ARTIFICIAL INTELLIGENCE APPROACH FOR SMART SHARIA TOURISM: A REVIEW

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ABSTRACT

The main purpose of this research is to increase the awareness of halal tourism developers on the factors that support the sustainability of this tourist area. Halal tourism is a dynamic and complex sustainable tourism that involves many stakeholders in practice. The large number of stakeholders involved can create conflicts and gaps that threaten tourism sustainability. So not only thinking about the application of the halal concept in tourism, halal tourism developers must also be able to manage the many factors involved in its implementation. And the negative impact that can arise due to the many factors involved can be minimized. This study uses secondary data derived from previous studies. This research also provides recommendations that have implications for practitioners.

Keywords: *Artificial Itelligence, Smart, Sharia Tourism; Halal Toursim, Toursim Recommendations*

1. INTRODUCTION

As cities increasingly embrace smart concepts, various fields within them are also following this path, one of which is tourism. Tourism is gradually becoming the world's first largest industry [1]. Tourism is also embracing smart concepts with a touch ICTs. In various sources, ICTs have been highlighted for their contribution to improving the tourist experience, providing benefits to the industry and having a positive effect on the quality of life of local people in tourist destinations [2]. ICT is the main component of any smart concept [3]. Smart tourism has a key element, namely the integration of ICT-based devices into the destination's physical infrastructure through technology infrastructure (ubiqui-mobile connectivity, sensors, IoT), user service platforms (applications, cloud computing), and big data analytics [4]. So it can be concluded that the use of technology is an obligation in optimizing the tourism industry and becomes an inseparable part when associated with the term Smart Tourism. This means that Smart Tourism can increase the competitiveness of destinations. Thus the concept of smart tourism does not only affect business but also becomes the hopes and needs of tourists, one of which is to be able to carry out worship while traveling or tourism with the concept of Sharia.

The concept of Sharia Tourism is a process of integrating Islamic values into all aspects of tourism activities [5]. This type of tourism includes many elements such as travel companies, hotels, tourism destination management, and tourists [6]. The purpose of developing sharia tourism is to provide services and spiritual satisfaction to tourists (in general) and Muslim tourists (in particular) [7]. The concept of Sharia has now become a global trend for people who have higher knowledge of the benefits of halal products starting from food, beverage, financial and lifestyle products such as places to travel with sharia concepts. This is supported by the increase in Indonesia's ranking in the First position based on the Global Muslim Travel Index (GMTI) research version in 2019 from the previous one in 2018 which was ranked 2nd in the Top 10 OIC Destinations indicating that there has been a significant change in the management of sharia/halal tourism. in Indonesia, which of course not only provides potential economic potential for Sharia tourism developing areas, this is also a great opportunity that makes it easier for the Indonesian state to continue to develop sharia tourism and the Sharia service industry considering that Sharia tourism is seen as a new way to develop Indonesian tourism that is uphold Islamic culture and values. So far, sharia tourism is perceived as a tour to the grave (pilgrimage) or to the mosque. In fact, sharia tourism is not defined that way, but activities that

are supported by various facilities and services provided by the community, businessmen, government, and local governments that meet sharia provisions or are in accordance with Islamic teachings. The development of the Sharia tourism concept will be easier with a touch of ICT in it as an impact of the current digitalization era or can be referred to as smart and intelligent Sharia tourism. The names smart and smart have the same meaning which is the widespread use of technological entities.

Many researchers have analyzed tourism developments involving artificial intelligence and smart technology in providing destination services and in measuring tourist satisfaction with tourism services involving artificial intelligence and smart technology.

