



Literature Review: Implementation of Smart Tourism Applications in Indonesia Realizing the 2030 SDGs

Yura Vianisa¹, Dika Putri Febriyanti¹

¹State University of Surabaya, Surabaya, Indonesia
yura.21084@mhs.unesa.ac.id

Abstract. *The application of Smart Tourism as a travel agent is an innovative technology that specializes in meeting the wishes of travelers through combining ICT developments with tradition and innovation to promote and improve the best of tourism offerings, beautify tourism control, and amplify the industry's length. The authors gathered statistics using a literature evaluate, with the intention of supplementing this research with those facts. Several Indonesian localities, including Papua Tourism, SLAK Smart Tourism, Bedas Smart Tourism, Belitung Smart Tourism, Lunpia, Peka nbaru City Smart Tourism website, and MATIC (Malang District Tourism Intelligence Center), have developed and released smart tourism applications. Efforts to have smart tourism in achieving SDGs for the 8th goal "Equal Village Economic Growth" in Indonesia the results and discussion indicate that smart tourism for applications and websites that are already available in a number of Indonesian regions requires further optimization in the form of the addition of features in SDGs.*

Keywords: Smart Tourism, ICT Developments, Sustainable Development Goals (SDGs)

1 Introduction

The Indonesian government continues to invest in the tourism industry because this country has so much natural beauty that must be utilized to boost the economy and provide employment for those who live around tourist sites. Of all the other financial industries, tourism is one with the most promising growth. The tourism industry is the cornerstone of being the most crucial factor in regional development in a nation and enhancing community welfare [1]. This is happening as one of the positive side effects of the pandemic is accelerating the change in the paradigm of tourism development, from quantity tourism (quantity-based tourism) to quality and sustainable tourism (sustainable and quality-based tourism) according to objectives in 2019. This tourism

emphasizes the principle sustainable tourism that depends on what we offer to tourists according to future tourism trends, namely more personalized, customized, localized and smaller in size [2].

The tourism zone is one of the swiftly developing industries that, of path, preserve to change with cutting-edge tendencies. Smart tourism is the best step to survive in the rigors of technology and information development, where the physical and administrative aspects of tourism are taken to the next level follow (digitize) to achieve a new generation more modern in keeping with the times [3]. The travel and tourism sector creates jobs in the tourism sector and makes a sizable contribution to the global Gross Domestic Product (GDP) [4]. Smart tourism is the use of technology and information innovation to improve the experience of tourism by combining IT developments with local wisdom and culture from the existence of smart cities

Smart Tourism is a systematic and intensive transformation based on the integration of a new generation of Information and Communication Technology (ICT) which aims to meet the personal needs of tourists, improve the experience and satisfaction of tourists in traveling, to realize the effectiveness and optimality of tourism resources and social resources [5]. Also, the implementation of smart tourism facilitates this by creating an environment where travel providers can thrive and has been shown to trigger a positive user experience. Where smart is also a step for Quality tourism not only answers how good tourism quality standards can be realized and developed, but how quality tourism is able to integrate elements of tourism, such as attractiveness, accessibility, amenities, governance, activities, services, and security and health guarantees for tourists [6]. In addition, with the proper application of smart tourism, it will be possible to turn the region into a smart city. Smart cities use data and digital technology to improve quality of life, and an index has been developed to rank the best smart cities globally based on traffic, mobility, innovation, and standard of living [7].

Smart tourism is a tourism platform consisting of integrated technology, information, and communication. Define it as a tourism platform that integrates the role of ICT in providing efficient information and services for tourists. Innovative technologies, particularly information and communication technologies, enable significant improvements in the functionality of destinations while traveling [8]. It is imperative to incorporate contemporary technological solutions into existing infrastructure. Using new technologies and sustainable management, smart tourism aims to transform a destination into a tourist-friendly organism by transforming its destinations and visitors into efficient organisms.

2 Methods

A literature review is an examination of scholarly articles, books, and other sources of information related to a particular topic, area of research, or theory, and provides a description, summary, and critical assessment of that research [9]. A literature review

is a requirement for all research projects, but it is particularly important for academic projects with a strong theoretical and applied component. Each researcher performs a review of the available literature with the primary goal of establishing a foothold or foundation to obtain and compile theoretical foundations and conceptual frameworks as well as determine temporary conjectures, also known as research hypotheses, in order for researchers to organize, use, and classify various literature in their specific disciplines.

Researchers have a broader and deeper deepening of the problem to be studied by not making direct observations in the field. Involves a systematic examination of scientific papers, including books, journal articles, conference proceedings, and other relevant sources, to provide an overview of the state of knowledge on a particular topic. Research method is a way of collecting data scientifically that has a specific purpose and purpose. The author collects data using a literature study, where in collecting this research data, the author uses journal articles and books that have relevance to the research, and the use of the data aims to complement this study. So that by using these sources, the results of this study become more validated [10].

