

## Innovation Tourism Information System to Support Post-Covid-19 Health Protocols and Halal Tour in The Special Area of Yogyakarta

Arya Wirabhuana<sup>1</sup>, Izra Berakon<sup>2</sup>, Trio Yonathan Teja Kusuma<sup>3</sup>

<sup>1,3</sup> Industrial Engineering Study Program, UIN Sunan Kalijaga  
<sup>2</sup> Sharia Financial Management Study Program, UIN Sunan Kalijaga  
[arya.wirabhuana@uin-suka.ac.id](mailto:arya.wirabhuana@uin-suka.ac.id)

### Abstract

*Yogyakarta is one of the regions in Indonesia whose tourism sector has been affected by the Covid-19 pandemic. All tourism actors, especially on almost none of the MSME and informal sectors can escape the economic downturn due to the Covid-19 pandemic. They lost their income because tourist visits dropped by almost 100 percent. This is very worrying because it is known that Yogyakarta is one of the cities which is a tourist destination in Indonesia. The reopening of tourism objects after Covid-19 has become a momentum and turning point in promoting and developing the potential for halal tourism in DIY. The establishment of DIY as one of the National Priority Halal Destinations by the Ministry of Tourism in 2018 prompted the DIY government to encourage tourism actors such as restaurants and hotels to take part in halal certification from the Indonesian Ulema Council to ensure and increase consumer confidence in the halal tourism services provided. In general, the problems that are the object of discussion and are resolved within the scope of this research include identifying indicators that must be considered in developing tourism in DIY so that it complies with the Covid-19 Health protocol and the concept of Halal Tourism. In addition, it will also determine the characteristics of the Tourism Information System needed by Stakeholders in order to be able to support the implementation of the Covid-19 Health Protocol in the "New Normal" era and the implementation of Halal Tourism as a promising option. And finally in this research will also provide a proposal for a prototype / Information System Innovation that can be used and replicated by stakeholders in the Tourism sector, especially in DIY*

**Keywords :** Protocol Health, Covid-19 Pandemic, Halal Tourism, Tourism Information System

### INTRODUCTION

Covid-19 is an infectious disease caused by acute respiratory syndrome coronavirus 2 (severe acute respiratory syndrome coronavirus 2 or SARS-CoV-2). Covid-19 itself is a novel coronavirus discovered in Wuhan, Hubei, China in 2019 (Ilmiyah, 2020; Hui, et al., 2020). For this reason, this new coronavirus is named coronavirus disease-2019, abbreviated as Covid-19. Since then, it has been discovered that Covid-19 has spread widely leading to a global pandemic that has persisted to this day. The Pandemic global crisis that also occurred in Indonesia has spurred many efforts to overcome it. But this pandemic will not go away. Judging from the data collected by the Covid-19 Epidemic Acceleration Task Force, it is known that as of July 15, 2020, a total of 80,094 cases of COVID-19 infection in residences, with a rate of increase is 1522 cases per day. The outbreak of this pandemic has impacted almost every area of life, from the health sector to the economy. One of the industries affected by this pandemic is the tourism industry. This is evidenced by the sharp decrease in the number of foreign tourists coming here. On the other hand, the decrease in foreign tourists also has a supportive impact on tourism industries such as hotel occupancy and transportation. Based on data from the Central Statistics Office (BPS), the number of foreign visitors to Indonesia in April 2020 was only 160,040. This figure includes 755 international arrivals by air, 46,560 arrivals by sea and 112,730 by road. Compared to the number of foreign tourists in April 2019 was 1.27 million, the number of foreign tourists in April 2020 decreased by 87.44%. Meanwhile, compared to March 2020, the number of foreign tourists in April 2020 also decreased by 66.02%. Yogyakarta is one of the areas in Indonesia where the tourism industry has been affected by the Covid-19 pandemic. According to data from BPS DIY, in May 2020 DIY there were no foreign tourists to visit. Almost all tourism

businesses, from top to bottom, especially in the informal sector, have not been able to escape the economic downturn caused by the Covid-19 pandemic. Not only hotel and restaurant owners, thousands of cycle drivers, boat drivers as well as street vendors who live off of sightseeing have not received the same response as in the days before the 'translation'. They lose non-permanent income when tourist arrivals drop by nearly 100%. This is very worrying because it is known that Yogyakarta is one of the cities that are tourist destinations in Indonesia.

