Smart Technology Boosts Tourist Satisfaction in Yogyakarta Smart Tourism Destination

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Abstract. This study aimed to investigate the impact of smart tourism technology and tourist technology readiness on the satisfaction level of visitors to the smart tourism destination in Yogyakarta, Indonesia. The sample comprised 200 visitors across five regions in Yogyakarta, and the Smart PLS analysis technique was employed. The findings demonstrated that both smart tourism technology and tourist technology readiness significantly affected visitor satisfaction. The study suggests that smart tourism destination managers should adopt technology in their management approach and consider the technological readiness of their visitors by understanding their cultural and lifestyle backgrounds to enhance visitor satisfaction. The implication of this research emphasizes the importance of technology in the smart tourism destination and the significance of understanding tourists' technological readiness to increase their satisfaction levels.

Keywords: smart tourism · technology · tourist readiness · visitor satisfaction · Yogyakarta

1 Introduction

The presence of technology has an important role in facilitating the lives of Indonesian people in various ways, one of which is the tourism sector. Changes in tourist behavior can be seen when searches and shares reach around 70% already through digital devices or social media. This indicates that technology is able to influence and shape the way a person conducts tourism activities, from planning a trip, while on a trip to when he returns from his trip. In the current era, only using smart phones we can explore information related to the tourist destinations we want. Tourist demands for technology have been accommodated by smart tourist destination managers who integrate smart technology with tourism resources to improve the tourist experience [1].

To achieve visitor experience, the management of smart tourism villages has accommodated various smart technologies so that they have started to abandon conventional technology, for example, online websites and blogs have been built [8]. As for travel searches to all tourist destinations, both domestic and abroad, by Google search users

in Indonesia, up to 17% compared to the same period in 2019. According to Vania, a travel industry analyst (www.kompas.com, Friday, 2:47) Indonesians who want to travel anywhere have increased compared to the pandemic period. Search interest and share of tourist attractions increased by 17% indicating that public interest in tourism has grown positively. From the 17% figure, tourist searches related to lodging (up 21%) and flight searches rose to 11%.

Smart technology has been adopted rapidly by the tourism industry which will encourage visitors to tourist destinations to come because it has been facilitated by access to information and providing personal services [2]. The facilities in question are, for example, tourist destination videos, audio tour guides, translation services so as to make it easy for visitors to capture existing information as well as convenience in conducting transactions such as QR barcodes. This makes the visitors no longer bothered with matters related to the visit because the Smart Tourism Technology (STT) has been implemented. However, the application of this STT in order to satisfy visitors requires readiness to adopt the technology provided by the tourism village manager. Barriers that often arise are individual behavior in adopting information technology, the individual's behavior affects visitor satisfaction. A visitor's readiness for technology affects the way he or she adopts technology [10].

Most of the smart tourist villages in the Yogyakarta area are aware of information systems and have implemented them to make it easier for them to market tourist destinations to the wider community. Tourism managers admit that the promotion of the sale of their products and services is greatly helped by the existence of information technology. Although they also said that there are still many obstacles and limitations, such as the lack of human resources capable of managing the information systems that have been built such as maintenance and updating of websites, blogs, catalogs and other social media platforms. Managers of smart tourism villages in Yogyakarta are familiar with financial technology as well, there are already some who are collaborating with the bank by providing QR barcodes or debit card swipe machines, credit cards. However, the tourism village managers must pay attention to the readiness of the visitors as well as to the technology that will be applied so that it is easily adopted and utilized by visitors. This study aims to see the effect of smart tourism technology and tourist technology readiness on visitor satisfaction.

2   Literature Review

Smart Tourism

Smart tourism is an intensive systematic transformation management concept [14]. Smart here means environmentally friendly, sustainable, and integrated. Smart tourism is a new trend in the tourism industry with three components such as smart destinations, smart ecosystems, and smart experiences [4]. There are also those who define smart tourism as tourism that is integrated with technology. Smart tourism demonstrates the application of information services in all tourism processes, enabling tourists to access them easily. However, this information technology is not only simple but is an ecosystem that requires interaction between tourists, smart tour managers and stakeholders so as to generate
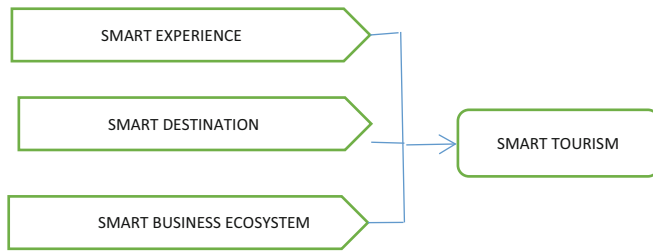
Fig. 1. Components of Smart Tourism

added value through the use of smart devices such as mobile phones, wifi, internet, hotel check-in service machines, planes, trains, services guide, self-service. This smart device provides convenience and comfort for tourists.

