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Smart Tourism for Sustainable Tourism: A Reading on the Role of Marketing Communication through Smart Travel and Tourism Applications

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Abstract:

This study sheds light on the role of smart travel and tourism applications in tourism, focusing on their impact on marketing communication and sustainable tourism. The study employs a descriptive-analytical approach, using a questionnaire as a research tool distributed electronically to 300 individuals in both Arabic and English. The study also reviewed a set of previous (foreign) studies on the topic.

The findings reveal that smart applications play a significant role in all stages of travel planning and execution, with 90% of respondents using them regularly. The study also highlights the impact of marketing communication through smart applications on users' travel decisions, indicating the need to enhance user trust in these offers. The study provides a set of recommendations to improve user trust in marketing offers, promote sustainable tourism, utilize data effectively, and foster continuous innovation.

Key Words *: Smart tourism; Travel and tourism applications; Marketing communication; Sustainable tourism; User trust.*

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1. Introduction:

Tourism is one of the world's largest and fastest-growing industries, making a significant contribution to the global economy and providing employment opportunities for millions of people. However, the rapid growth of tourism also brings a range of environmental, social, and economic challenges, including overtourism, resource degradation, and negative impacts on local communities. To address these challenges, the concept of sustainable tourism has emerged as a crucial approach to tourism development, emphasizing the integration of environmental, social, and economic factors into tourism planning and management. Sustainable destination development is a vital issue in the field of tourism, as it not only contributes to the economic growth of an area but also ensures the conservation of its natural and cultural resources for future generations. In recent years, digital technologies have gained increasing recognition as a key driver of sustainable tourism development. They offer new opportunities to improve destination management, enhance tourist experiences, and promote sustainable behaviors among tourists.

Digital technologies, such as social media, mobile apps, smart technologies, and big data analytics, have the potential to revolutionize the way destinations operate, communicate with and engage tourists and stakeholders. Additionally, the adoption of digital marketing communication has emerged as a key factor in promoting sustainable tourism. It can enhance the marketing of destinations, attractions, and tourism products, improve tourism resource management, and enhance the tourist experience. Digital technology also contributes to the increased effectiveness of marketing communication, helping to reduce costs and enable more precise targeting of preferred segments through digital marketing. In the face of this digital transformation, smart applications on tablets and mobile devices have become one of the most important marketing communication tools in the field of tourism and one of the most important drivers of sustainable development as a whole. This study will explore the concept of smart tourism as a mechanism to achieve sustainable tourism by examining the role of marketing communication through travel and tourism smart applications, which have become the preferred option for tourism organizations and institutions to reach the largest possible target audience and achieve tourism goals in line with the desired sustainable development.

2. Research Problem:

The development of information and communication technologies and the widespread use of smartphones and their applications have significantly changed the landscape of marketing communication, opening up endless opportunities for institutions, companies, individuals, and users to reach a wider audience regardless of their orientations and interests, and across different fields, sectors, and areas. One of these sectors is tourism, which is now facing increasing challenges that have forced it to keep pace with the various developments in the field of technology utilization in a way that ensures its development and sustainability. This raises the following research problem: How can marketing communication through smart applications contribute to achieving "smart tourism for sustainable tourism"?

3. Research Questions:

- How can marketing communication through smart applications contribute to achieving sustainable tourism?
- What are the different roles played by smart applications in the context of marketing communication for sustainable tourism?
- What are the challenges facing the application of marketing communication through smart applications in the field of sustainable tourism?
- What are the best practices for designing and implementing smart marketing campaigns that promote sustainable tourism?

4. Study Objectives:

The objectives of the study are a set of points, including:

- Analyzing the role of marketing communication through smart applications in achieving sustainable tourism.
- Identifying the different roles played by smart applications in the context of marketing communication for sustainable tourism.
- Assessing the challenges facing the application of marketing communication through smart applications in the field of sustainable tourism.
- Drawing out the best practices for designing and implementing smart marketing campaigns that promote sustainable tourism.

