Toward Sustainable and Inclusive Tourism Governance

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ABSTRACT

The rapid advancement of information technology (IT) has significantly influenced the tourism industry, a key contributor to national economic growth and equity. This study explores smart halal tourism as a strategic innovation to revitalize the tourism sector in the post-pandemic era, emphasizing the integration of IT into halal tourism. Using qualitative methods—observations, interviews, documentation, and literature review—data were analyzed through content and thematic approaches. Findings show that halal tourism, which emphasizes cleanliness, health, security, and spirituality, can grow more effectively with IT adoption. IT facilitates efficient destination management, improves access to information on halal services, and supports interactive engagement with tourists. The integration of IT enhances not only service delivery but also the competitiveness of halal destinations. The concept of smart halal tourism reflects the synergy between Islamic values and digital innovation. This study implies that IT is essential for building sustainable and inclusive halal tourism ecosystems. Policymakers and stakeholders should thus leverage technology to meet the needs of modern Muslim travelers and promote smart, ethical, and globally competitive tourism.

Kata Kunci:
*Pariwisata halal;
Pariwisata
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ABSTRAK

Pesatnya kemajuan teknologi informasi (TI) telah memengaruhi industri pariwisata secara signifikan, yang menjadi kontributor utama pertumbuhan dan pemerataan ekonomi nasional. Studi ini mengeksplorasi pariwisata halal cerdas sebagai inovasi strategis untuk merevitalisasi sektor pariwisata di era pascapandemi, dengan menekankan integrasi TI ke dalam pariwisata halal. Dengan menggunakan metode kualitatif—observasi, wawancara, dokumentasi, dan tinjauan pustaka—data dianalisis melalui pendekatan konten dan tematik. Temuan menunjukkan bahwa pariwisata halal, yang menekankan kebersihan, kesehatan, keamanan, dan spiritualitas, dapat tumbuh lebih efektif dengan adopsi TI. TI memfasilitasi manajemen destinasi yang efisien, meningkatkan akses ke informasi tentang layanan halal, dan mendukung keterlibatan interaktif dengan wisatawan. Integrasi TI tidak hanya meningkatkan pemberian layanan tetapi juga daya saing destinasi halal. Konsep pariwisata halal cerdas mencerminkan sinergi antara nilai-nilai Islam dan inovasi digital. Studi ini menyiratkan bahwa TI sangat penting untuk membangun ekosistem pariwisata halal yang berkelanjutan

dan inklusif. Oleh karena itu, para pembuat kebijakan dan pemangku kepentingan harus memanfaatkan teknologi untuk memenuhi kebutuhan wisatawan Muslim modern dan mempromosikan pariwisata yang cerdas, etis, dan berdaya saing global.

INTRODUCTION

Tourism plays a pivotal role in fostering economic growth, both at national and regional levels (Antara & Sumarniasih, 2017; Sowwam et al., 2018). Beyond its economic contributions, the tourism sector significantly impacts cultural preservation, political stability, and environmental sustainability (Jamal & Lee, 2003). As such, the development of tourism is essential and inevitable for sustainable progress. Moreover, the younger generation increasingly contributes to the tourism industry, both as active participants and as travelers, further enhancing its prospects (Veiga et al., 2017). However, the Covid-19 pandemic has introduced unprecedented challenges, reshaping travel behaviors and necessitating innovative solutions to ensure the sector's resilience and sustainability (Gallego, Font, & Gonz, 2022). These challenges demand collaborative efforts and intelligent strategies to revitalize the tourism industry while adapting to the evolving global landscape.

Every year, the number of tourists increases, both in the world and in Indonesia. This trend also applies to Muslim tourists around the globe (CrescentRating, 2020). This increase is due to the growth of the halal industry and the halal lifestyle of Muslims. Consequently, the tourism industry has bright prospects. The concept of halal tourism emerged as a way to meet the needs of Muslim tourists, ensuring they feel comfortable while fulfilling their obligations during travel. The needs of Muslim tourists when traveling are quite diverse, including: places of worship, halal food and drink, and the separation of male and female tourists (Halbase, 2020). Information regarding these needs must be obtained quickly; therefore, an effective tourism management pattern is needed. Efficiency for managers and effectiveness for tourists, or ideally both, can be achieved through collaboration between both parties. On several occasions and globally, the term "smart tourism" has become well-known. This concept has also been adopted by halal tourism. However, the reality often differs from expectations. In fact, tourism is growing quite rapidly. According to Lee, Hunter, & Chung (2020) that the concept of smart tourism is a manifestation of tourism development and transformation in the modern era.