Smart tourism is a new magic mantra in the world of tourism that has been widely adopted by global tourism actors in the hope of increasing the level of visits. The term smart is closely related to the integration of information and communication technology (ICT). The implementation of smart tourism in the context of tourism is more complicated than other fields because existing information technology does not necessarily work without synergy between the government, industry players, and the community. Smart tourism associated with ICT is strongly influenced by the presence of physical instructors.

Three main components of smart tourism (Fig. 1).

The first component of smart tourism, Smart experience, is to provide more experiences for tourists, for example updating the latest information. Second, the smart business ecosystem is a tourism industry that cannot be separated from business affairs so it must be oriented to investors. Third, smart destinations are in addition to improving user experience, tourist destinations must also be able to offer more value than other places. The three components are a system that builds the concept of smart tourism [10].

Smart Tourism Technology

Smart technology allows tourists to be able to book airline tickets, check-in tourist attractions, view tourist profiles with smart phones. Ease of access in various tourist destinations is an attraction for tourists to come. Smart tourism is categorized as a unit or integration between tourism resources and smart technology such as ICT [3] to provide satisfying services for tourists. Technology here has a role to make it easier for tourists to access smart tourist destinations, of course, by paying attention to the readiness of tourists to understand and be able to apply the smart technology applied by these tourist destinations.

Smart tourism is defined as a tourism platform that is integrated with technology, there are major mobile digital platforms and the internet that allows visitors to share or modify visitor information, resources, and activities through the cloud and others [7]. STT can also be referred to as smart tourism destination tools, which is a combination of STD and tools which are tools to make it easier for tourists to travel both when visiting tourist attractions (pre), at tourist places (during) and after from destinations (post).

As stated by Anacleto et al., 2014 in Smith [13], that tourists will be faced with problems every time they visit a new place, such as in deciding where to go, or what

to do in a limited space and time. In conventional tourism activities, tourists usually need information from tour guides or information contained in maps or tourist guide books. For many people this is something that is complicated. But if there is an easy-to-use *tool* to help plan trips, find preferences, gain knowledge, *budget*, or help use time more effectively and efficiently, maybe tourist trips will be more valuable and less complicated. Therefore, supported by the increasingly rapid development of information technology, *Smart Tourism Destination Tools* have now become an *augmented product* for destinations and may soon become something *generic*, or something that should be facilitated by destinations.

STT is all forms of tools provided to visitors to facilitate the experience [7]; [6]. The digital era has provided convenience in everything, so that the availability of STT is highly expected by tourists. The ease of information services will encourage tourists to seek information, obtain information and use all information related to the tourist destinations they want. STT that has been implemented by smart tourism managers must continue to pay attention to the satisfaction of service users, namely tourists/visitors, it is necessary to avoid STT which is just a slogan but cannot be applied properly. The information technology built is very modern but does not pay attention to lifestyle, visitor readiness, and visitor acceptance of the technological changes provided.

Therefore, smart tourism managers need to evaluate the performance of the STT they have built. This study uses STT performance evaluation attributes such as accessibility, informativeness, interactivity, and personalization [7]. Accessibility is the ease of access for users, this ease is measured by the ease with which users get all information so as to obtain service satisfaction.

H_1: STT accessibility has a positive effect on visitor satisfaction

Informativeness shows that the information provided by STT is quality and reliable, which in the end is customer satisfaction. Customer trust is everything, so the information provided must be true, reliable, updated and detailed. For example, on the website of a tourist destination, photos of locations, prices, facilities and estimated time to get to the location must always be updated so that STT users do not feel cheated. Reliable and accurate information is the key to customer satisfaction.

H_2: The informativeness of STT has a positive effect on visitor satisfaction

Interactivity is the level of how quickly STT is able to respond and communicate quickly to visitors. If visitors get a quick and immediate response, they will give a positive assessment of STT. This positive assessment is an indicator of satisfaction with the performance of STT.

