The Role of Technology and Innovation in Creative Tourism:
The Digital Native Perspective

Yackob Astor[1] Nono Wibisono[2] Syifaa Novianti[2,*] Wahyu Rafdinal[2]

[1] *Department of Civil Engineering, Politeknik Negeri Bandung*
[2] *Department of Commerce Administration, Politeknik Negeri Bandung*
*Corresponding author. Email: syifaa.novianti@polban.ac.id

ABSTRACT

As an integral part of their life, technology and innovation inspire digital natives to travel and recommend the destination that suits them. Creative tourism as one of the most in-demand tourist attractions by digital natives requires external inputs that generate a qualified experience environment. This study investigates the role of technology and innovation in creative tourism from the perspective of digital natives: Generation X and Millennials. Using questionnaires from 455 digital natives in several creative tourism attractions in the greater Bandung region, Indonesia, this study reveals that technology and innovation, besides experience quality, are essential aspects that drive tourist satisfaction towards creative tourism attractions. This paper, therefore, presents new insights at the crossroads of creative tourism and digital natives, by focusing on technology and innovation for qualified tourists' experiences.

Keywords: creative tourism, digital natives, technology, innovation.

1. INTRODUCTION

Digital natives are one of the early generations who are raised and live in the era of information and technology development. [1] says that this generation is difficult to generalize because of the high disparity in motivation, lifestyle, and habits. In contrast to the previous generation, [2] argues that the digital native generation, consisting of Generation Z and Millennials, is usually loyal and prefers jobs that match their passions and are meaningful for their lives. They are also easy to provide input, both criticism and suggestions, on many occasions. Thus, understanding their behavior can provide information about their expectations and perception and consequently measure their loyalty and satisfaction as consumers.

The study notes that today's digital natives tend to look for new attractions where they can learn and gain authentic experiences by being directly involved in activities at tourist attractions [3]. Creative tourism that offers this authentic experience has become very popular [4]. Thus, this trend certainly encourages many researchers to know the behavior of tourists, including their satisfaction, especially in creative tourism. Experts agree that the experience obtained at the tourist attractions is the main factor influencing tourist

satisfaction and intentions [5]. On the other hand, technology and innovation that are inherent and part of the activities in tourist attractions play an essential role in influencing this satisfaction.

However, research in the creative tourism context is limited. As people's behavior evolves in line with the information and technology development [6], previous studies have not answered how the impact of technology and innovation on today's tourist satisfaction, mainly digital natives. For this reason, further research is needed to fill this gap.

Thus, this study aims to examine tourist satisfaction with creative tourism from a digital native perspective. This study examines how the quality of experience, technology, and innovation as driving factors contribute to tourist satisfaction. Theoretically, this research is expected to provide insight into tourist satisfaction in creative tourism in the digital era. In addition, it is also expected to help policymakers and creative tourism providers formulate strategies to gain and maintain tourist satisfaction, especially Generation Z and Millennials as the leading segments in digital natives.

2. BACKGROUND

2.1. Digital Natives

A digital native is a generation that was born when technology began to be widely adopted. The term digital native is often used to describe children who grow up using technology such as computers, mobile devices, and the internet [7]. Some people also refer to this generation as the Millennium. Some others categorize this generation as people born after 1980 [2]. Technology has changed the digital native's way of life, which makes it quite different from previous generations, especially in reading, processing information, and solving problems. This group is also known as a generation proficient in technology and accustomed to change and innovation. Prensky [8] views that online life on digital media has become their entire philosophy of life as they live.

Digital natives are likely to change tourism and the way the industry works [8]. The tourism distribution system that relies on retail travel agents, for example, is considered no longer relevant to current tourism demand ([9]. Digital natives want speed in the travel planning process with technology that gives them time efficiency and freedom in managing their trips [10]. It implies that tourism businesses that still rely on the old ways will find it difficult to operate profitably in a highly dynamic environment. This change is an important phenomenon that can create new opportunities and challenges for the development of the tourism industry. Thus, generation-based research is significant because there is a need for further studies to identify each generation's different needs and desires [11]. Recent findings, for example, show that tourism destinations need to apply contemporary principles and practices immediately by employing technology to meet the needs of digital natives who seek a digital and gamified tourism experience [12].

