



Technology Acceptance and Sustainable Tourism: The Impact of Smart Green Tourism Technology on Destination Loyalty

Anna Wulandari, Rahma Wahdiniwati^{ID},
Herman Surdiatno Soegoto^{ID}, Rizki Zulfikar^{ID}

Universitas Komputer Indonesia, Bandung, Indonesia
anna.75424001@mahasiswa.unikom.ac.id

Abstract. The integration of digital innovation and sustainability has encouraged tourist destinations to adopt smart technology to enhance enjoyable travel experiences. This study examines the role of Smart Green Tourism Technology (SGTT) in influencing destination loyalty through the Technology Acceptance Model (perceived ease of use, and perceived usefulness) and tourist satisfaction. This study was conducted through a survey, administering questionnaires to 203 tourists who had interacted with digital tourism technology as respondents. Structural Equation Modeling (SEM) was used to analyze the research data. This study found that smart green tourism technology influences destination loyalty through perceived ease of use, perceived usefulness, and tourist satisfaction. Smart Green Tourism Technology increases perceived ease of use but does not affect perceived usefulness. Perceived ease of use, and perceived usefulness enhance tourist satisfaction. High tourist satisfaction will increase destination loyalty. Tourist satisfaction mediates the Technology Acceptance Model (perceived ease of use and perceived usefulness). Perceived ease of use mediates the effect of smart green tourism technology on tourist satisfaction, which ultimately increases destination loyalty. Perceived usefulness mediates perceived ease of use on tourist satisfaction, which ultimately increases destination loyalty, but does not mediate smart green tourism technology on tourist satisfaction. SGTT influences destination loyalty through perceived ease of use and consumer satisfaction. SGTT influences destination loyalty through perceived ease of use, perceived usefulness, and tourist satisfaction. The results of this study have implications for the importance of user-friendly smart tourism technology in strengthening tourist satisfaction and long-term destination loyalty.

Keywords: Smart Green Tourism Technology, Technology Acceptance Model, Tourist Satisfaction, Destination Loyalty, Smart Tourism.

1 Introduction

The rapid advancement of digital technology has profoundly transformed the global tourism sector. The integration of smart technology and sustainability-focused methodologies is a key driver. Tourist's experience, streamlined operational processes, and the

promotion of tourism development, better known as the concept of smart tourism, are the foundations for tourist destinations to adopt these technological innovations. This technological adoption is expressed in the form of smart tourism, a strategic framework that integrates digital technology, data-driven services, and interactive platforms within tourist destinations [1]. Furthermore, the concept of smart tourism is also implemented through sustainable practices that seek to increase tourists' environmental awareness, thereby reducing adverse ecological impacts while maintaining economic viability. This combination of smart technology and sustainability efforts ultimately gave rise to Smart Green Tourism Technology (SGTT). This technology integrates advanced digital solutions with environmentally conscious management [2]. This technology is increasingly being used to enhance the tourist experience and the environmental performance of destinations. Artificial intelligence (AI), metaverse platforms, augmented and virtual reality (AR/VR), intelligent environmental monitoring systems, and AI-based service interfaces are some examples of these smart technologies [1-3].

The implementation of smart green tourism technology (SGTT) encourages increased tourist engagement in trip planning and enhances the overall travel experience [4]. SGTT enables tourists to access real-time information, receive personalized recommendations, engage in immersive virtual experiences, and enjoy environmentally friendly travel services. SGTT enables tourism destination managers to provide more efficient services and manage resources more optimally. For tourists, SGTT encourages sustainable travel behavior. Previous research found that smart tourism technologies influence increased value, service quality, and tourist satisfaction [4, 5]. Sustainable technology systems such as smart energy management, digital waste monitoring, and eco-friendly transportation platforms strengthen the environmental image of tourist destinations and encourage responsible behavior from tourists [6, 7], thereby raising tourist destinations' awareness of the importance of smart green technology tourism as a strategic tool to achieve sustainability goals and long-term competitiveness in the global tourism market.