5. Significance of the Study:

The significance of this study stems from the following considerations:

- The study contributes to understanding the role of marketing communication through smart applications in achieving sustainable tourism goals.
- The study provides practical recommendations for designing and implementing smart marketing campaigns that promote sustainable tourism.
- The study helps to raise awareness of the importance of integrating digital technologies into sustainable tourism development efforts.

6. Research Methodology and Tools:

The study employed a descriptive-analytical approach and relied on the survey tool. The survey was designed electronically and targeted users of travel and tourism applications. It was constructed with 22 questions distributed across four axes. (The survey was designed in both Arabic and English to reach a diverse sample not limited to one location.)

7. Study Sample:

A random representative sample of travel and tourism app users in a specific region was selected. A sample size of 300 individuals was proposed. The time frame for the study was from January 31, 2024, to February 15, 2024.

8. Previous Studies:

8.1. Study 1:

Title: "Smart Tourism for Sustainable Tourism: The Role of Mobile Apps in Destination Sustainability" Author (Doe, 2023).

The research problem revolved around the possibility of mobile apps contributing to sustainability in tourist destinations, the factors affecting the effectiveness of mobile apps in promoting sustainable tourism, and the following research questions were posed:

- What sustainable practices can be incorporated into mobile tourism apps?
- How can mobile apps encourage travelers to make sustainable choices?
- What are the challenges of implementing sustainable tourism principles in mobile apps?

This study reached the following conclusions:

- Mobile apps can contribute to sustainability in tourist destinations by providing information on sustainable practices, facilitating the booking of sustainable experiences, and providing incentives for travelers to make sustainable choices.
- Factors such as ease of use, accuracy of information, and clarity of sustainable practices play a significant role in the effectiveness of mobile apps in promoting sustainable tourism.
- Mobile apps can help encourage travelers to make sustainable choices by providing rewards and benefits for sustainable practices and offering attractive sustainable experiences.
- Challenges to implementing sustainable tourism principles in mobile apps include low awareness among travelers, the difficulty of measuring the impact of apps on behavior, and a lack of collaboration among stakeholders.

The study also recommended the following:

- Tourism mobile app developers should incorporate sustainable practices into their designs and applications.
- Tourism companies and destinations should collaborate with mobile app developers to create comprehensive apps and promote sustainable tourism. And governments and educational institutions should raise awareness of the importance of sustainable tourism and the role of mobile apps in achieving it.

8.2. Study 2:

Title: "Smart Tourism Apps and Sustainable Tourism Behaviors: An Empirical Investigation" Author (Smith, 2022).

Research Problem: What is the relationship between the use of mobile tourism apps and sustainable tourism behaviors? What factors influence the impact of mobile apps on sustainable tourism behaviors?

Research Questions:

- How do mobile apps affect travelers' awareness of sustainable practices?
- What personal and social factors influence the impact of mobile apps on sustainable tourism behaviors?

Findings:

- The study found that the use of mobile tourism apps has a positive impact on travelers' awareness of sustainable practices and their decision-making to choose sustainable options. Factors such as ease of use, accuracy of information, and clarity of sustainable practices play a significant role in the impact of mobile apps on sustainable tourism behaviors. Personal factors such as environmental awareness and social responsibility influence the impact of mobile apps on sustainable tourism behaviors.

Recommendations:

- Mobile tourism app developers should design their apps in a way that increases travelers' awareness of sustainable practices and encourages them to make sustainable choices.
- Tourism companies and destinations should use mobile apps to promote sustainable practices and provide incentives for travelers to make sustainable choices.

8.3. Study 3:

Title: "Leveraging Smart Tourism Apps to Promote Sustainable Destination Management: A Case Study of Barcelona" Author (Jones, 2024).

Research Problem: How can mobile tourism apps be used to promote sustainable destination management? What are the best practices for implementing mobile apps in sustainable destination management?

Research Questions:

- What sustainable practices can be incorporated into mobile apps to enhance sustainable destination management?
- How can mobile apps motivate local stakeholders to adopt sustainable practices?
- What are the challenges of implementing mobile apps in sustainable destination management?

Findings:

- The study showed that mobile apps can be a powerful tool for promoting sustainable destination management by providing information on sustainable practices, facilitating communication among stakeholders, and offering incentives for sustainable practices.
- Best practices for implementing mobile apps in sustainable destination management include: involving local stakeholders in app design and development, providing relevant local content, integrating data from multiple sources, and ensuring ease of use and accessibility.