Several studies on the concept of Sharia tourism, namely a study in 2018 concluded that from a comparison of the 20 Top Non-Organization of Islamic Cooperation (OIC) destinations in 2018 it showed that the countries whose ranking rose were visited were countries that had used online platforms in promoting their destinations. to the Muslim market segment and Countries that provide more Muslim-friendly digital services have been able to maintain their ranking position or have been able to increase their rankings [8]. Another study on Muslim-friendly tourism in 2019 stated that Halal quality in products and services is an important indicator that affects the perception, satisfaction, trust, and loyalty of Muslim tourists towards halal tourist destinations and conversely the low quality of halal for halal tourist destinations can have an impact on the quality of halal tourism. negative [9]. Subsequent research in 2019 which analyzed the readiness of tourist destinations through the perceptions of tourists and local communities in developing sharia tourism in Indonesia, research findings showed that all domestic tourists and local communities strongly support the implementation of Islamic Law in Tourism Areas [10]. However, sharia tourism facilities can also be enjoyed by non-Muslim tourists, because overall the core facilities in question only refer to sharia-labeled food and beverage facilities, sharia restaurants, and sharia hotels [11]. The entire sharia tourism sector has positive implications for increasing people's income and affecting the welfare of the community itself [12].

A study in 2020 on artificial intelligence and smart tourism development [13] mentioned that the application of artificial intelligence in smart tourism has many benefits. First of all, smart tourism creates new opportunities for employment and investment in an economic sense, as well as enables the development of secondary sectors such as: accommodation, transportation, industry and so on.

Another study on the involvement of artificial intelligence in supporting the concept of smart tourism in 2019 states that emerging technologies affect tourist destinations and cause new challenges to arise both in terms of consumer and environmental changes. The use of a destination's technology can enrich the tourist experience and enhance the destination, competitiveness and enable new distribution channels and create a business environment. To meet these challenges, destinations must first recognize the type of change that is occurring and proactively respond to change. Implementing technology tools such as digital accommodation, apps, smart transportation, virtual reality, IoT, and artificial intelligence [14].

Referring to the development which has been explained from related studies on sharia tourism, it is known that the research that has been carried out is still within the scope of tourist needs for Muslim-friendly tourism and can still be enjoyed by non-Muslim tourists, destination readiness in developing sharia tourism and the involvement of artificial intelligence and technology. Smart tourism can affect tourist destinations, and from the research it is known that halal tourism is a necessity and its implementation is strongly supported by tourists, both Muslim and non-Muslim and in traveling so that the involvement of artificial intelligence and technology in its implementation will certainly provide satisfaction for tourists. Taking into account what has been described previously, to achieve the expected thing, an artificial intelligence is needed in the form of a smart application that can assist in making policies in the development of sharia tourism which in its implementation involves many stakeholders so that conflicts between one aspect are very likely to occur. The conflict that arises will certainly be a complex problem because every aspect involved in the development of sharia tourism has a causal relationship between one and another.

2. MATERIALS

2.1 Artificial Intelligence

Artificial intelligence and machine learning are currently very popular in various fields. This has helped reduce the burden of human life and improve the quality and effectiveness of human life. Artificial intelligence cannot be separated from the world of tourism. In this field, artificial

intelligence is widely used, one of which is to support tourist location decisions, utilize artificial intelligence to carry out promotions, record tourist experiences by tourists and then the results will be processed with artificial intelligence as a tool in decision making and many others. The popularity of artificial intelligence has made many human activities integrated with artificial intelligence or it can be said that artificial intelligence has fulfilled the needs of modern society. Artificial intelligence is the result of the integration of computer technology and other disciplines or fundamentally artificial intelligence is an intelligent tool based on simulation of human intelligence, which replaces humans for complex work [15]. Artificial Intelligence-generated systems are computer systems that can perform operations that generally require human intelligence such as speech recognition, visual perception, decision making, and language translation [16].