2.2. Tourist satisfaction model

Tourist satisfaction is a critical factor in the success of the tourism business. It can be achieved when tourists' assessment of the attributes of the destination exceeds their expectations [13, 14]. In understanding this phenomenon, researchers propose several theoretical models of tourist satisfaction. One of the most widely accepted models is the experience quality-behavioral intention model, where experience quality is the primary determinant of tourist satisfaction [15]. Quality is an attribute of a product or service at a destination while satisfaction is a tourist's psychological response to the consumption [16] It can be interpreted that the quality of the experience is a driver of tourist satisfaction. Furthermore, the evaluation results of the quality of the experience further encourage the intention of tourists to visit again and even recommend destinations to others [17]. The experience quality-behavioral intention model supports many empirical studies, including creative tourism] [18]. However, the development of this model also needs to be done to explore new factors in influencing tourist satisfaction that is relevant to the industry developments.

Recent studies explain that technology plays an essential role in driving tourist satisfaction. The technology in tourism products and services improves the quality of the tourist experience in visiting destinations. Technology allows tourism operators to provide personalized services to optimize the experience gained by tourists [19]. It is said that tourism businesses need technology to facilitate tourists planning their trips and enjoying their visits while at tourist attractions. Recent studies note that technology is an essential factor influencing tourists' pre-visit, on-visit, and post-visit behavior [20] Although most studies agree on the importance of this technology, there are still few studies that explain how technological factors affect satisfaction, especially in tourist attractions.

The competitive tourism industry forces managers to continue to innovate, including those engaged in creative tourism [21]. Innovation describes a novelty or change [22], i.e., new products, processes, resources, or target markets [23]. [24] state that in a competitive environment, innovation differentiates a tourist attraction from its competitors. It is because innovative tourist attractions will provide a better experience than others. Innovation is a driving force for tourist attractions to continue improving their products and services to achieve tourists' satisfaction and build their loyalty. The increasingly competitive industry and the changing needs of tourists indeed force creative tourism managers to continue innovating to become tourist attractions that are adaptive to change [17].

This discussion forms the basis that the experienced-quality model needs to be expanded to explain tourist satisfaction with creative tourist attractions. As shown in Figure 1, the model of tourist satisfaction visiting a tourist attraction includes the quality of experience, technology, and innovation as drivers of satisfaction.
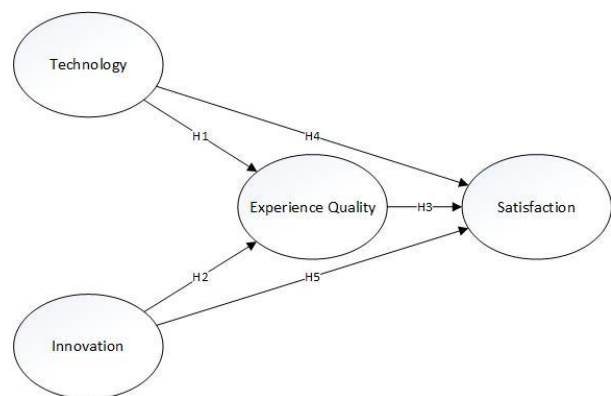

Figure 1 Theoretical framework

2.3. Technology factor

Technological developments in the tourism and travel sectors have changed the behavior of tourists and how the industry works [25]. In dynamic creative tourism, many tourist attractions are starting to apply technology to help optimize the tourist experience [26]. The existence of technology certainly affects tourism management and marketing, which was initially static and practical to become more dynamic [27]. Technology allows policymakers, stakeholders, and tourism providers to provide better services to tourists. Furthermore, activity personalization enabled by technology also makes it easier for tourists in the planning process and during visits to tourist attractions [23]. Consequently, this encourages the achievement of tourist satisfaction with products and services at creative tourist attractions. Previous studies on tourism-related technologies analyze technology adoption that affects tourists' psychological experiences and behavior [20, 28], tourist satisfaction [26], and choosing and visiting tourist destinations [25]. Also, it is said that the adoption of technology in tourism can influence the attitudes and behavior of tourists towards attractions and destinations. Thus, the following hypotheses are stated.