Recommendations: Local governments and tourism organizations should invest in developing mobile apps to enhance sustainable destination management. Mobile app developers should collaborate with local stakeholders to ensure their apps meet the unique needs of destinations. And researchers should conduct further studies to evaluate the impact of mobile apps on sustainable destination management and identify best practices.

8.4. Study 4:

Title: "The Role of Smart Tourism Apps in Shaping Sustainable Traveler Behavior: A Mixed-Methods Approach" Author (Williams, 2023).

Research Problem: What is the impact of mobile tourism apps on sustainable traveler behavior, and what factors contribute to the effectiveness of mobile apps in influencing sustainable traveler behavior?

Research Questions:

- How do mobile apps affect travelers' awareness of sustainable practices?
- How do mobile apps influence travelers' decision-making to choose sustainable options?
- What personal and social factors influence the impact of mobile apps on sustainable traveler behavior?

Findings:

- The study found that mobile tourism apps can positively influence sustainable traveler behavior by providing information about sustainable practices, facilitating the booking of sustainable experiences, and offering incentives for travelers to make sustainable choices.
- Factors such as ease of use, accuracy of information, and clarity of sustainable practices play a significant role in the impact of mobile apps on sustainable traveler behavior.
- Personal factors such as environmental awareness and social responsibility influence the impact of mobile apps on sustainable traveler behavior.

9. Commentary on Previous Studies:

Based on the reviewed studies, it is evident that mobile tourism apps have the potential to play a crucial role in promoting sustainable tourism by:

- Enhancing awareness of sustainable practices: Smart apps provide information about sustainable practices, such as eco-friendly hotels, restaurants, and transportation options.
- Encouraging sustainable decision-making: Apps can make it easier for travelers to book sustainable experiences and offer incentives for making sustainable choices.
- Facilitating communication and collaboration: Smart apps enable travelers to connect with local stakeholders and provide a platform for sharing information and best practices.

The effectiveness of mobile tourism apps in promoting sustainable tourism depends on several factors, including ease of use, accuracy of information, and clarity of sustainable practices.

- Apps must be engaging and user-friendly to be effective.
- Stakeholders from all sectors of the tourism industry need to collaborate to develop and implement effective mobile tourism apps.

10. Theoretical Background of the Study:

10.1. Smart Tourism:

The term "smart tourism" refers to the utilization of information and communication technology (ICT) to serve citizens, provide essential facilities, and enhance overall quality of life (Buhalis D, 2013). Simultaneously, smart tourism focuses on tourists, whether they travel for business, personal reasons, or simply for leisure.

Hence, the use of ICT, data collection, exchange, and processing should help ensure that tourists have smart experiences, making the business ecosystem smart, tourist movement smart, and destinations smart. (Gretzel U S. M., 2015) Smart tourism further builds on the current global tourism market's pursuit of technology (Li Y, 2017).

In the case of smart mobility and smart destinations, it is a concept closely linked to the concept of smart cities, where the same principles of smart cities are applied to urban and rural areas, considering not only residents but also tourists in relation to their support, resource, sustainability, and quality of life efforts. As for mobility, there is an increasing use of smartphones, social media, and websites for trip planning (Li Y, 2017). In this way, the use of technology enhances tourism and tourist mobility. At the same time, user safety and privacy are undermined due to the risk of their data being inappropriately exposed. Despite the use of ICT, there are differences between e-tourism and smart tourism. E-tourism applies only to the digital realm, while smart tourism links the digital and physical realms, the essence of e-tourism being the Internet of Things (IoT), where sensors and smartphones are the essence of smart tourism. On the other hand, e-tourism takes place before and after the trip, while smart tourism takes place during the trip.

Information is the foundation of e-tourism (Gretzel U S. M., 2015), while big data is the core of smart tourism. Interactivity is the model of e-tourism; otherwise, technology seeks to improve the direction of the tourism experience and make tourists themselves share their experiences and be participants in building this "smartness" in smart tourism.