The importance of Smart Green Tourism Technology (SGTT) has led to an increasing number of tourist destinations adopting it. However, research on the role of SGTT in tourist loyalty, characterized by the intention to revisit and/or at least recommend to others, remains relatively limited and underexplored. Previous research only examined the relationship between experience, value, satisfaction, and loyalty [4]. Research by H. Liu & Park (2024) focused solely on the constructs of digital experience, destination image, or service quality [1]. The limited use of behavioral approaches, which have not been widely implemented, limits the ability of researchers and practitioners to fully understand the pathways through which smart green tourism technology influences long-term tourist relationships and destination loyalty.

One behavioral approach that explains technology adoption behavior is the Technology Acceptance Model (TAM). TAM, with its various elements, focuses on two primary cognitive perceptions: perceived usefulness (PU) and perceived ease of use (PEU). This perception influences how users view the existence of technology, which in the next stage shapes their behavioral intentions to use it. TAM has been widely applied in various digital service contexts, including tourism [8, 9]. TAM-based studies in tourism are still limited to digital technology adoption intentions and have not yet

explored its implications, such as destination loyalty. This opportunity necessitates further research on the TAM framework regarding tourist acceptance of smart green tourism technology and its influence on tourist loyalty to tourist destinations.

Previous research [10] recommended expanding research on TAM by incorporating additional psychological and experiential constructs relevant to tourism behavior. Tourist satisfaction is an important variable because it represents the overall evaluation of a destination's ability to meet or exceed tourist expectations. Satisfaction plays a crucial role in shaping long-term loyalty [10-12]. Satisfaction serves as an important mediating mechanism between technology acceptance and loyalty.

Tourists who perceive smart tourism green technologies (SGTT) as useful and easy to use will experience higher levels of satisfaction. SGTT provide immersive and personalized services that enhance the overall travel experience.

SGTT increase information accessibility, reduce uncertainty during travel, and create engaging experiences that enhance traveler satisfaction [3, 13]. Interactive mobile apps, AR/VR, AI chatbots, and metaverse-based tourism platforms are some examples of SGTT. The integration of environmentally conscious technology can strengthen the sustainability of tourists' commitment, emotional attachment, and loyalty to a tourist destination. Previous research by Kamar et al., (2023) has revealed that ecogamification and technology-based sustainability initiatives demonstrate that technological engagement can stimulate tourist attitudes and behavior [14].

This study attempts to address several limitations and/or gaps in previous research [1, 3, 7]. Previous research has only examined technology adoption and loyalty separately. Research on advanced technologies such as AR/VR, AI-based services, and metaverse tourism platforms has not examined a structured pathway linking technology adoption to loyalty. Research explicitly examining the pathways of technological innovation, TAM (PEU and PU), satisfaction, and behavior in the context of smart green tourism technology is still very limited. This study specifically analyzes the influence of smart green tourism technology adoption on destination loyalty, which remains conceptually fragmented and empirically underexplored.

This study attempts to develop an integrated concept of the influence of smart green tourism technology on destination loyalty through the mediating role of the acceptance technology and tourist satisfaction. This study proposes that Smart Green Tourism Technology (SGTT) has a positive effect on perceived ease of use and perceived usefulness, which in turn influence tourist satisfaction. Increased tourist satisfaction is expected to strengthen tourist loyalty. The novelty of this study lies in the integration of smart green tourism technology, TAM constructs, satisfaction, and loyalty into an integrated model. This research contributes to the advancement of theory while providing practical insights for tourism destination managers through digital innovation to strengthen long-term loyalty.

2 Literature Review

The ongoing increase in the adoption of advanced digital technologies indicates a transformation of the tourism industry toward smart tourism destinations [2, 3, 7]. This technological adoption is manifested in the form of Smart Green Tourism Technology (SGTT), which integrates advanced digital technologies with sustainable tourism management practices [2, 3, 7, 15]. Artificial intelligence (AI), intelligent environmental monitoring systems, virtual reality (VR), augmented reality (AR), and digital tourism platforms are some examples of these smart technologies. SGTT enables tourist destinations to provide interactive and efficient services to tourists [3]. SGTT plays a crucial role in shaping the perceived ease of use of technology.