H_1: Technology has a positive significant effect on experience quality.
H_2: Technology has a positive significant effect on satisfaction.

2.4. Innovation factor

Several works of literature emphasize the importance of innovation for business entities, especially in the increasingly competitive tourism industry. The innovation process aims to create something unique and new that competitors do not own [29]. From the economic perspective, the existence of new and better changes in many business organizations contributes to the overall economic development [22]. Therefore, innovation must be the focus of tourism managers and policymakers [30] to continue to adapt to changing needs and demands of tourists [4]. The innovative tourist attractions or destinations consequently can sustain themselves amid a dynamic and competitive tourism industry.

H_3: Innovation has a positive significant effect on the quality of experience.

In the current digital era, tourists want the speed of service and the convenience of traveling right at their fingertips. They can certainly get this convenience in tourist attractions built on the latest technological infrastructure that everyone can access [32]. Previous studies have shown a relationship between innovation in tourist attractions and destinations and technology acceptance in tourists [6, 30]. The results show that tourist satisfaction is driven by technology in tourist attractions that enhance the quality of the experience. Thus, the following hypothesis is stated.

H_4: The quality of experience has a positive significant effect on satisfaction.

Tourism innovation, in essence, is a creative concept in problem-solving and service improvement by enhancing the co-creation of the tourism experience [31]. It aims to create tourist satisfaction with the tourism products/services offered. Service innovation can be in the process improvement, product updates, management effectiveness, and even the new target markets [23]. [32] in their research related to smart tourism conclude that destinations built based on innovation tend to have higher tourist satisfaction. Meanwhile, [24] in the context of dark tourism state that site innovation has a significant effect on the satisfaction of visiting tourists.

H_5: Innovation has a positive significant effect on tourist satisfaction.

3. RESEARCH METHODS

This study adjusted the previous research instrument with the measurement of the constructed variable. The quality of experience was evaluated with indicators of peace of mind, escape, learning, involvement, and recognition elements [15, 33]. Innovation was measured by four items [23, 34]. Technology was assessed with five items [20, 26]. Finally, tourist satisfaction was measured by three indicators [15, 33].

This research was conducted in Greater Bandung, Indonesia. This location was chosen because it is one of the unique tourist destinations with a mix of attractions, ranging from nature, culture, to contemporary tourist attractions. A total of 455 tourists from 25 tourist attractions (seven agrotourism, eight contemporary, seven cultural, and two others) were taken as respondents using the convenience sampling technique. This study tested the identified theoretical models developed based on past studies and testing in a new environment. Considering its purpose and following the recommendations of Hair et al [35], this study used variance-based structural equation modeling (PLS) to test the model and evaluate the relationships between variables. In addition, this method was also used because the data were not normally distributed. The process of testing the proposed model was carried out using two stages. The first stage was to assess the validity and reliability of the construct. In contrast, the second stage was intended to evaluate the model's suitability and test the proposed hypothesis. All test models were carried out using SmartPLS. Meanwhile, to analyze the respondent's profile, this study used SPSS software.

4. CONCLUSION

4.1. Data Analysis

Table 1 notes that most of the respondents are young (under 35 years old). In the normal situation, the creative tourism visitors tend to be distributed equally among the age. However, due to health risks in the COVID-19 pandemic, the majority of visitors are young tourists. Therefore, most young-aged tourists in this study reflect the population of the creative tourism visitors during the COVID-19 outbreak.

Table 1. Demographic Characteristics of the Respondents

Variable	Description	Frequency	%
Gender	Male	111	22.8
	Female	344	70.6
Education	<High school	48	9.9
	High School	343	70.4
	Diploma	29	6.0
	Graduate/ Postgraduate	35	7.2
Age	>45	8	1.6
	35-45	27	5.5
	23-35	32	6.6
	18-22	388	79.7
Visitation	First time	263	54.0
	2-3 times	135	27.7

4.2. Measurement Model

Table 2 specifies that CR has a value of more than 0.7, AVE has a value higher than 0.5, and all loading values are more than 0.6 [35]. With all of these indicators, the requirement of validity and reliability of the constructs are met.