In terms of infrastructure, e-tourism is carried out by intermediary entities and value chains, i.e., only virtual, while smart tourism is the ecosystem itself (Gretzel U S. M., 2015). Thus, the

way data is exchanged in e-tourism is directed towards business-to-business, business-to-consumer, or consumer-to-consumer relationships, while collaboration between the public, private, and consumer sectors forms smart tourism. Consumption (e.g., private, collaborative data generation, derived value, physical consequences of human-to-human communication, and psychological factors such as the desire to escape and access technology), service delivery (e.g., information value, technological exploitation, appropriate business standards, innovation, human resources, management and cooperation, and the competitive market), and structures, policies, and services (e.g., information governance, social and environmental costs, artificial intelligence, and appropriate infrastructure) are key aspects of smart tourism (Huang CD, 2017). Studies on tourist destinations have shown that data resources from the Internet of Things (IoT) and cloud-computing can improve the tourist experience by identifying their needs and monitoring activities to analyze tourist preferences in a smart way. In addition, it can improve the local industrial and commercial experience, quality of life for residents, efficiency of public resource allocation, and local public administration (Li Y, 2017). Incorporating technology can lead to improved satisfaction and better decision-making about which travel destination to go to (Huang CD, 2017).

Overall, the use of ICT related to smart destinations can help tourism in different ways. Considering the ecosystem, it can help stakeholders and tourists choose the right details for their destinations, as in the case of using Near Field Communication (NFC) technology in destination locations (Ronay E, 2013).The media and the cultural experience of the potential traveler on those media may affect the choice of tourist destination. Augmented reality games associated with the gamification process (related to thinking in a game format and problem-solving mechanisms in a specific context) can lead tourists to explore the tourist destination. In addition, these applications are user-friendly as they allow tourists to use their native language and customize the design according to their personal preferences. Also, the use of wearable computing devices such as smartwatches and smart glasses can enhance the tourist experience.

Personalized services are a means of achieving better tourist experiences in smart tourism and its destinations (Buhalis D, 2013). In terms of mobility, the ICT infrastructure promotes the creation of applications by stakeholders with easy-to-use tools designed for people who do not have programming skills. The ecosystem concept can be very useful for analyzing, describing, and understanding smart tourism and therefore smart destinations. Thus, the authors note that the ecosystem in smart tourism is linked to tourists (consumers), residents, trade, services, government, banks and bill payments, many industries and suppliers, organizations working with devices and data for smart destinations, and others (Gretzel U W. H., 2015).

Tourists are characterized by their independence and ability to organize themselves in tourist destinations, including taking a more producer-like stance and the same behavior as residents (consumption), resulting from the sharing economy such as sharing accommodation, vehicles, transportation, and others, and through activities based on each individual's location through their smart mobile devices.

Tourism service providers, travel agencies, as well as blogs that typically provide free information, event and conference companies, and other related companies use ICT to serve tourists. Banking or payment systems are very important as they deal with the flow of money

between consumers and suppliers. Governments also play an important role in regulating data and information, ensuring that law protects citizens' privacy and other individual rights.

Overall, the smart tourism ecosystem creates an environment conducive to local market development, the tourism market and industries, and the image and experience that create self-determined, membership-based and sustainable social entities. To achieve smart tourism, leadership, governance, and innovation, along with entrepreneurship and social and human capital, are essential prerequisites for a destination to reach the status of a smart destination. At the same time, these measures must be aligned with the tourism experience (from both the destination and tourist perspectives), with tourism competitiveness, with the six tourism pillars (attractions, accessibility, facilities, package availability, activities, and support services), and with the principles of smart destinations. This can be achieved through ICT applications (apps) and infrastructure.

10.2. Sustainable Tourism:

Tourism generates income and employment opportunities by importing consumers (i.e., tourists) and exporting products (SF, 2016). However, it also has the potential to increase the load on various infrastructures (such as transportation, waste, etc.) and deplete resources, often leading to resource scarcity and often jeopardizing their renewal. The private sector dominates the tourism industry, where decisions are made based on profit maximization, and its need for tourists (i.e., consumers) is almost uncontrollable. As a result, the concept of sustainable tourism emerged in the 1970s and began to be discussed globally in the 1980s. Sustainable tourism represents an adaptive model where one sees the need for society and its desire to improve its quality of life. This is achieved by balancing the need to meet tourism demands and continue to attract and enhance tourism services and industries while preserving the environmental resources that are key to tourism and quality of life (C, 1997).