Previous research found that the use of technology (the availability of intuitive digital platforms and interactive tourism applications) has been shown to increase tourists' perceived ease of use [4]. The use of technology in the form of smart green tourism technology (SGTT) simplifies the entire travel process [15]. Tourists can easily access real-time information, obtain digital navigation, and experience personalized travel services [1, 4]. Other research Van et al., (2020) shows that seamless digital interfaces can enhance tourists' ability to interact with tourism services efficiently, thereby increasing perceived ease of use [13]. Ecogamification platforms and digital applications enhance tourists' interaction experiences with tourism technology [14], especially when these systems are designed with intuitive features and interactive interfaces. The integration of smart green technology in tourist destinations makes the travel experience simpler and more convenient. Tourists can access tourism services more efficiently through smart systems, digital destination guides, and automated service platforms [6, 7]. These technological innovations improve tourists' perceptions of technology usability. Smart technology plays a crucial role in shaping the perceived usability of smart technology in the tourism industry.

H1: Smart Green Tourism Technology positively influences perceived ease of use.

One of the core elements of the Technology Acceptance Model is perceived usefulness (PU), which is the perceived benefits individuals derive from technological innovation [1]. Perceived usefulness depends on the smart tourism platform (SGTT) used. Smart tourism platforms provide benefits by allowing tourists to easily access travel recommendations, digital maps, virtual experiences, and real-time information.

Smart technologies such as AR/VR and meta verse-based travel platforms influence travel planning [4, 5]. The application of smart technology allows tourists to virtually explore tourist destinations and access immersive travel content [4, 5]. AI-based travel services such as chatbots and intelligent recommendation systems increase tourists' perceptions of technology usefulness [13]. The integration of sustainability-oriented technologies such as eco-friendly transportation platforms and digital monitoring systems increases the perception of the usefulness of smart technology [6]. SGTT increases tourists' perceptions that tourism technology provides meaningful and beneficial functions.

H2: Smart Green Tourism Technology positively influences perceived usefulness.

Perceived ease of use [8], and perceived usefulness [1] are fundamentally interrelated in the Theory of Acceptance Model (TAM). Easier-to-use technology provides greater benefits. Users can operate the technology efficiently without requiring significant effort or technical expertise [9]. Digital technology that provides an intuitive interface that is easy to learn and operate makes tourists perceive the technological innovation as more useful [8, 9]. Mobile tourism apps with simple navigation features allow tourists to access destination information, transportation services, and travel recommendations more efficiently, thereby increasing the perceived usefulness of the technology.

Perceived ease of use positively influences perceived usefulness [16, 17]. Simple and accessible digital service platforms enhance tourists' perceptions of usefulness. The easier a digital technology is to use, the higher the perceived usefulness.

H3: Perceived ease of use positively influences perceived usefulness.

Easy-to-use smart tourism technology allows for quick access to information, allowing tourists to interact with tourism services without frustration or hassle. User-friendly digital tourism platforms tend to elicit positive emotions, indicating tourist satisfaction [4]. Smart tourism platforms and digital tourism services demonstrate that intuitive technological interfaces enhance the overall service experience, leading to tourist satisfaction [1].

The integration of user-friendly sustainability technologies will strengthen tourists' perceptions of convenience and environmental engagement. Technologies that facilitate environmentally friendly behaviors—such as digital guides for sustainable travel or smart environmental monitoring systems—increase tourist satisfaction [6, 14].

H4: Perceived ease of use positively influences tourist satisfaction.

Perceptions of usability influence traveler satisfaction. Travelers who perceive benefits from the implementation of digital technology, such as perceived efficiency and access to valuable travel information, tend to provide positive evaluations. Technology that provides functional benefits contributes positively to satisfaction levels [10, 11].

Digital technology helps tourists plan trips more efficiently, and they gain comprehensive information by accessing interactive destination content. These perceived usability features positively contribute to satisfaction levels [5]. Immersive technologies such as AR and VR that benefit tourists will increase their satisfaction [3].

Smart environmental technology also influences tourist satisfaction through sustainability promotion activities. Initiatives to communicate sustainable tourism promotions based on digital technology will drive increased tourist satisfaction [7]. Therefore, higher perceived usefulness of smart technology will increase tourist satisfaction.

H5: Perceived usefulness positively influences tourist satisfaction.

Satisfaction is a key factor influencing loyalty. Satisfied travelers are more likely to return to a destination. Satisfied travelers will promote it to others. Satisfied tourists are more likely to revisit or at least promote it to potential visitors [11, 12].