Table 2. Loading, Composite Reliability (CR), and AVE

Construct/Item	Loading*	CR	AVE
Technology		0.877	0.645
- The destination can be searched and traced online	0.641		
- Online payment availability	0.830		
- Online booking available	0.888		
- Traffic to the destination can be tracked online	0.830		
Innovation		0.772	0.530
- Keep delivering new service	0.761		
- Keep offering new attraction	0.716		
- More attractive than other competitors	0.706		
Experience Quality		0.863	0.558
- Escape from daily life	0.732		
- Obtain new knowledge	0.741		
- Felt Comfort	0.770		
- Felt Relax	0.751		
- Offer unique experience	0.740		
Satisfaction		0.888	0.725
- Excellent experience	0.815		
- Experience more than expectation	0.884		
- Overall satisfied	0.854		

*: *All significant at p<0.01*

Following [36]'s recommendation, this research employed the Heterotrait-Monotrait ratio (HTMT) to assess the discriminant validity of the constructs. The result (Table 3) shows that as all values are lower than 0.9, all the constructs satisfy the discriminant validity requirement.

Table 3. The Heterotrait-Monotrait ratio (HTMT)

	(1)	(2)	(3)	(4)
Experience Quality (1)				
Innovation (2)	0.215			
Satisfaction (3)	0.589	0.385		
Technology (4)	0.326	0.102	0.346	

4.3. Structural Model

Table 4 illustrates that technology, as hypothesized, has a significant influence on experience quality ($\beta = 0.257$, $p<0.01$) and satisfaction ($\beta = 0.158$, $p<0.01$). Similarly, innovation has a significant influence on experience quality ($\beta = 0.128$, $p<0.01$) and satisfaction ($\beta = 0.191$, $p<0.01$). Finally, also as expected, experience quality has a significant on satisfaction ($\beta = 0.407$, $p<0.01$). Thus, hypotheses H1 to H5 are supported. Lastly, the total effect column shows that technology and innovation, directly and indirectly, affect satisfaction.

Table 4. The results of hypotheses testing and the variables effect

Path	Direct effect		Indirect effect		Total effect	
	ß	t-value	ß	t-value	ß	t-value
Technology -> Experience Quality (H1)	0.257	5.714**	-	-	0.257	5.714**

Innovation -> Experience Quality (H2)	0.128	2.700**	-	-	0.128	2.700**
Experience Quality -> Satisfaction (H3)	0.407	11.235**	-	-	0.407	11.235**
Technology -> Satisfaction (H4)	0.158	3.791**	0.105	5.012**	0.263	5.466**
Innovation -> Satisfaction (H5)	0.191	5.714**	0.052	2.673**	0.243	5.591**

This study reveals the vital role of technology and innovation in creating tourist satisfaction while visiting creative tourist attractions. In addition, it expands previous studies [20, 26] by revealing that technology and innovation directly affect tourist experience and satisfaction. From a digital native perspective, these findings reinforce previous theories about this group's need and want when traveling and visiting a tourist attraction to achieve their satisfaction. Digital natives are expected to receive accessible services, especially during the pre-visit process and on-visit experience at the tourist attraction. They want information about destinations and accessibility that can be searched and tracked online. In destination selection, digital natives are also more interested in destinations that provide new offerings/innovations in services (i.e., ease of payment and booking) and product variety (i.e., new attractions that enhance their experience) than other destinations.

To sum up, this study highlights the digital native response to technology and innovation that affects their travel experience and satisfaction at creative tourist attractions. By understanding the digital native perspective, creative tourism managers, who want to focus on targeting this group, can prioritize technology adaptation to improve tourism services and products. In addition, creative tourism managers must continuously innovate to cope with the rapid change of technology and changing needs and demands of tourists so that they can sustain themselves in the competitive tourism industry.

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