2.2 Smart City

Smart cities have found increasing popularity over the last decade among public policy and academia. However, until now the smart city itself has various definitions, one of which is the definition of a smart city such as synergizing the term smart city with a broader concept of sustainability. Sustainable development, defines a smart city as one 'where investments in traditional infrastructure, social development and ICTs promote sustainable growth and a high quality of life [15]. Another study concluded that concluding that the Smart City (SC) is "an urban imaginary that combines the concept of a 'green city' with technological futurism and gives a name to the vision of a future technology-centered city [16]. Technological developments and digitalization have impacted most areas of social and economic organization by introducing smart concepts. This has improved the general quality of life, as well as improved economic performance [17]. In relation to the economy, smart city is used to describe a city with the concept of "smart" [18]. The term smart city has six different characteristics, namely [16]:

1. Smart economy: aspects linked to the spirit of innovation, entrepreneurship, labor market flexibility, integration between national markets and the ability to change.
2. Smart mobility: refers to local and supra-local accessibility, ICT availability, modern, sustainable, and safe transportation systems.
3. Smart governance: related to participation in decision-making processes, transparency of government systems, availability of public services and quality of political strategy.

4. Smart environment: understood in terms of the natural attractiveness of the environment, lack of pollution and the sustainability of being able to manage resources.
5. Smart living: involves quality of life, imagined and measured in terms of cultural and educational availability, services, tourist attractions, social cohesion, environment, healthy environment, personal and housing security.
6. Smart people: related to the level of quality of the qualification of human and social capital, flexibility, creativity, tolerance, cosmo-politanism and participation in public life.

2.3 Smart Tourism

Tourism is a travel activity carried out by a person or group of people by visiting certain places for recreational purposes, personal development, or learning the uniqueness of tourist attractions for a while. [19].

One of the biggest transformations tourism has ever faced has been the impact of ICT, which has completely reshaped not only the way entire industries and destinations operate [20] but also the travel experience itself [21]. Recent advances such as cloud computing, sensors and the widespread use of GPS, virtual and augmented reality and the use of social media and mobile technologies have driven the rise of intelligence in tourism [22]. The emergence of intelligence in the field of tourism is known as smart tourism. The characteristics of smart tourism, are closely related to each other, namely: technology, with particular attention to digital storytelling platforms as innovative information system processes and creative ways to enhance and democratize cultural offerings [23].

Four determinants of artificial intelligence in smart tourism [13], that is:

1. Economic Impact
   Starting with economic benefits, artificial intelligence's contribution to smart tourism can be measured by the extra economic value it creates as it enables technologies that support new types of collaboration and value creation leading to innovation, entrepreneurship and competitiveness. The intelligent transformation of tourist facilities ultimately increases their competitiveness in the tourism market as they facilitate accommodation, transportation and tourism-related services. This increase in tourism services has a direct reflection on tourism revenue by contributing to the benefits of stakeholders. NS The main goal of smart tourism is to achieve a new working

environment where the efficiency of the available service facilities increases and the cost of providing high-maintenance services decreases. Reliance on technological improvements with high efficiency over traditional practices contributes to the financial well-being of stakeholders as they require less use of energy, less natural or human resources. In short, there is a positive relationship between the use of artificial intelligence in tourism and the income received by tourism stakeholders.

2. Technology Impact

Furthermore, the use of artificial intelligence in intelligent tourism design can further enhance technological progress. At first, individuals can be biased towards the existence of artificial intelligence systems, such as robots. Despite the rapid development of technology, the time it takes for users to properly adapt to device technology takes time. This is because people have long been exposed to traditional services, and they are mostly looking for their human equivalent when they want to benefit from services. Compared with health services, the degree of such negative bias is small, but the initial response to artificial intelligence applications in tourism may be limited to some extent. In addition, artificial intelligence systems will become an integral part of life as humans become more and more exposed to these services. Smart tourism enables the design of facilities that can integrate further technological advances in the future. Besides that, technological improvement is subject to time so that technology develops exponentially from time to time. In other words, technological progress is accelerating to reproduce itself, as a phenomenon known as Moore's Law, named after the work of integrated circuits.