Travelers who positively evaluate their travel experience (satisfied), develop an emotional attachment (loyalty) to the destination, making them more likely to revisit,

and/or at least recommend the destination to others ([4]; M. Liu et al., 2022). Immersive technological experiences strengthen tourists' emotional connections with destinations. The satisfaction tourists experience with technologies such as AR/VR, AI-based services, and interactive tourism platforms encourages them to maintain long-term relationships with destinations [1, 3].

H6: Tourist satisfaction positively influences destination loyalty.

3 Methodology

This research is a causal explanatory study, employing a quantitative approach. It aims to examine the effect of Smart Green Tourism Technology (SGTT) on destination loyalty, mediated by perceived ease of use, perceived usefulness, and tourist satisfaction. This research is based on the Technology Acceptance Model [8, 9]. The model is constructed by integrating tourist satisfaction as a connecting variable between the influence of technology on destination loyalty, where tourist satisfaction is the primary predictor of destination loyalty [10, 12]. Fig. 1 show off the conceptual framework of the study.

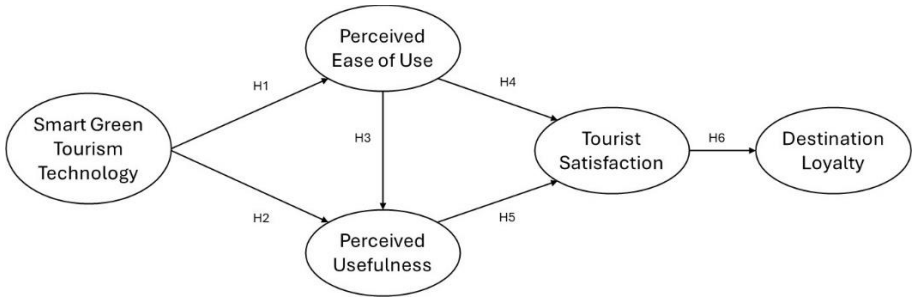


Fig. 1. Research model.

This study proposes a series of causal relationships between SGTT, TAM constructs, satisfaction, and destination loyalty. Smart green tourism technologies improve service efficiency, interactions, and information access, which positively impact perceived ease of use and perceived usefulness. These perceptions then influence tourist satisfaction and ultimately destination loyalty. Ease of use reflects how easy available digital platforms are to access and operate, while perceived usefulness reflects the extent to which the technology provides benefits to users (Davis, 1989). Smart green tourism technology improves information accessibility, service efficiency, and interactive experiences, which positively influence perceived ease of use and perceived usefulness [1, 4]. Technology that is easier to operate is more likely to be perceived as useful by users [9]. Perceived ease of use and perceived usefulness positively influence tourist satisfaction levels. Satisfied tourists will influence destination loyalty [10, 12].

Research data collection was conducted by distributing research questionnaires to 203 tourists visiting tourist destinations that have implemented smart green tourism technology. Sampling was conducted using purposive sampling. The main criteria for

the research sample as respondents were tourists who had interacted with digital green tourism technology such as mobile tourism applications, digital ticketing systems, augmented reality attractions, AI-based information services, or environmentally oriented smart tourism platforms. The questionnaires were distributed online using various digital platforms. The demographic profile of respondents in this study included gender, age, occupation, education level, and travel frequency.

The majority of respondents were male, namely 134 people (66%), and the remaining 69 respondents (34%) were female. The ages of respondents were dominated by the age range of 21–30 years, namely 76 respondents (37.4%), aged ≤ 20 years as many as 71 people (35.0%), aged 31–40 years as many as 26 people (12.8%), aged 41–50 years as many as 22 people (10.8%), and the smallest group consisted of respondents aged ≥ 51 years as many as 8 people (3.9%). The largest proportion of respondents' occupations were students totaling 98 people (48.3%), private employees as many as 74 respondents (36.5%), entrepreneurs (10 respondents or 4.9%), government employees (8 respondents or 3.9%), and respondents categorized as others (13 respondents or 6.4%). The majority of respondents (110 respondents) had a high school education, followed by 85 (41.9%), 4 (2.0%) with a bachelor's degree, 3 (1.5%) with a postgraduate degree, and 1 (0.5%) with a diploma. The majority of respondents (138 respondents or 68.0%) traveled 1–4 times per year, 44 (21.7%) with 5–8 times per year, 14 (6.9%) with more than 12 times per year, and 7 (3.4%) with 9–12 trips per year.