H_3: The interactiveness of STT has a positive effect on visitor satisfaction

Finally, the personalization attribute is the degree to which STT is able to provide specific information that visitors need [7]; [6]. Visitors who get special information will feel satisfied and lead to their next visit. For the two attributes, interactivity and personalization provide space for visitors to be involved in the formation of an extraordinary visitor experience. Thus, these four STT attributes are the main keys to visitor satisfaction, which can be formulated in the following hypothesis:

H_4: Personalization has a positive effect on visitor satisfaction

Technology Readiness

Awareness of technology for each person will be different. People are said to be ready to accept technology when people accept and want to use the technology to achieve their goals [10]. This element of technology readiness is indicated by the mindset generated by the understanding and barriers of each individual when using new technology. If you are able to use new technology well, you can say you have readiness to accept technological change, on the other hand, if you feel hampered, it means you are not ready to accept technological change.

The dimension of technology readiness is optimism including flexible options, efficient results and accuracy it over. Technological readiness includes motivators namely optimism and innovativeness and inhibitors include discomfort and insecurity which is then called the TR index [11]. Optimism is defined as the positive belief of people who consider technology to be able to increase control and efficiency in achieving company goals. Optimistic individuals prefer to use technology because they are aware of its function.

Innovativeness, namely the ability of people to do something new and different is called pioneering. Discomfort is a feeling of discomfort over the emergence of new technology and feeling dislike of change. As well as insecurity is the loss of trust in existing technology that is able to work well so that it functions for the organization [10].

H_5: Feeling optimistic about STT has a positive effect on visitor satisfaction

H_6: Feeling discomfort at STT has a negative effect on visitor satisfaction

H_7: Innovativeness in STT has a positive effect on visitor satisfaction

H_8: Feelings of insecurity at STT have a negative effect on visitor satisfaction.

Satisfaction

Satisfaction is a feeling of pleasure or disappointment that arises after comparing the performance (results) of the product or service thought to the expected performance (results) [16]. There is also a definition of satisfaction is a positive evaluation of their experience that describes the quality of the product or service they get in the context of consumer behavior [7]. Positive assessment of technology is something important in the technology adoption literature [12].

3 Method

This research is a qualitative and quantitative research that analyzes the determinants of visitor satisfaction on smart tourism technology and the readiness of visitors for the changes in the technology. Collecting research data through questionnaires distributed via google form to the public as visitors to the smart tourism village in Yogyakarta. The sampling technique used is *convenience sampling,* and the respondents are 200 [15].

The variables used in this study are independent and dependent variables. The independent variable in this study is Smart Tourism Technology with indicators of accessibility, informativeness, interactivity and personalization. The second independent variable is readiness for the use of technology including discomfort, optimism, innovation and insecurity. The measurement scale uses a 7-point Likert scale. The analysis technique

Fig. 2. Analysis Model

Table 1. Summary of Research Results

		t	p value	Results
Accessibility -> Satisfaction	0.900	52,089	0.000	Supported
Informativeness -> Satisfaction	0.91 6	69.976	0.000	Supported
Interactivity -> Satisfaction	0.878	41,598	0.000	Supported
Personalization -> Satisfaction	0.913	61,957	0.000	Supported
Innovativeness -> Satisfaction	0.953	104.516	0.000	Supported
Discomfort -> Satisfaction	−0.943	83,398	0.000	Supported
Insecurity -> Satisfaction	−0.878	43,101	0.000	Supported
Optimism -> Satisfaction	0.954	124,061	0.000	Supported
Adjusted R^2	0.727			

uses multiple regression analysis using the SmartPLS structural model which is generally used to analyze measurement models that aim to test a predictive relationship (Fig. 2).

The analysis model uses the Smart PLS structural model. The measurement model test uses reliability and validity tests. For all questionnaire items having a Cronbach's alpha value greater than 0.76 and a composite value above 0.87 and an AVE greater than 0.68, it can be said that the measurement model of this study is valid and reliable or consistent [5].

4 Result Discussion

1. Multiple Regression Analysis

Based on the structural model using smart PLS, the following results can be obtained:

2. Test structural models and hypotheses

The structural model was tested with coefficients and significance values through the bootstrap technique. The significance of the model is indicated by the adjusted R^2 value

of 0.727, meaning that the effect of the independent variable on the dependent variable is 72.7%. Based on Table 1, the results of hypothesis testing are:

H_1: Accessibility has a positive and significant effect on Satisfaction with a *t-statistics value of* 52,089 and a *p value of* 0.000.

H_2: Informativeness has a positive and significant effect on Satisfaction with a *t-statistics value of* 69,976 and a *p value of* 0.000.

H_3: Interactivity has a positive and significant effect on Satisfaction with a *t-statistics* value of 41.598 and a p *value of* 0.000.

H_4: Personalization has a positive and significant effect on Satisfaction with a *t-statistics* value of 61.957 and a p *value of* 0.000.