3. Social Impact

Third, advances in the application of artificial intelligence in smart tourism activities encourage the participation of disadvantaged groups in social life. For eg people with physical disabilities, elderly, pregnant women etc. may need special assistance for movement in facilities and smart tourism design facilities respond to these demands with intelligent solutions including use of robotics, mobile instruments, elevators, and so on. The main problem behind social exclusion is that individuals with disabilities do not have the means to access social life, and they are generally isolated without any social support. Introduction Artificial intelligence is therefore very important, as technology can replace the need for human labor to care for these disadvantaged people in order to maximize the well-being they derive from these leisure activities, and most importantly, provide them with the means to become part of society. Therefore, there is a positive relationship between the presence of artificial intelligence in smart tourism and the level of social inclusion for disadvantaged people.

4. Environmental Impact

The cloud-based infrastructure of "smart destinations" generally promotes the emergence of well-developed mobile tourism applications by tourism stakeholders with less dependence on natural resources. When information regarding tourist arrivals, accommodations, weather conditions at a destination, etc. can be conveyed using mobile devices and programs, physical energy that would otherwise be expended, will be saved. Reducing environmental burdens is also very relevant to transportation. Ride-sharing services like BlaBla Mobil or Uber provide an eco-friendly solution to congestion. Moreover, mobile applications that allow users to find and use bicycles nearby have become very popular in European cities as well as in many tourist destinations.

Smart Tourism, like Smart City, is a concept that has many definitions, and researchers approach it differently depending on their field and discipline; however, even if the boundaries may seem blurry at times, some of the characteristics that define the concept can be distinguished [24][25], that is:

1. Use of the Internet and network infrastructure to increase economic effectiveness and introduce policies that support social, cultural and urban growth.
2. Emphasize the creation of attractive business spaces that incorporate social needs in their services..It involves high-tech and creative industries.
3. Focus on relational and social capital in urban development.
4. Recognize sustainable development as a strategic aspect of Smart City development.Penggunaan Internet dan infrastruktur jaringan untuk meningkatkan efektivitas ekonomi dan

memperkenalkankebijakan yang mendukung pertumbuhan sosial, budaya dan perkotaan.

2.4 Smart Sharia Tourism

Sharia tourism by definition is an activity that is supported by the many facilities and services offered by the community, entrepreneurs, and local governments that comply with Islamic sharia. The facilities and services available are no different from other public facilities but do not conflict with Islamic values [26].

Guidelines and implementation of sharia-based tourism has been regulated by the government through the Fatwa of the National Sharia Council-Indonesian Ulema Council Number 108 of 2016, the Fatwa discusses all fields related to tourism including, various parties that play a role in tourism such as tourism processors, tourists, tourist destinations, tour guide, hotel, travel agency, spa, sauna and massage and others [27].

As explained earlier regarding the community's need for a Shariah lifestyle which provides greater opportunities for countries with a Muslim majority population. Based on the literature study, the concept of smart tourism needs to be linked in promoting tourist sites with the concept of Sharia, because this activity can spread Islamic teachings through life experiences, actions, attitudes and behavior to promote general welfare, as one of the goals of Shari'ah.

3.   LITERATURE REVIEW

The following are some studies that have been done previously related to Sharia tourism, the elaboration of previous research aims to find out the extent to which research related to Sharia tourism has been carried out and look for further research opportunities.

1. A study in 2020 that used a halal tourism concept approach, an invitation application approach, a sharia economic contextual approach explained that knowledge of the concepts and components of halal tourism is very important for industry players in developing halal tourism infrastructure and facilities, halal tour packages, and Halal tourism activities. This will also help them design specific messages for marketing communications to attract Muslim tourists, the results of the study conclude that the development of sharia tourism in the right way can present itself as a sharia tourist destination that does not turn off other tours and also becomes a vehicle of particular choice in Nusa West Southeast is considered successful in attracting foreign tourist visits, especially tourists from Muslim countries. and attract investment [28].

2. Another study in 2020 used quantitative descriptive research that revealed the location of the Little Seoul and Rabbit Town tourist areas, Bandung with a linear regression approach in describing the relationship between a dependent variable on two or more variables with the independent variable here is decision making consisting of promotion (X1), safety and comfort (X2) and service (X3) while the dependent variable is tourist interest (Y). The results of the study conclude that any changes in security, comfort and service will affect tourist interest in attractions and visitors to Little Seoul Bandung and Rabbit Town in the City of West Java Province. Service, security and comfort as well as promotions simultaneously affect interest in visiting sharia tourism in Little Seoul Bandung and Rabbit Town in Bandung [29].