The relationships between constructs in the proposed research model were tested using a statistical approach, namely Structural Equation Modeling (SEM), based on previously collected data. SEM is widely used in social science research. SEM allows researchers to examine multiple relationships between latent variables simultaneously while accounting for measurement error. The research data analysis involved two stages: evaluation of the model's measurements and testing the overall model structure.

The measurement model was assessed by testing construct validity and reliability. Construct validity was assessed through convergent and discriminant validity. Convergent validity was evaluated based on factor loading (LF) and average variance extracted (AVE) values. Discriminant validity was assessed by comparing the square root of AVE with the correlation values between constructs. Reliability was evaluated using Cronbach's alpha and composite reliability values, which assess the internal consistency of measurement items.

SEM is used to test the SGTT hypothesis on perceived ease of use (PEU) and perceived usefulness (PU), tourist satisfaction, and destination loyalty directly and indirectly. The test was conducted using path coefficients and statistical significance levels. The hypothesis was accepted if the path coefficient value was not equal to zero and the significance value was lower than the research test level (5%)

Table 1. Measurement model.

Variable/Indicator	Outer Loading	Conclusion
Smart Green Tourism Technology (CA: 0,957 CR: 0,966 AVE: 0,824)		Reliable
SGTT1 The tourism destination provides advanced smart technologies to support tourist activities.	0,878	Valid
SGTT2 Digital technologies (e.g., mobile apps, smart systems, AI-based services) make my travel experience more convenient.	0,876	Valid
SGTT3 The destination uses technology to provide environmentally friendly tourism services.	0,890	Valid
SGTT4 Smart technologies help reduce environmental impact during tourism activities	0,926	Valid
SGTT5 Smart tourism systems provide real-time information that enhances my travel experience.	0,931	Valid
SGTT6 smart tourism systems integrate smart technologies and sustainability initiatives.	0,944	Valid
Perceived Ease of Use (CA: 0,925 CR: 0,947 AVE: 0,817)		Reliable
PEOU1 Learning to use smart tourism technologies in this destination is easy	0,908 0,907	Valid Valid
PEOU2 I find the smart green tourism technologies (SGTT) easy to use.	0,919	Valid
PEOU3 It's easy for me to be part of these technologies.	0,881	Valid
PEOU4 Interaction with the SGTT is clear and understandable.		
Perceived Usefulness (CA: 0,950 CR: 0,947 AVE: 0,817)		Reliable
PU1 SGTT improve the efficiency of my travel activities.	0,927	Valid
PU2 Using SGTT enhances my travel experience.	0,940	Valid
PU3 Smart tourism help me obtain useful travel information quickly.	0,945	Valid
PU4 Overall, smart tourism technologies are useful for my tourism activities.	0,917	Valid
Tourist Satisfaction (CA: 0,945 CR: 0,960 AVE: 0,859)		Reliable
TS1 I am satisfied with my experience using SGTT at this destination.	0,924	Valid
TS2 My experience with this destination's smart tourism services meets my expectations.	0,912	Valid
TS3 I am pleased with my visit to this destination.	0,930	Valid
TS4 The tourism services supported by technology make my visit enjoyable.	0,941	Valid
Destination Loyalty (CA: 0,929 CR: 0,950 AVE: 0,825)		Reliable
DL1 I intend to revisit this destination in the future.	0,916	Valid
DL2 I will recommend this destination to others.	0,922	Valid
DL3 I will say positive things about this destination to other people.	0,896	Valid
DL4 This destination would be my first choice for future travel.	0,898	Valid

4 Results and Discussion

The analysis results are presented in two formats: tables and figures. A summary of the hypothesis testing results is presented in Table 2. The overall structural model is shown in Fig. 2.

Table 2. Hypotheses testing.