Previous researchers have studied smart tourism using various approaches, theories, and research settings. Among the theoretical studies conducted by (Gretzel, Koo, Sigala, and Xiang, 2015), the Ham, Koo, and Chung studies (2020) were associated with IT's readiness to obtain competitive profits. Tourism studies related to tourist perceptions conducted by Corrêa & Gosling (2020) associated with destination experience (Wang, Xie, Huang, & Morrison, 2020), marketing (Sigalat-Signes, Calvo-Palomares, Roig-Merino, & García-Adán, 2020), application (Huang & Lau, 2020), city development (Lee

et al., 2020), sustainability of development (Rocha, 2020). There are also halal tourism studies associated with IT are still limited to be carried out, as conducted by Ferdiansyah, Endyana, Rachmat, & Khadijah (2020) and Cuesta-Valiño, Bolifa, & Núñez-Barriopedro (2020). Some areas in Indonesia that have and have the potential to become smart tourism are Bandung City (Utami, Sinaga, Desiria, Febriani, & Prayitno, 2020) and several cities in West Java Province (Agil, Rakhmad, & Hidayat, 2021).

So far, the study of halal tourism related to IT still needs to be studied, so its utilization does not seem optimal. The existing studies were conducted by Mahrnasari, Mahfujur Rahman, Bangsawan, and Mohd Shahril (2020) and Cuesta-Valiño et al. (2020). Studies and practices that exist, halal tourism is informed into pocketbooks, fliers, websites, brochures, or even social media. This is already good, but it does not look optimal to facilitate Muslim tourists. With this condition, tourists are poorly served because of the lack of integrated information. In addition to the development of IT and the global era, both must be established. If not, it is difficult for the manager to provide a quality tourist experience, satisfaction, and loyalty. For example, halal food tracking applications can be well received by tourists interested in using them (Sucipto, Effendi, & Affandi, 2019).

Readiness to use IT in tourism is the key to success in smart tourism management (Ham et al., 2020). If the development of halal tourism in this modern era does not use IT, it will lag behind other countries and become uncompetitive. By looking at the importance of IT in tourism, this paper reports on the potential of Semarang City in the use of IT in the development of halal tourism. The city of Semarang has used IT in tourism called "LUMPIA" but fully does not present information related to halal tourism. This city has the readiness to be developed into a halal tourism destination (Central Java Provincial Sports and Tourism Youth Office, 2019; Ferdiansyah, 2020; Ismanto, 2022). On the other hand, the city has received a number of tourism awards, both national and foreign, such as city awards with smart cities and the cleanest cities in Southeast Asia (Maarif, 2020; Semarang, 2020). This paper explores the role of information and communication technology (IT) in advancing halal tourism across regions in Indonesia.

METHOD

The study aims to address the limited literature on the intersection of halal tourism and IT utilization while contributing insights into the emerging concept of intelligent halal tourism. This research gathered data through a comprehensive review of books, journal articles, research reports, websites, and field observations in Semarang City. The researcher conducted interviews with parties with tourism authorities and visitors. In addition, the author observes several tourist attractions and IT used by the Tourism Office. The data were analysed using a content analysis approach. As Law, Leung, and Buhalis (2009) highlighted, IT integration in the tourism industry offers numerous

benefits, including cost reduction, enhanced operational efficiency, and improved tourist services. This study underscores the potential of IT as a transformative tool for advancing halal tourism, promoting economic growth, and inclusive, high-quality travel experiences.