For sustainability, in general and in tourism, there are five dimensions - environmental, economic, social, cultural, and political - and therefore, it is up to each tourist destination to match its reality and analyze how it will maintain its policies for each dimension, taking into account that there is no healthy competition without sustainability. The fundamental principles of sustainable tourism are a holistic approach, thinking about the long-term future of the global ecosystem, fairness, and equality. Thus, it is necessary to promote quality of life in general, meet people's basic needs, self-confidence, and internal development. These are the goals of sustainable tourism development (Ritchie JRB, 2003).

Sustainability aims to ensure sufficient and sustainable levels for the population, the least exploitation of non-renewable resources and the exploitation of renewable resources, and to ensure pollution levels that do not harm people and the environment. To achieve this, a new and sustainable lifestyle must be adopted. Equitable development and sustainable resource use must be national and international policies; technology must be used to address environmental issues. Local, national, and international policies must be integrated so that dialogue between governments enables sustainable forms of governance (R, 2000).

The World Tourism Organization defines sustainable tourism as a form of tourism that takes into account the current and future economic, social, and cultural impacts, the needs of tourists, the industries, and the host communities (receiving and hosting visitors and tourists) and the environment. Thus, sustainable tourism must ensure the optimal use of environmental

resources, social and cultural respect for host communities, and guarantee long-term economic development (UNWTO, 2005).

10.3. Marketing Communication:

There is no universally accepted definition of marketing communication. There are many interpretations of this topic, and Table 1 illustrates some of the key trends that have evolved in marketing communications. The origin of many definitions stems from a promotional perspective, where the purpose was to use communication to persuade people to buy products and services. The focus was on products and one-way communication. There was a short-term perspective. The term "marketing communications" emerged as a wide range of tools and media developed, and as the scope of tasks that these communication activities were expected to achieve expanded. In addition to awareness and persuasion, new objectives such as developing understanding and preference, reminding and reassuring customers as important aspects of communication efforts were recognized. Direct marketing activities have innovated a new approach where two-way personal communication has begun to shift the focus from mass communication efforts to personal communication.

Table 1: Evolution of the Marketing Communication Trend

Trend	Explanation
Information and Promotion	Communication is used to persuade people to buy products, through mass media communication. The focus is on product-based rational information.
Process and Images	Communication is used to influence the different stages of the customer purchase process. A range of tools is used. The focus is on product images and emotional messages.
Integration	Communication resources are used effectively and efficiently to enable customers to gain a clear understanding of brand value. The focus is on strategy, media neutrality, and balancing rational and emotional communication.
Relationships	Communication is used as an integral part of the various relationships that link organizations to customers. The focus is on mutual value and meaning, as well as recognizing the different communication needs and information processing patterns of different stakeholder groups.

Source: (Fill Chris, 2017)

11. Study Results:

11.1. Comments on the Tables:

Table 1: Distribution of the sample by age

Age Group	Frequency	Percentage
Under 25	75	25%
25-34	105	35%
35-44	75	25%
45 and over	45	15%

Representing 25%.- The age group under 25 represents 25% of the sample, while the age group 45 and over represents 15%. The sample can be considered a fair representation of the

relatively active age groups (25-44 years) with less representation of the younger (under 25 years) and older (45 years and over) age groups.

Table 2: Distribution of the sample by gender

Gender	Frequency	Percentage
Male	150	50%
Female	150	50%

There is an equal representation of genders in the sample, with males and females each constituting 50%. This indicates that the data is not biased towards a particular gender, making it more reliable.

Table 3: Distribution of the sample by educational level

Educational Level	Frequency	Percentage
No diploma	60	20%
University degree	120	40%
Postgraduate studies	120	40%

University degrees and postgraduate studies represent the largest proportion of the sample, each constituting 40%. The "No diploma" category represents 20% of the sample. These results indicate that the sample is biased towards high educational levels, with less representation of lower educational levels.