Path	Estimate	P-value	Result
H1 : Smart Green Tourism Technology → Perceived Ease Of Use	0,474	0,000	Significant (Support)
H2 : Smart Green Tourism Technology → Perceived Usefulness	0,047	0,229	Not Significant (Not Support)
H3 : Perceived Ease Of Use → Perceived Usefulness	0,791	0,000	Significant (Support)
H4 : Perceived Ease Of Use → Tourist Satisfaction	0,640	0,000	Significant (Support)
H5 : Perceived Usefulness → Tourist Satisfaction	0,249	0,000	Significant (Support)
H6 : Tourist Satisfaction → Destination Loyalty	0,914	0,000	Significant (Support)

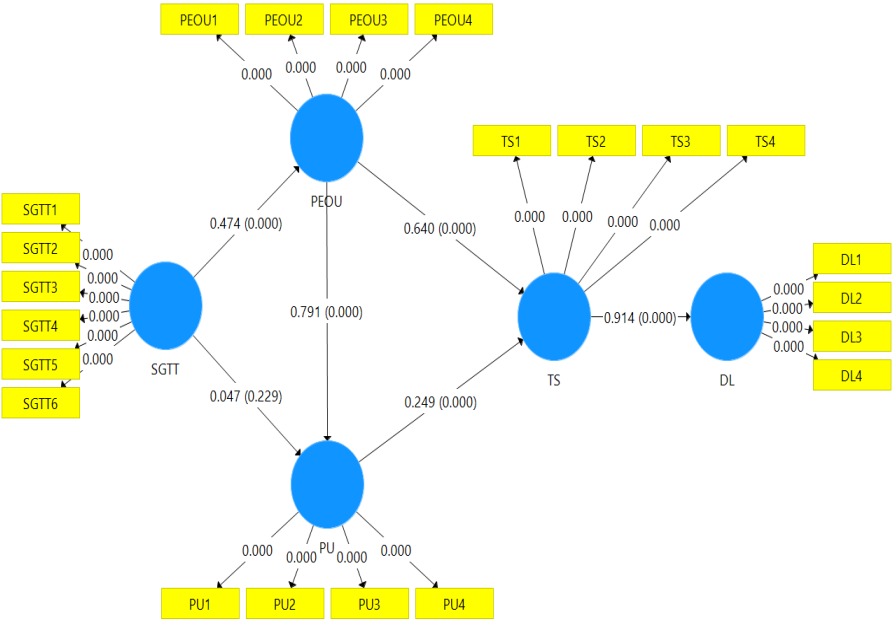


Fig. 2. Research results.

H1: Smart Green Tourism Technology positively influences perceived ease of use.

The first hypothesis is supported by the research results where Smart Green Tourism Technology significantly influences perceived ease of use. The coefficient of 0.474 indicates a moderate positive influence, which means that Smart Green Tourism Technology has effect on perceived ease of use with the positive direction. The better Smart Green Tourism Technology is implemented by a tourist destination, the greater the perceived ease of use. The presence of smart and environmentally oriented tourism technology increases tourists' perceptions that digital systems are easy to use. This result in line with the Technology Acceptance Model, where external technology characteristics influence users' perceptions of ease of use [6, 7]. The implication of these findings is the need to design intelligent technology platforms such as artificial intelligence, smart applications, and digital information systems with simple and easily accessible interfaces.

H2: Smart Green Tourism Technology positively influences perceived usefulness. The test results indicate that the hypothesis is not supported, as Smart Green Tourism Technology has no significant effect on perceived usefulness. In other words, smart green tourism technology does not influence tourists' perceptions of the usefulness of the technology implemented. This finding is inconsistent with previous findings [13], which stated that smart technology-based tourism services would strengthen perceptions of the usefulness of technology. The absence of an effect of Smart Green Tourism Technology on perceived usefulness indicates that the implementation of Smart Green Tourism Technology does not necessarily change perceptions of the usefulness of technology. The insignificant effect of SGT on perceived usefulness is understandable, as the results of previous research [6], which resulted in the finding that perceived usefulness is not directly influenced by the existence of technology but is influenced indirectly through user experience and interaction.

H3: Perceived ease of use has a positive effect on perceived usefulness. The test results show that perceived ease of use influences perceived usefulness. A coefficient value of 0.791 indicates that perceived ease of use has a strong effect on perceived usefulness with the positive direction. Easier to use technology is more useful [9]. Digital technology with an intuitive interface, easy to learn, and easy to operate is more beneficial for tourists [8, 9]. Mobile tourism applications with simple navigation features, providing various information (destinations, transportation services, and travel recommendations) that are easily accessible will increase tourists' perceptions of the usefulness of technology.