RESULTS AND DISCUSSION

Halal Tourism in Indonesia: Concepts, Practices, and Developments

There are several terms related to tourism in Islam, including Sharia tourism, religious tourism, halal tourism, Islamic tourism (Preko, Mohammed, Gyepi-Garbrah, & Allaberganov, 2020), and *Muslim friendly tourism* (Countries, 2016). Nevertheless, in this paper used the term halal tourism as the equivalent of *halal tourism* as it has developed in the world (Carboni & Idrissi Janati, 2016; Vargas-Sánchez & Moral-Morals, 2019). Although with different terms, but have the same goal, namely the application of Islamic values in the field of tourism. Various definitions are conveyed by experts, including Halbase which states that halal tourism is a travel package offer that considers the needs of Muslim tourists (El-Gohary, 2016). Tourism governance that seeks to meet the needs of Muslim tourists (Carboni, Perelli, & Sistu, 2017). Ismanto (2022) defines halal tourism as a tourism governance that applies Islamic values in order to prosper the community.

Halal tourism has been practiced in several regions in Indonesia, including Aceh (Saputra, Presented, & Committee, 2021), Langsa City (I. Budiman, Kamal, & Tarlis, 2019) and Lombok NTB (Chotijah, 2017). There are also areas that are environmentally viable and worthy of halal tourism destinations are Pekalongan City, Semarang City, and Surakarta City (Ismanto, 2022), Banjarmasin (M. A. Budiman, Sadewa, Handayani, Nurzaman, & Hastiadi, 2019), Cirebon Regency (Ropiah, 2018), and Cirebon City (Jaelani, Setyawan, & Hasyim, 2017) . So, many regions have the readiness to organize halal tourism.

The Indonesian government, through the Ministry of Tourism, has developed a comprehensive halal tourism strategy, which includes recognizing regions excelling in halal tourism (CrescentRating, 2019) and supporting the certification of halal products as a key element of halal tourism (Wibowo, 2020). Additionally, the government has introduced a halal tourism logo and an international halal tourism certification logo, further promoting the sector's global recognition. The government has also published guidelines on halal tourism, demonstrating its commitment to advancing the development of halal tourism on the international stage.

Smart tourism development is usually developed from the concept of smart cities that have been owned by the region. Smart city is a city planning concept by utilizing technological developments that will make life easier and healthier with a high level of efficiency and effectiveness. Elements of smart cities are smart governance, smart

technology, smart infrastructure, smart healthcare, smart mobility, smart building, smart energy, and smart citizen. The goal of implementing smart cities is to create livable, developed and modern urban planning and development, increase regional productivity and economic competitiveness and build the foundation of a smart nation (Hasibuan & Sulaiman, 2019).

Semarang City is a notable example of a region utilizing information technology (IT) in tourism management. As a pioneer in implementing smart city principles, Semarang has demonstrated commendable progress, even surpassing basic benchmarks of smart tourism (Sanjaya, 2017). The Department of Culture and Tourism has developed the "LUMPIA" application, accessible via the Play Store, which provides diverse information about the city, including its tourist attractions, education, and culinary offerings. Pekalongan City also shows potential readiness for smart city implementation (Mujiyono, Angkasa, & Rismawati, 2016). However, despite advancements in IT, many regions have yet to fully leverage its capabilities in tourism management. Optimizing IT usage remains an essential step for enhancing tourism services and competitiveness, underscoring the need for broader adoption and strategic development of smart tourism practices across Indonesia.

The advancement of Information and Communication Technology (ICT) has given rise to e-tourism, revolutionizing the tourism sector. ICT encompasses hardware, software, and user interfaces that facilitate the acquisition, transmission, processing, storage, and organization of data into meaningful information. Common ICT tools include the internet, email, and smartphones, which have become indispensable for modern tourism. These technological advancements have enabled the development of tourism applications, enhancing the accessibility and efficiency of information delivery.

For instance, social media, a significant component of ICT, serves as a powerful marketing instrument for regional halal tourism. Mobile applications further streamline the dissemination of halal tourism information, making it more accessible and user-friendly. Examples of ICT-based innovations in Indonesia include the *Jombang Halal Smart City* application, which aligns with the Ministry of Tourism's vision for sustainable development (Anugrah, Santoso, & Budi, 2019), and a halal-certified food tracking app in Malang Regency (Nizar, 2014). These initiatives highlight the potential of ICT to transform halal tourism and support its integration into broader e-tourism frameworks.