3. Research in 2020 This research is an empirical juridical research, using qualitative descriptive analysis techniques. The results of this study indicate several points. First, sharia compliance in the halal tourism industry is a necessity, because sharia compliance is a characteristic of this industry that distinguishes it from the conventional tourism industry and will maintain the sustainability of this industry because the interests of Muslim consumers are maintained and protected. Second, the regulatory framework for halal tourism consists of Law Number 40 of 2007; DSN MUI Fatwa Number: 108/DSN-MUI/X/2016 concerning Guidelines for Tourism Implementation Based on Sharia Principles; and Regulation of the Minister of Tourism and Creative Economy No. 2 of 2014 concerning the Implementation of Sharia Business Hotels. However, the regulation is considered inadequate in regulating halal tourism. Third, optimization of sharia compliance in the halal tourism industry is carried out in three steps: first, strengthening substance by establishing regulations on halal tourism, second, strengthening structures and law enforcement officers, and third strengthening legal culture through socialization and strengthening public understanding of the importance of sharia compliance in halal tourism industry [19].

4. Research in 2019 stated that to accelerate the development of halal tourism in Indonesia, a halal tourism development model is needed. The model should involve as many Muslim

communities and Muslim community organizations as possible. As the majority population in Indonesia, Muslims are encouraged to become drivers of halal tourism [30].

5. Research in 2019 using the sharia description analysis method (comparing between reality and expectations) of sharia tourism potential was carried out through a survey of tourism managers on tourist visits to tourist sites, and local governments. The results of this study prove that the attitude of tourists to all indicators of Attractiveness, Hospitality, Accessibility, and Ancillary variables shows the real value is lower than the expected value. This shows the attitude of tourist dissatisfaction with the variables above. Based on these findings, the provision of sharia-based tourism facilities needs to be improved and improved in order to meet the wishes of tourists. It is hoped that by fulfilling the wishes of tourists, sharia-based tourist visits in Padang will increase. If this can be realized, it is hoped that it will be able to improve the economy of Padang City [31].

6. The research in 2021 with the method used is descriptive qualitative, with interview data collection techniques, observations, documentation, and literature studies stating that the sharia tourism development model in the province in the future depends on the destination. For example, pilgrimages, starting from food vendors, hotels, and infrastructure must be based on sharia, how the paths between men and women are separated, and tourism management. Destinations must be based on sharia or Islamic law [5].

7. Research in 2017 stated in the results of its discussion that strategic tourism development initially needed to focus on the availability of supporting infrastructure and increasing accessibility within tourism destinations. This includes identifying the core destinations for development and providing an adequate transport system. For sharia tourism, human resources must also be developed so that those who are responsible for providing services to sharia tourism customers have a deep understanding of the important aspects of sharia. This can be achieved by collaborating with local universities and other educational institutions that educate tourism operators and produce sharia travel guides. Equally important is the standardization of sharia tourism products, such as hotels, restaurants, spas, and travel agencies, the results of the study also

conclude that a long-term strategic development approach should be adopted that integrates all relevant stakeholders. Islamic teachings do not forbid traveling for a good cause. However, halal products and activities cannot be compromised because this is God's provision. The economic benefits that can be brought by sharia tourism destinations include increased employment and increased income for many Muslims in West Nusa Tenggara. Better relations and increased friendship among Muslims around the world will also be the expected result [32].

Based on previous studies that have been described, the purpose of this research is to find out how far the development of sharia tourism has been researched, what research results have been found and the extent to which the role of ICT is used in the tourism industry and the impact it has. And from these results, a conclusion can be drawn for future research that can be done regarding the development of sharia tourism.