H4: Perceived ease of use positively influences tourist satisfaction. The test results show that perceived ease of use variable significantly impacts tourist satisfaction. The positive direction of the influence is indicated by a coefficient value of 0.640. Smart green tourism technology that is easy to use will make tourists tend to experience a more satisfying travel experience. Smart tourism technology that is easy to operate allows for quick access to information without experiencing frustration or complexity. Easy-to-use digital tourism platforms tend to elicit positive emotions indicating tourist satisfaction [4]. Smart tourism platforms and digital tourism services show that intuitive technology interfaces enhance the overall service experience, which satisfies tourists

[1]. The smart tourism technologies easy to use enhance tourist visit enjoyable. Interaction with the smart tourism technologies who is clear and understandable make the tourist satisfied.

H5: Perceived usefulness positively influences tourist satisfaction. The test results show that perceived usefulness significantly influences tourist satisfaction with a positive direction of 0.249. The tourists who perceive the application of smart technology to be beneficial will tend to have higher satisfaction. This findings align with previous research [10, 11]), which found that technology positively impacts satisfaction levels. Mobile apps, digital guides, and smart infrastructure improve information accessibility, service efficiency, and overall travel comfort (leading to a positive travel experience). Smart tourism technology, with its numerous benefits, will lead to greater tourist satisfaction.

H6: Tourist satisfaction positively influences destination loyalty. Test results show that tourist satisfaction significantly influences destination loyalty with a positive direction of 0.914. Tourist satisfaction has a very strong effect on destination loyalty with the positive direction; the higher the tourist satisfaction, the higher the tourist loyalty to that destination. Satisfied tourists are more likely to return to a destination; satisfied tourists are more likely to promote it to potential visitors [11, 12]. Tourists who evaluate their travel experiences positively have an emotional attachment, making them more likely to revisit, and/or at least recommend the destination to others ([4]; M. Liu et al., 2022).

Table 3. Specific indirect effect.

Path	Estimate	P-value	Result
PEOU → TS → DL	0,585	0,000	Significant (Influential)
SGTT → PEOU → TS → DL	0,277	0,000	Significant (Influential)
PEOU → PU → TS → DL	0,180	0,001	Significant (Influential)
SGTT → PEOU → PU → TS → DL	0,085	0,002	Significant (Influential)
PU → TS → DL	0,227	0,000	Significant (Influential)
SGTT → PU → TS → DL	0,011	0,278	Not Significant (No Effect)
SGTT → PEOU → PU	0,375	0,000	Significant (Influential)
SGTT → PEOU → TS	0,304	0,000	Significant (Influential)
PEOU → PU → TS	0,197	0,001	Significant (Influential)
SGTT → PEOU → PU → TS	0,093	0,002	Significant (Influential)
SGTT → PU → TS	0,012	0,278	Not Significant (No Effect)

There are three pathways of influence of SGTT on destination loyalty. First, SGTT influences destination loyalty through perceived ease of use and tourist satisfaction. Second, SGTT influences destination loyalty through perceived use, perceived usefulness, and tourist satisfaction. Third, SGTT influences destination loyalty through perceived usefulness and tourist satisfaction. Table 3, shown that the first and second pathways are significant, while the third pathway is insignificant.

SGTT indirectly influences destination loyalty through perceived ease of use and destination satisfaction. Tourist destinations that provide smart green tourism technology (SGTT) to support tourism activities or services such as mobile applications, smart

systems, and AI-based services with a simple and attractive interface will make tourists consider the technology implemented at the tourist destination easy to use [6, 7]. Tourists who experience the ease of use of smart green tourism technology, characterized by platforms that are easy to interact with, learn, understand, and use, will experience higher levels of satisfaction [1, 4]. Tourists who are satisfied with the experience of using smart tourism technology that meets expectations, are happy with their visit, will revisit to the tourist destination, and/or at least recommend the tourist destination to others [11, 12].

SGTT indirectly influences destination loyalty through perceived ease of use (PEU), perceived usefulness (PU), and tourists satisfaction. Tourist destinations that provide smart green tourism technology (SGTT) to support tourism activities or services such as mobile applications, smart systems, AI-based services with a simple and attractive display will make tourists perceive that the applied technology is easy to use [6, 7]. Tourists who feel the ease of use of smart green tourism technology is characterized by platforms that are easy to interact with, learn, understand and use will make tourists feel that the easy-to-use smart technology has high benefits [8, 9]. Tourists who feel the benefits of the application of easy-to-use smart green tourism technology because it increases the efficiency of travel activities, travel experiences, and helps obtain travel information will have higher satisfaction [10, 11]. Tourists who are satisfied with the experience of using smart tourism technology that meets expectations, feels happy with their visit will visit again and/or recommend the tourist destination to other [11, 12].