E-Tourism is tourism management that utilizes the advancement of ICT, one of which is characterized by the merger of *E-commerce* and *Tourismn Information.* The use of ICT in the tourism industry has a number of advantages including: a) reducing human error; b) the work can be done quickly and precisely. For example, the presence of *e-commerce-based* travel applications, such as Traveloka, Pegi-pegi, Trivago, etc., can help tourists in preparing a travel agenda. In the application, tourists can get information related to hotel location, hotel room rental prices, accommodation availability, and more.

Likewise with the use of the internet, so that the government and a number of tourism drivers/communities can present tourism information quickly, such as on the Wonderful Indonesia website, Visit Jogja, Explore Jogja, Maindikota, Central Java, and others. Social media, is also no less important to take advantage of, such as facebook, twitter, instagram, tiktok, etc. In the context of halal tourism industry, there have been a number of groups or social communities that launched ICT-based halal tourism information, through facebook called "International Halal Tourism/Halal Trip/Muslim Traveler. Information-based website called "Halal Trip" has also been developed by Singapore-based Crescent Rating. Through various media, halal travel information is conveyed, such as through Instagram, Facebook, Twitter, Youtube, etc.

Developing halal tourism in Indonesia using the smart tourism concept offers several key advantages: a) Improved effectiveness and efficiency in tourism governance; b) Enhanced tourist satisfaction with destinations; c) Better time management for tourists, optimizing their travel experience. Examples of tourism applications that support these benefits include the *HalalTrip* app by MasterCard CrescentRating and the *Desa Wisata Nusantara* app by the Ministry of Village Development, both available for download on the Play Store. The *HalalTrip* app features useful tools such as prayer times, Qibla direction, and halal restaurant listings, while offering a variety of tourism categories, including education, culinary, religious, and cultural experiences. These applications enhance the accessibility and convenience of halal tourism, making it easier for Muslim travellers to plan and enjoy their trips.

In summary, the materials presented on smart tourism highlight several key factors that enhance the experience for Muslim tourists. These include: a) The accessibility of information on tourist attractions that meet the specific needs of Muslim travellers; b) The availability of safe and convenient access to halal maps and transformative tools; c) Easy access to information regarding amenities such as halal restaurants and worship facilities; d) Convenient access to halal tour packages tailored for Muslim tourists; e) Accessibility to environmental, security, and convenience-related information; and f) Information about community-based tourism, including village or tourist village initiatives. Together, these elements form a comprehensive framework for developing smart halal tourism that meets the unique needs of Muslim travellers while promoting sustainable and inclusive tourism practices.

The Implementation of Smart Halal Tourism in Semarang City

To provide an empirical perspective on the concept of smart halal tourism, this section explores the case of Semarang City, which serves as a notable example of integrating halal values and digital innovation within its tourism sector. According to Ismanto (2022), Semarang exhibits strong readiness for halal tourism implementation, supported by essential components such as tourist attractions, accessibility, amenities, communication infrastructure, environmental sustainability, supporting facilities, and community empowerment programs. Sanjaya (2017) further emphasizes that the application of smart tourism principles in Semarang has exceeded the fundamental criteria for a smart city.

The city of Semarang is one of the pioneers in implementing the smart tourism concept in Indonesia. As part of its smart city program, Semarang integrates information technology to enhance tourism services in an effective and efficient manner. The city has developed a digital application called LUMPIA (*Layanan Untuk Masyarakat dan Pariwisata* – Services for the Community and Tourism), which provides comprehensive information on tourist destinations, culinary experiences, cultural heritage, and public facilities, including services tailored for Muslim travelers. Recognized with both national and international accolades—such as being named the cleanest city in Southeast Asia and the city with the best digital innovation—Semarang demonstrates a high level of readiness to welcome tourists in the digital era. Smart tourism features such as digital maps, information on places of worship, halal food options, and local events contribute to a more personalized, safe, and inclusive travel experience. Supported by robust infrastructure, strong collaboration between the government and the community, and effective use of technology, Semarang serves as a model of a smart tourism city that promotes sustainable and Muslim-friendly tourism in the digital age.