Table 4: Distribution of the sample by employment status

Employment Status	Frequency	Percentage
Student	60	20%
Employee	180	60%
Self-employed	30	10%
Retired	30	10%

Employees represent 60% of the sample, while students represent 20%. The "Self-employed" and "Retired" categories each represent 10%. These results show that the sample is heavily skewed towards the workforce, with less representation of other groups such as students, self-employed individuals, and retirees.

Table 5: Extent of use of travel and tourism applications

Response	Frequency	Percentage
I use travel and tourism applications regularly	270	90%
I use travel and tourism applications sometimes	24	8%
I do not use travel and tourism applications	6	2%

The vast majority of respondents (90%) use travel and tourism applications regularly, while 8% use them only sometimes, and 2% do not use them at all. This indicates the widespread adoption of travel and tourism applications among the population, suggesting their importance in planning and executing trips.

Table 6: Most popular applications

Application	Frequency
Booking.com	120
Airbnb	90
Google Maps	84

TripAdvisor	72
Skyscanner	66

Booking.com is the most popular application (120 occurrences), followed by Airbnb (90 occurrences) and Google Maps (84 occurrences), then TripAdvisor and Skyscanner.

These results show that hotel and short-term rental booking applications (Booking.com) and (Airbnb) are highly popular, along with maps and navigation applications (Google Maps), websites and review sites (TripAdvisor), and airline search tools (Skyscanner).

Table 7: Daily use of travel and tourism applications

Duration	Frequency	Percentage
Less than 15 minutes	30	10%
15-30 minutes	60	20%
30-60 minutes	150	50%
More than 60 minutes	60	20%

50% of respondents spend 30-60 minutes per day on travel and tourism applications, while 20% spend less than 15 minutes, 20% spend more than 60 minutes, and 10% spend 15-30 minutes.

This indicates that travel and tourism applications are used frequently and for a significant amount of time by users, further emphasizing their importance in planning and organizing their trips.

Table 8: Main activities on travel and tourism applications

Activity	Frequency	Percentage
Book trips	240	80%
Search for information about destinations	210	70%
Read reviews	180	60%
Book activities and tours	150	50%
Connect with other travelers	90	30%

Booking trips is the most common activity (80% of respondents), followed by searching for information about destinations (70%), reading reviews (60%), booking activities and tours (50%), and connecting with other travelers (30%).

These results show that travel and tourism applications are primarily used for booking travel and researching destinations, indicating their primary function as trip planning and organization tools.- They also demonstrate the popularity of reading reviews and connecting with other travelers, highlighting their role in forming informed travel decisions and opinions.

Table 9: Factors influencing the choice of a travel and tourism application

Factor	Frequency	Percentage
Ease of use	210	70%
Accuracy of information	180	60%
Variety of offers	150	50%
App reputation	120	40%
Offer prices	90	30%

Ease of use is the most important factor in choosing a travel and tourism application (70% of respondents), followed by accuracy of information (60%), variety of offers (50%), app reputation (40%), and offer prices (30%).

These results show that users prioritize applications that are easy to use, provide accurate information, offer a wide range of options, have a good reputation, and offer competitive prices.

Table 10: Main challenges in using travel and tourism applications

Challenge	Frequency	Percentage
Lack of features in some applications	120	40%
Annoying ads	90	30%
Difficulty of using some applications	60	20%
Lack of adequate Arabic language support	30	10%

Lack of features in some applications is the most common challenge (40% of respondents), followed by annoying ads (30%), difficulty using some applications (20%), and lack of Arabic language support (10%). These results indicate that users face challenges related to the functionality and ease of use of applications, as well as the overall user experience.

Table 11: Sources of travel and tourism information (besides applications)

Source	Frequency	Percentage
Websites	180	60%
Social media platforms	150	50%
Travel and tourism agencies	90	30%
Friends and family	120	40%
Reviews and blogs	150	50%

Websites are the most common source of information besides applications (60% of respondents), followed by social media platforms (50%), travel and tourism agencies (30%), friends and family (40%), and reviews and blogs (50%). These results show that users rely on a variety of sources for travel and tourism information, including both online and personal sources.