In the analysis, selection, comparison, merging, and sorting will be carried out so that relevant ones are found. The results of various literature and usage trials will be used to analyze the implementation of smart tourism applications, namely Papua Tourism, SIAK Smart Tourism, Bedas Smart Tourism, Pekanbaru smart tourism and MATIC (Malang Regency Tourism Intelligence Center) in order to optimally become a tourism agent to enhance resource management and sustainability, whilst increasing the businesses overall competitiveness in Indonesia.

3 Findings and Discussion

The Concept of Smart Tourism

A. Smart City

Smart cities are urban areas that use advanced technology and data analytics to improve quality of life, sustainability, and city services. They aim to become more efficient and effective while promoting economic growth and environmental sustainability. The goal is to manage and integrate city information. IBM specializes in building smart communities, which are divided into six categories: smart economy, smart mobility, smart governance, smart people, smart life, and smart environment. Smart cities can have a positive impact on government, social life, transportation, quality of life, and healthy competition [11]. Information and communication technology is essential for building a smart city, as it helps to provide tourists with cultural experiences and smart transportation. Additionally, green tourism and protection of the urban environment are also important factors in creating a smart tourist city.

B. Smart Tourism

Smart tourism is the ability to change situations and act based on different needs, needs, and past experiences. It focuses on the deep coherence and nature of the relationship between tourists and destinations in the context of tourism's role in economic growth and social development. Academics and entrepreneurs consider their contributions to sustainable development [12]. To achieve this, it understands the importance of enhancing the collective competitiveness of tourist destinations [13]. Smart tourism is a natural evolution with the use of the Internet as a sales tool becoming increasingly important due to the rapid dissemination of information. [14].

A smart tourism destination is a type of tourism destination that uses information and communication technology (ICT) to provide services for tourists. A smart destination has digital attractions, digital accessibility, digital facilities, digital travel packages, activities, etc., digital tourism, and digital support services. Also, your choice of travel destination can be affected by where you stay, what you eat, how you get around, what you do, special events, and festival [15].

C. Tourism in Indonesia

Indonesia is a country with a rich cultural and natural heritage, making it a popular destination for tourists from around the world. Tourism significant contributor to Indonesia's economy, generating foreign exchange earnings, creating jobs, and supporting local businesses. In 2019, Indonesia welcomed over 16 million international visitors, with tourism accounting for 4.3% of the country's GDP [16]. Indonesia ranked 32nd on the Travel and Tourism Development Index, jumping from 44th [17]. Indonesia's diverse cultural and natural heritage is a major draw for tourists.

Tourism is an important industry for many countries and regions because it can generate significant economic benefits through job creation. Tourism can also contribute to the protection of natural and cultural heritage and the development of local communities. Indonesia faces many challenges in developing its tourism industry, including inadequate infrastructure, limited access to finance, and related security issues.

D. Smart Tourism, Smart City in Aboard

This section refers to Seoul, the capital of South Korea. In Seoul, tourism is sometimes seen as one of many services that can be developed through smart city concepts, but is rarely seen as a core part of smart city development plans. Tourism professionals rarely include smart city projects in their development plans due to their high costs. According to recent research, smart destinations are using information and communication technology to accelerate tourism production. They use technology to create value, leisure and experiences for travelers. Intelligent interfaces for tourist destinations require local stakeholders to connect through centralized channels and platforms to

ensure community participation. Smart destinations allow travel agents and tourists to share valuable information.

The smart city model is based on technological infrastructure made to achieve urban sustainability and is seen as an evolution of other city models such as the creative city, digital city, information city, living cultural city, smart green or sustainable city, etc. High-speed Internet infrastructure is given in technologically advanced communities that use technology to address their social and economic needs directly and efficiently. Songdo International Business District in Seoul, South Korea is a brand-new city built from the ground up in accordance with "smart city" ideals. There are three main stages to Seoul's transformation into a smart city. The transportation, security, environmental, and cultural aspects of a city are all aided by the application of ICT in the first-layer service sub-layer. For example, the transportation sector tells people in real time how public transportation works, how the roads are, what repairs are being done, and more. The third level called the horizontal service level, is the development point for a smart city. Smart Seoul strikes a middle ground by prioritizing smarter city management that benefits both locals and tourists [18].

Implementation of Smart Tourism in Indonesia

The analysis application and website in Indonesia through search through the play store platform and internet search obtained the following applications:

1. Papua Tourism

Manifestation of the results of identification and inventory of cultural potential and tourist attractions located in 4 (four) of PON XX (Twenty) Papua clusters, namely



Jayapura City, Jayapura Regency, Mimika Regency and Merauke Regency, including 2 buffer areas of Biak Numfor Regency and Jayawijaya Regency. The purpose of launching the Papua Tourism Application is to introduce and promote all tourist attractions in the 4 PON XX Papua clusters, both natural tourism, cultural tourism and historical tourism and as E-Commerce Sales of Cultural Products online. The launch of the Papua Tourism Application is as reported through the official Instagram social media of the Ministry of Kraf. The appearance of this application is as follows:

Figure 1. Papua Tourism Home

User experience that the play store ratings from the content application still needs improvement because it is still lacking for accommodation of places of worship that have not been given to the "Explore" sub-feature. Also, the estimated travel budget

already exists but only in the form of writing, not a flexible range to be set according to user wishes.