A tangible manifestation of this integration is the development of the "LUMPIA" application, which delivers comprehensive information related to tourism destinations, culinary experiences, cultural events, and educational sites. This digital platform indirectly supports smart halal tourism by providing Muslim tourists with efficient and user-friendly access to relevant travel information. The utilization of such technology aligns with the Technology Acceptance Model (TAM) proposed by Davis (1989), where two key factors—*perceived usefulness* and *perceived ease of use*—drive users' willingness to adopt new technology. The LUMPIA app proves beneficial when it can deliver accurate, accessible, and contextually relevant information about halal facilities, thereby improving the user experience across diverse visitor demographics.

The city of Semarang continues to develop as a halal tourism destination by providing a variety of facilities that cater to the needs of Muslim travelers. The city offers a wide range of traditional culinary delights that have been halal-certified, such as *lumpia*, *tahu gimbal*, and *nasi ayam*. In addition, the ease of access to places of worship—such as

mosques located in the city center and tourist areas—and the availability of Muslim-friendly accommodations serve as unique attractions. The local government also promotes halal certification for culinary businesses and micro, small, and medium enterprises (MSMEs), while simultaneously developing religious tourism destinations such as the Central Java Grand Mosque (*Masjid Agung Jawa Tengah*), the Kauman cultural district, and the tombs of revered Islamic scholars (*wali*). These initiatives align with the national program for halal tourism development and position Semarang as a welcoming city for both domestic and international Muslim tourists.

In addition to TAM, the adoption of technological innovation in halal tourism development can also be examined through Rogers' Diffusion of Innovation Theory (2003). This theory suggests that the success of an innovation depends on the attributes of the innovation itself, the communication channels employed, and the social and cultural readiness of the adopters. Semarang's active engagement with digital innovation, exemplified by the LUMPIA platform, reflects a high level of institutional and societal preparedness to support the needs of Muslim travelers. However, the current application still lacks comprehensive integration of halal-related content, such as halal-certified accommodations, restaurants, and travel packages.

This limitation can be further analyzed through the Information Systems Success Model developed by DeLone and McLean (2003), which posits that the effectiveness of an information system is determined by system quality, information quality, and user satisfaction. In the case of Semarang, while the digital system is in place, the quality and depth of halal-specific information must be enhanced to meet the expectations of Muslim tourists and improve overall satisfaction.

Moreover, community involvement plays a pivotal role in strengthening the halal tourism ecosystem. According to the Unified Theory of Acceptance and Use of Technology (UTAUT), factors such as *social influence* and *facilitating conditions* significantly affect the acceptance and use of technology by various stakeholders, including local communities and halal-based micro, small, and medium enterprises (MSMEs). By encouraging grassroots participation and supporting local actors, the city of Semarang not only advances inclusive digital systems but also reinforces a culturally embedded halal tourism model. This collaborative approach is crucial for ensuring that the development of smart halal tourism remains sustainable, contextually relevant, and responsive to the needs of both visitors and residents.

CONCLUSION AND RECOMMENDATIONS

This study concludes that integrating smart tourism concepts into halal tourism development is essential, driven by the rapid advancement of ICT and its widespread application in various industries. Regions that have adopted smart city frameworks possess a foundational advantage for implementing smart tourism initiatives. Post-

pandemic, the synergy between halal tourism—emphasizing cleanliness, health, sustainability, and spiritual values—and smart tourism—promising accessibility and technological innovation—offers a transformative approach termed "smart halal tourism." This integrated model enhances regional tourism governance, leading to improved visitor satisfaction, loyalty, and an enriched experience for Muslim and non-Muslim tourists alike.

The findings provide a new perspective on regional tourism management by incorporating halal tourism principles. Clean, healthy, halal, and technology-driven tourism ensures inclusivity and respects diverse cultural and religious values. Future efforts should prioritize collaborative governance, leveraging technology to promote sustainable tourism practices that enhance the economic, cultural, and experiential value of destinations for all stakeholders.

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