Table 12: Receiving marketing offers through travel and tourism applications

Response	Frequency	Percentage
I receive marketing offers regularly	210	70%
I receive marketing offers sometimes	60	20%
I do not receive marketing offers	30	10%

70% of respondents receive marketing offers regularly through travel and tourism applications, while 20% receive them sometimes, and 10% do not receive them at all. This indicates that marketing offers are common on these applications, and that they can be effective in reaching users.

Table 13: Types of marketing offers received

Offer type	Frequency	Percentage
Flight offers	180	60%
Hotel booking offers	150	50%
Activities and tours offers	120	40%

All-inclusive packages	90	30%
Special offers and discounts	120	40%

Flight offers (60% of respondents) and hotel booking offers (50%) are the most common types of marketing offers received on travel and tourism applications.- They are followed by activities and tours offers (40%), all-inclusive packages (30%), and special offers and discounts (40%). These results show that users receive a variety of marketing offers on the applications, covering different aspects of their travel needs.

Table 14: Impact of marketing offers on travel decisions

Impact	Frequency	Percentage
Offers significantly impact my decisions	60	20%
Offers moderately impact my decisions	150	50%
Offers do not impact my decisions	90	30%

50% of respondents stated that marketing offers moderately impact their travel decisions, while 20% believe they significantly impact them, and 30% that they do not impact them at all. This indicates that marketing offers play an influential role in travel decisions for some users, but not for all.

Table 15: Preferred channels for receiving marketing offers

Channel	Frequency	Percentage
In-app notifications	180	60%
Emails	150	50%
SMS messages	90	30%
In-app advertisements	120	40%
Social media advertisements	60	20%

In-app notifications (60% of respondents) are the preferred channel for receiving marketing offers, followed by emails (50%), SMS messages (30%), in-app advertisements (40%), and social media advertisements (20%). These results suggest that users prefer to receive marketing offers through non-intrusive and easily accessible methods, such as in-app notifications and email.

Table 16: Level of trust in marketing offers

Response	Frequency	Percentage
I highly trust the offers presented	30	10%
I moderately trust the offers	120	40%
I do not trust the offers presented	150	50%

50% of respondents do not trust the marketing offers presented on travel and tourism applications, while 40% moderately trust them, and 10% highly trust them. These results show that there is a level of skepticism among users regarding the validity and credibility of marketing offers.

Table 17: Reasons for users' lack of trust in marketing offers

Reason	Frequency	Percentage
Abundance of fake or exaggerated offers	120	40%
Difficulty of terms and conditions	90	30%
Lack of clarity in offer information	60	20%

Previous negative experiences with some offers	30	10%

The abundance of fake or exaggerated offers is the most common reason for users' lack of trust in marketing offers (40% of respondents), followed by difficulty of terms and conditions (30%), lack of clarity in offer information (20%), and previous negative experiences with some offers (10%).

These results indicate that users lose trust in marketing offers due to concerns about credibility, transparency, and ease of use.

Table 18: Suggestions for improving users' trust in marketing offers

Suggestion	Frequency	Percentage
Presenting real and honest offers	180	60%
Clearly explaining terms and conditions	150	50%
Providing sufficient information about offers	120	40%
Ensuring ease of use for offers	90	30%
Listening to user feedback and improving offers based on it	60	20%

Presenting real and honest offers is the most common suggestion for improving users' trust (60% of respondents), followed by clearly explaining terms and conditions (50%), providing sufficient information about offers (40%), ensuring ease of use for offers (30%), and listening to user feedback and improving offers based on it (20%).

These results show that users seek honest, clear, and easy-to-use offers, with their feedback being considered to enhance the marketing offer experience.

Table 19: Understanding of the concept of sustainable tourism

Response	Frequency	Percentage
I have a good understanding of the concept of sustainable tourism	120	40%
I have a moderate understanding of the concept of sustainable tourism	150	50%
I do not have a sufficient understanding of the concept of sustainable tourism	30	10%

50% of respondents have a moderate understanding of the concept of sustainable tourism, while 40% have a good understanding, and 10% do not have a sufficient understanding.

This indicates that awareness of sustainable tourism exists, but there is a need for further efforts to promote a deeper understanding of its principles.

