M.A. (2020). A state-of-the-art review of smart tourism research. *Journal of Travel and Tourism Marketing, 37*(1), 78-91.
32. Neuhofer, B., Buhalis, D., Ladkin, A. (2014), "Smart technologies for personalized experiences: a case study in the hospitality domain", *Electron Markets*, Vol. 25, pp. 243-254.
33. Nicoletta, R., Servidio, R. (2012). Tourists' opinions and their selection of tourism destination images: An affective and motivational evaluation. *Tourism Management Perspectives, 4*, 19-27.
34. Oh, H.; Fiore, A. M.; Jeoung, M. (2007). Measuring Experience Economy Concepts: Tourism Applications. *Journal of Travel Research, 46*(2), 119–132. doi:10.1177/0047287507304039.
35. Papadimitriou, D., Apostolopoulou, A., & Kaplanidou, K.K. (2015). Destination personality, affective image, and behavioral intentions in domestic urban tourism. *Journal of Travel Research, 54*(3), 302-315.
36. Park, D. B., and Nunkoo, R., (2013). Relationship between Destination Image and Loyalty: Developing Cooperative Branding for Rural Destinations. *Proceedings of the International Conference on International Trade and Investment (ICITI) - Non-Tariff Measures, the New Frontier of Trade Policy?* University of Mauritius/WTO Chairs Programme, Le Meridien, Mauritius, 4th-6th September 2013. ISSN 169412225. (Refereed proceedings)..
37. Ramkisson, H., Uysal, M., Brown, K. (2011). Relationship Between Destination Image and Behavioral Intentions of Tourists to Consume Cultural Attractions. *Journal of Hospitality Marketing & Management, 20*, 575–595. doi:10.1080/19368623.2011.570648.
38. Son, L.T. (2023). Smart Tourism Applications and Information Quality affect to Tourist's Experience. *Research Square*. doi: https://doi.org/10.21203/rs.3.rs-3271566/v1
39. Stone, V.E., Gerrans, P. (2006). What's domain-specific about Theory of Mind? *Social Neuroscience, 1*(3-4), 309-319.
40. Tavitiyaman, P., Qu, H., Tsang, W.L., Rachel Lam, C.R. (2021). The influence of smart tourism applications on perceived destination image and behavioral intention: The moderating role of information search behavior. *Journal of Hospitality and Tourism Management*. doi:doi:10.1016/j.jhtm.2021.02.003

DOI: 10.5281/zenodo.10686482

41. Vargo, S. L., & Lusch, R. F. (2004). Evolving to a new dominant logic for marketing. *Journal of Marketing, 68*(1), 1-17.
42. Vargo, S.L. & Lusch, R.F. (2016). Service-dominant logic 2025. *International Journal of Research in Marketing*. doi:10.1016/j.ijresmar.2016.11.001
43. Wang, D., Li, X.R. & Li, Y. (2013). CHina's "smart tourisn destination" initiative: a taste of the service-dominant logic. *Journal of Destination Marketing & Management*.
44. Wang, R.Y., Strong, D.M. (1996). Beyond accuracy: what data quality means to data consumers. *Journal of Management Information System, 54*, 309-320.
45. Xia, Z., Zhang, C., Zhang, Y. (2018). A TAM-based approach to explore the effect of online experience on destiantion image: A smart phone user's perspective. *Journal of Destination Marketing and Management, 8*, 259-270.
46. Xiang, Z., & Fesenmaier, D.R. (2017). Big Data Analytics, Tourism Design and smart tourism. In *Analytics in smart tourism design* (pp. 299-309). Springer.
47. Xiang, Z., Magnini, V.P., Fessenmaier, D.R. (2015). Information technology and consumer behavior in travel and tourism: Insight from travel planning using the internet. *Journal of Retailing and Consumer Services, 22*, 244-249.
48. Xiang, Z., Gretzel, U. (2010). Role of social media in online travel information search. *Tourism Management, 31*(2), 179-188. doi:10.1016/j.jdmm.2017.06.004
49. Zhang, L., Li, N., & Liu, M. (2012). On the basic concept of smarter tourism and its theoretical system. *Tourism Tribune, 27*(5), 66-73.

DOI: 10.5281/zenodo.10686482