SGTT did not impact loyalty through perceived usefulness and tourist satisfaction. The success or failure of SGTT implementation did not impact tourists' perceptions of the benefits of the technology. This indicates that SGTT implementation does not automatically translate into tourists recognizing the benefits of technology in assisting their travels [6]. Therefore, efforts are needed to socialize the benefits of implementing smart technology in tourism activities to all parties in the tourism industry.

There are other interesting findings from this study related to the role of mediating variables. First, tourist satisfaction is the primary mediator, where tourist satisfaction mediates perceived ease of use (PEU), and perceived usefulness (PU) on destination loyalty. Second, perceived ease of use is the primary mediator in the acceptance theory, where perceived ease of use (PEU) mediates SGTT on tourist satisfaction. Third, perceived usefulness (PU) mediates perceived ease of use (PEU) on tourist satisfaction. perceived usefulness (PU) does not mediate SGTT on tourist satisfaction.

Tourist satisfaction mediates the theory of acceptance and destination loyalty and is the final mechanism linking technology acceptance to destination loyalty. Tourists who perceive digital tourism technology as easy to use and useful will experience higher levels of satisfaction [1, 4, 10, 11]. This satisfaction ultimately drives repeat visits and positive recommendations to others [3, 12].

Perceived ease of use plays a central mediating role in the acceptance model theory. Perceived ease of use serves as a key mechanism explaining Smart Green Tourism Technology in influence on perceived usefulness, satisfaction, and ultimately destination loyalty. Therefore, Smart Green Tourism Technology must prioritize user-centered technology design [15]. Systems must be intuitive, accessible, and integrated. Smart

technology systems must be designed with user-friendly, attractive, simple, yet interactive interfaces.

Perceived usefulness does not directly mediate SGTT on satisfaction, but does so indirectly through perceived ease of use. SGTT implementation has not yet outlined the benefits of using smart technology for tourists. Tourists do not automatically perceive the usefulness of technology, especially if they do not understand the smart systems implemented by the tourist destination [6]. Therefore, tourist destinations must improve communication to raise awareness among tourists about the benefits of smart green tourism technology.

5 Conclusion and Recommendation

This study analyzes the influence of Smart Green Tourism Technology (SGTT) used by tourist destinations on tourist loyalty to the destination through perceived ease of use, perceived usefulness, and satisfaction. The results show that smart green tourism technology influences tourist loyalty to the destination through perceived ease of use, perceived usefulness, and satisfaction. The results reveal that Smart Green Tourism Technology increases tourist perceived ease of use but does not affect tourist perceived usefulness. Perceived ease of use and perceived usefulness increase tourist satisfaction. High tourist satisfaction increases destination loyalty. Tourist satisfaction mediates perceived ease of use and perceived usefulness towards destination loyalty. Perceived ease of use mediates smart green tourism technology towards tourist satisfaction which ultimately increases destination loyalty. Perceived usefulness mediates perceived ease of use towards tourist satisfaction which ultimately increases destination loyalty but does not mediate smart green tourism technology towards tourist satisfaction. There are two main pathways of influence of Smart Green Tourism Technology in influencing destination loyalty. First, SGTT influences destination loyalty through perceived ease of use and consumer satisfaction. Second, SGTT influences destination loyalty through perceived ease of use, perceived usefulness, and tourist satisfaction.

Tourism destination managers should implement smart, easy-to-use green tourism technology that can boost tourists' perceptions of usefulness and satisfaction, which will ultimately increase destination loyalty. Implementation of smart green tourism technology to increase destination loyalty should be directed at the emergence of perceptions of ease of use that can raise perceptions of usefulness and satisfaction of tourists, which will ultimately increase destination loyalty. Further research is needed, which can be conducted by expanding the model to include additional variables such as destination image, environmental awareness, or the quality of the tourist experience, as well as examining the tourism context of different scopes and cultural backgrounds.

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