4. RESEARCH AND METHODOLOGY

The purpose of this study is to determine the interrelationship of factors related to the sustainable development of sharia tourism based on an analysis of the current situation. This study adopts several exploratory case study methodologies. Such a methodology uses case studies to monitor contemporary events and behavior. This study uses secondary data derived from previous studies. The proposed methodological framework is summarized in figure 1.
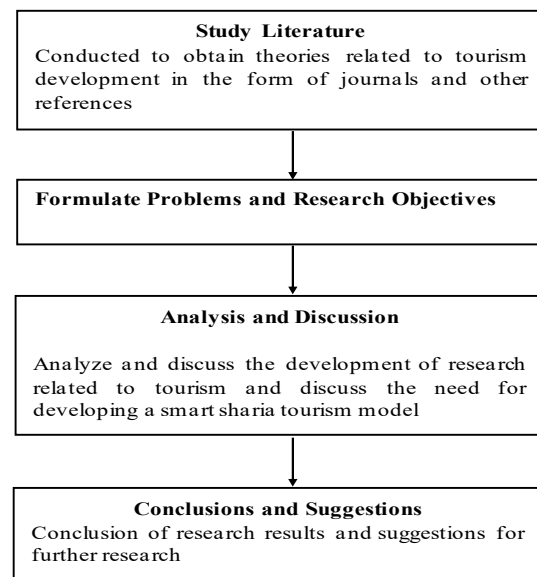
Study Literature
Conducted to obtain theories related to tourism development in the form of journals and other references

Formulate Problems and Research Objectives

Analysis and Discussion
Analyze and discuss the development of research related to tourism and discuss the need for developing a smart sharia tourism model

Conclusions and Suggestions
Conclusion of research results and suggestions for further research

Figure 1: Research Methodology

From the picture of the research methodology framework in Figure 1 above, it can be explained that the steps of the research carried out are:

-   The initial step in this research is a preliminary study/literature study by collecting data from both books and previous studies to obtain theories related to the development of sharia tourism.

-   After the data and theories regarding the development of sharia tourism have been collected, then the problem formulation will be carried out for the research to be carried out by setting the objectives of the expected research.

-   After formulating the problem and research objectives, the next step is to analyze and discuss the development of research related to the object of research, namely sharia tourism which has been carried out for the last few years to determine the extent to which research related to sharia tourism has been carried out .

-   And at the last stage after the analysis and discussion is to draw conclusions from the results of the analysis and discussion and provide suggestions for further research.

5. RESULT AND CONCLUSIONS

The high interest and support of Muslim tourists for the need for halal and Muslim-friendly tourist destinations both in international and local tourist destinations shows that halal tourism has its own popularity in tourism destinations. Not just walking around, halal tourism will provide a religious experience for tourists as a form of their appreciation for the greatness of Allah (God). The development of sharia tourism will certainly involve many stakeholders. The number of stakeholders involved in various fields such as government, social, environmental, cultural, community and so on in the development of sharia tourism certainly makes the problems that arise will be very complex. In order to minimize the problems that arise in its development, as an impact of the current digitalization era or can be referred to later as smart Sharia tourism. Sharia tourism is a highly dynamic and complex sustainable tourism, consisting of many interdependent components and involving various stakeholders, each of which has different management objectives which can lead to unexpected conflicts between stakeholders so that it takes coordination of the stakeholders involved in it in order to create a pleasant atmosphere and experience for visitors during their trip and create potential economic opportunities for stakeholders.

The involvement of supporting factors both directly and indirectly will have an impact on the implementation of sharia tourism, including business actors, the surrounding community, the environment, infrastructure, accommodation, transportation, services/facilities provided, government, budget, taxes, security, other accessibility. The number of factors involved with different management objectives but interdependence with one another certainly allows for gaps in tourism implementation. To minimize conflicts and negative impacts that can threaten the sustainability of tourist areas if they are not managed with the right decision support model. Future research is expected to be able to build a decision support model with a touch that is able to define the interdependence relationship between one factor and another appropriately so that the sustainability of the tourist area can continue, minimize conflicts that arise and create more potential economic opportunities.

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