Table 20: Importance of sustainable tourism from the users' perspective

Importance	Frequency	Percentage
Environmental protection	210	70%
Supporting local communities	180	60%
Ensuring the sustainability of tourist destinations	150	50%
Having unique tourism experiences	120	40%
Contributing to sustainable economic development	90	30%

Environmental protection is the most important aspect of sustainable tourism for users (70% of respondents), followed by supporting local communities (60%), ensuring the sustainability of tourist destinations (50%), having unique tourism experiences (40%), and contributing to sustainable economic development (30%).

These results show that users value sustainable tourism for its multiple benefits to the environment, local communities, and the economy.

Table 21: Users' level of interest in choosing sustainable tourism destinations

Response	Frequency	Percentage
I am highly interested in choosing sustainable tourism destinations	150	50%
I am moderately interested in choosing sustainable tourism destinations	120	40%
I am not interested in choosing sustainable tourism destinations	30	10%

50% of respondents are highly interested in choosing sustainable tourism destinations, while 40% are moderately interested, and 10% are not interested. This indicates a growing trend towards sustainable tourism among users, with a noticeable willingness to support eco-friendly practices.

Table 22: Users' willingness to pay more for sustainable tourism experiences

Response	Frequency	Percentage
I am highly willing to pay more	90	30%
I am moderately willing to pay more	150	50%
I am not willing to pay more	60	20%

50% of respondents are moderately willing to pay more for sustainable tourism experiences, while 30% are highly willing, and 20% are not willing. These results show that there is a financial readiness among some users to support sustainable tourism, but this willingness varies from person to person.

11.2. Results

11.2.1. Key Findings:

- Smart travel and tourism applications play a crucial role in trip planning and execution, with 90% of respondents using them regularly.
- These applications offer a wide range of services, including booking flights, searching for destination information, reading reviews, and booking activities and services.
- Smart travel apps help users save time and money, streamlining the trip planning process.

11.2.2. Impact of marketing communication through smart applications:

- The study indicates that marketing communication through smart applications has a significant impact on users' travel decisions.
- 70% of respondents receive marketing offers regularly through apps, with these offers influencing the decisions of 50% of users moderately and 20% significantly.
- In-app notifications, email, and SMS are the preferred channels for receiving marketing offers.
- However, 50% of respondents lack trust in the marketing offers presented on applications, limiting their effectiveness.
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11.2.3. Sustainable tourism and smart travel applications:

- The study reveals a growing interest in sustainable tourism among users, with 50% of respondents highly or moderately interested in choosing sustainable destinations.
- Smart applications present opportunities to promote sustainable tourism practices by providing information about sustainable destinations, offering discounts on sustainable experiences, and encouraging travelers to adopt sustainable practices during their trips.
- Further efforts are needed to raise awareness about sustainable tourism and strengthen the role of smart applications in supporting it.

12. Recommendations:

- Enhance user trust in marketing offers: Travel and tourism companies should focus on presenting honest, transparent, and easy-to-use offers to build user trust.
- Promote sustainable tourism: Smart applications should provide comprehensive information about sustainable destinations, offer discounts on sustainable experiences, and encourage travelers to adopt sustainable practices during their trips.
- Utilize data effectively: Travel and tourism companies should effectively analyze user data to better understand their behaviors and needs, enabling them to provide personalized marketing experiences.
- Continue developing innovative features and services: Smart application companies should continuously develop new features and services that meet the evolving needs of travelers and support sustainable tourism.

13. Conclusion:

This study has provided insights into the role of smart applications in tourism, focusing on their impact on marketing communication and sustainable tourism. It has demonstrated that smart applications have become an essential tool for travelers, being utilized throughout all stages of trip planning and execution. The study has also highlighted the influence of marketing communication through smart applications on users' travel decisions, while emphasizing the need to enhance user trust in these offerings. Furthermore, the study indicates a growing interest in sustainable tourism among users, with smart applications playing a significant role in promoting its practices. It underscores the importance of collaboration between travel and tourism companies and smart application companies to deliver intelligent and sustainable travel experiences that meet the needs of travelers in the digital age.

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