H_5: Innovativeness has a positive and significant effect on Satisfaction with a *t-statistics* value of 104.516 and a p *value of* 0.000.

H_6: Discomfort has a negative and significant effect on Satisfaction with a *t-statistics* value of 83,398 and a p *value of* 0.000.

H_7: Insecurity has a negative and significant effect on Satisfaction with a *t-statistics* value of 43,101 and a p value *of* 0.000.

H_8: Optimism has a positive and significant effect on Satisfaction with a *t-statistics* value of 124,061 and a p *value of* 0.000.

3. Discussion
a. Smart Tourism Technology to travelers' satisfaction

The results showed that the four indicators of smart tourism technology including accessibility, informativeness, interactivity and personalization had a significant effect on visitor satisfaction of smart tourism village visitors. This shows that the concept of smart tourism is an integration between tourism resources and smart technology such as ICT [3] to provide satisfying services for tourists. Smart technology has provided attractive and innovative features that can encourage tourists' creativity in creating unforgettable experiences [9]. For tourists, this smart technology becomes very important when they need various information about the desired tourist destination. So that the tourism industry in general and tourist destinations in particular try to follow trends by adopting smart technology to promote smart tourist destinations. For the purpose of building smart tourist destinations, it is necessary to evaluate whether the expected interesting experiences during tourism are in accordance with the performance of the tourism products or services.

The development of the tourism industry with technology in the era of the industrial revolution 4.0 allows the tourism industry to be smarter and communication information technology to be the backbone. The smart tourist village in Yogyakarta, Indonesia has led to the application of information technology in line with its concept, its application through promotional media, smart features to access all information related to the desired tourist destination such as location, price, accommodation, purchasing airline tickets, tourist destination information, culinary, check in the plane. It is proven that technology can influence and shape the way a person conducts tourism activities, from planning a trip, while on a trip, to when he returns from his trip," said Fransiskus Xaverius Teguh, Assistant Deputy for Strategic Management of the Ministry of Tourism, at the *Focus Group Discussion* (FGD) event.) with the theme Technology and Tourism, at the

Morrisey Hotel, Jakarta, Friday (05/04/2019). So if all the ease of access, easy to find information and have personal information when going to make a visit and finally get an extraordinary experience then it can be said to be able to satisfy tourists.

The findings of this study indicate that informativeness has a dominant influence on tourist satisfaction with the largest beta of 0.916. If tourists get all relevant and important information related to their trip with the applied technology, they will give a positive assessment and increase satisfaction. This finding is in line with [6, 7].

b. Travelers' Readiness

The results show that the four indicators of travelers' readiness such as innovativeness, discomfort, insecurity and optimism have a significant effect on the satisfaction of smart tourist visitors. Discomfort and insecurity have a negative effect on satisfaction, while innovativeness and optimism have a positive effect. As it is hypothesized that if tourists have an optimistic and innovative attitude towards the technology applied in smart tourism, it will increase tourist satisfaction. Conversely, if tourists feel discomfort and insecurity about technology, satisfaction will decrease.

This study proves that optimism has a dominant influence on satisfaction, this finding is not in line with [7]. Optimistic attitude towards technological progress will give a positive assessment and ultimately increase satisfaction. Optimism is defined as the positive belief of people who consider technology to be able to increase control and efficiency in achieving company goals. Optimistic individuals prefer to use technology because they are aware of its function. The community's readiness to face digital transformation can be seen from two sides, namely: technical readiness, and preventive preparedness. Technical readiness, including the ability to use the device. To get the benefits of a technology, of course it is necessary to understand how to use it. This problem usually arises in smart tourism managers, namely awareness of the functions and benefits of technology or not being technologically literate.

5   Conclusion

Research on smart tourism technology (STT) that adopts Huang *et al.,* [6] namely accessibility, informativeness, interactivity and personalization and four dimensions of technology readiness (TR) from Parasuraman [10] such as innovativeness, discomfort, insecurity and optimism, it can be proven that all indicators of smart tourism technology and technology readiness affect tourist satisfaction. The negative influence on discomfort and insecurity needs to be handled by smart travel technology providers.

Theoretical implications, the results of this study provide a strengthening of behavioral theory where tourist satisfaction will be influenced by smart tourism technology, but if you are able to pay attention to personal characteristics, namely technology readiness.

Practical implications, the results of this study will provide practical implications for smart tourism managers to be able to develop strategies on how to provide satisfaction to tourists through external aspects, namely smart tourism technology (STT) and internal aspects, namely technology readiness.

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