2. *Lunpia*

Lunpia is an application launched by the Semarang City Culture and Tourism Office with the aim of making it easier for tourists to explore information related to tourism industry facilities and creative economy in Semarang City. This application can be downloaded on the google play store since July 25, 2020. In this Lunpia application there is information on tourist attractions, culinary, lodging, entertainment venues and souvenir centers. In addition, this application is also equipped with access for transportation to the desired place. Not only that, Lunpia has also collaborated with Angkasa Pura, Joglo Semar (transportation company), tourism and creative economy such as performing arts, photography and graphic design. In addition, this application also opens opportunities for tourism business people to promote their tourism business free of charge or free [19].



Figure 2. Lunpia App

3. *Bedas Smart Tourism*

The Bandung Regency Government launched an application called Bedas Smart Tourism as a means of tourism information for both tourist attractions and hotels in the region. The Bedas Smart Tourism application was launched by Bandung Regent Dadang Supriatna at the Dream Land Cicalengka Tourism Object, Thursday, May 6, 2021. Where the Bedas Smart Tourism application was built by the Bandung Regency Tourism Acceleration Team. The Bandung Culture and Tourism Office (Disbudpar) provides infrastructure support in creating smart tourism destinations through collaboration with various online services, such as online transportation (Grab) and online room services (RedDoorz) which aim to connect the tourism sector with consumers [20].

4. *SLAK Smart Tourism*

SLAK Smart Tourism App itself is a mobile-based application. This application is focused on the development of tourism in Siak Regency, Riau Province, Indonesia. The existence of this application is very useful because in it there are various information about tourist areas, culinary, city guides and others [21]

5. *MATIC (Malang Kabupaten Tourism Intelligence Center)*

There are development websites from regions in Indonesia in introducing their regions such as Malang. Matic itself stands for Malang Regency Tourism Intelligence Center. This site is a platform that provides information about smart tourism and big data in Malang Regency. As tourists, sites like matic.or.id can be very helpful in finding tourist destinations to the culture that we can see. In this site, Malang Regency tourism can be packaged concisely and still informative. For example, in the 'Culture' category, which displays various cultures in Malang Regency in various sub-districts.

There is also a 'Hospitality' category. In this category, tourists can try restaurants, cafes, and lodging offered in Malang Regency. For example, information about location, prices, operating hours, hospitality facilities, to social media that can be visited. The experience of using this tourism website in a more modern appearance is attractive, where access also does not experience problems and the categories for are also quite complete. But on this website, there is still no budget range for tourist rates.



Figure 3. MATIC website

6. Pekanbaru Smart Tourism

A smart tourism website service launched by the Pekanbaru City Government in the management of the Pekanbaru City Culture and Tourism Office, Riau Province. This website is based on Pekanbaru Mayor Regulation No. 62 of 2022 concerning Tourism Data and Information Systems for the SMART Tourism Application which was established on June 10, 2022 by the Mayor of Pekanbaru Muflihun. In this regulation, the existence of Pekanbaru Smart Tourism is in the context of managing the Pekanbaru City Tourism Application (Smart Tourism) also, capture the widest possible involvement of tourism institutions in the process of updating and promoting tourism, it is necessary to utilize online-based information technology (online).

The scope of Smart Tourism developed on this website is restaurants (culinary), destinations (tourist attractions), events and news (event and news calendars), accommodation (hotels and inns), finance (banking), markets (supermarkets), hospitals (health facilities), tour and travel (travel agency); and tourism (map). A direct observation on this website is that in terms of arrangement it is quite good and from the domain page it is clear that it is straight to the point, namely the page for smart tourism. The available services already have the appropriate icons. However, when heading to one of the services, namely Finance, the information displayed is still not available. So, in terms of data for banking it is still in the development stage by the team and in terms of usage it is still not ready for use by users.



Figure 4. Pekanbaru Smart Tourism Website

4 Conclusion

However, tourism can also have negative effects, such as environmental degradation, over-tourism and cultural goods. Therefore, sustainable tourism practices are increasingly encouraged to ensure that tourism activities are conducted responsibly and ethically. Overall, tourism is a complex and multifaceted industry with both positive and negative consequences. By adopting sustainable tourism practices and promoting responsible tourism, it is possible to maximize the benefits of tourism while minimizing its negative impacts. Goal 8 of the Sustainable Development Goals entails smart tourism in accordance with increasing inclusive and sustainable economic development, comprehensive and productive employment opportunities, and decent work for all. Results of the literature study on smart tourism applications it is very necessary to improve because none of these applications have become ideal to be categorized as smart tourism applications in helping as tourism agents for innovative use of technology. So smart tourism will be one of the important factors in advancing tourism that increases sustainable local economic growth in Indonesia. It is hoped that the government as a stakeholder, especially in the field of tourism, can pay more attention to the potential impact of smart tourism in Indonesia

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