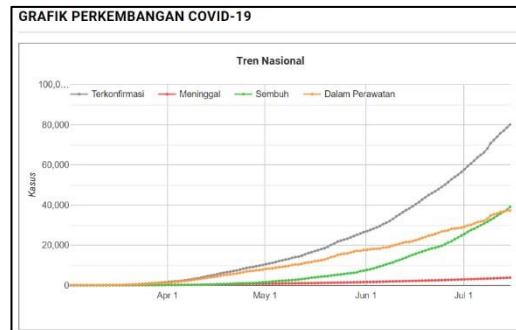


Figure 1. Graph of the development of Covid-19 in Indonesia (Source:www.kompas.com/Covid-19)

The reopening of tourist objects is the driving force and turning point in promoting and developing the potential of halal tourism in DIY. The existence of the new Yogyakarta International Airport is a manifestation of the DIY government's desire to mobilize the arrival of Muslim tourists from different countries of the world and from several parts of the country. The establishment of DIY by the Ministry of Tourism as one of the national priority halal destinations in 2018 (RI Cabinet Secretariat, 2019) has forced the DIY government to focus not only on building worship infrastructure but also standardize services according to Sharia principles. Furthermore, in 2018, it was recorded that halal tourism increased by 18% with the number of foreign Muslim tourists visiting priority halal tourist destinations reaching 2.8 million with foreign exchange earnings reaching IDR 40 trillion. The annual increase in the number of Muslim tourists has made Bank Indonesia more optimistic about the development of halal tourism in Indonesia. Furthermore, Indonesia is ranked as the number 1 tourist destination in the world according to the Global Islamic Tourism Index released by CrescentRating in 2019. Bank Indonesia also considers halal tourism as a new source of strength that can contribute to the economic future. .from Indonesia. The basic logic is that by increasing visits by foreign Muslim tourists, the government's foreign exchange reserves should increase in a linear fashion. The rupee's exchange rate will appreciate as the demand for the rupee increases. Moreover, this condition will continue to bring positive signals for domestic and foreign investors to invest capital along with the growth rate of the halal tourism industry in Indonesia. For this reason, measures are needed to revive the tourism industry, especially in the special Yogyakarta (DIY) region. Currently, the DIY provincial government has taken steps to open tourist attractions by designing health protocols. One of these health protocols is listed in the Yogyakarta Mayor's Regulations:51 2020. In this regulation, it specifies what hygiene procedures must be applied to tourist attractions that are open. However, the problem arises that tourists are still afraid to visit because they do not know whether the destination they are visiting has undergone medical procedures or not. Furthermore, as we all know, one of the changes in business model that occurred as a result of the Covid-19 pandemic was the shift of all economic activities to digital and internet. This is possible thanks to the very rapid development of information technology in recent decades, and the use of information technology applications or information systems in economic activities is believed to reduce risk of Covid-19 outbreak for the community. Likewise, in the process of "reviving" the tourism industry at DIY after the Covid-19 epidemic (the New normal). Proper implementation of the tourist information system is expected to make a significant contribution to the future growth of the DIY tourism industry and fuel the potential for the growing trend of halal tourism in the DIY sector.

One possible solution is to create a tourist information system (SIPar) can provide information to all tourism stakeholders on monitoring the implementation of health procedures for tourist attractions. This information system will explain what indicators have been completed by the tourism (tourist) industry in DIY in carrying out the post-Covid-19 medical process and also what indicates the suitability of these tourist objects with Halal tourism trends, so that tourists know and choose which tourist attractions to visit. In general, the problems that are the object of discussion and resolved within the scope of this research are:

1. What are the indicators that must be considered in developing tourism in DIY to comply with the Covid-19 Health protocol and the concept of Halal Tourism.
2. What are the characteristics of the Tourism Information System needed by Stakeholders in order to be able to support the implementation of the Covid-19 Health protocol in the "New Normal" era and the implementation of Halal Tourism as a promising option.

3. How to make prototypes / Information System Innovations that can be used and replicated by stakeholders in the Tourism sector, especially in DI Yogyakarta to provide an accurate explanation of the suitability of each tourist attraction against the post-Covid-19 Health Protocol and the concept of Halal Tourism.

The objectives to be achieved through this research include:

1. Identify the indicators that show compliance with post-Covid-19 health protocols for Tourism Objects in the Special Region of Yogyakarta.
2. Identify the indicators showing conformity with the concept of Halal Tourism for Tourism Objects in the Special Region of Yogyakarta.
3. Determine the Characteristics of Tourism Information Systems that are in accordance with the post-Covid-19 New-Normal concept and Halal Tourism.
4. Carry out innovation by building a tourism information system prototype that is ready to be implemented in the tourism sector in DIY.

## THEORY

### a. Tourism Growth

COVID-19 is an infectious disease caused by acute respiratory syndrome coronavirus 2 (severe acute respiratory syndrome coronavirus 2 or SARS-CoV-2). COVID-19 itself is a novel coronavirus discovered in Wuhan, Hubei, China in 2019 (Ilmiyah, 2020; Hui, et al., 2020). For this reason, this new coronavirus is known as coronavirus disease-2019, abbreviated as COVID-19. COVID-19 has since been found to be spreading.

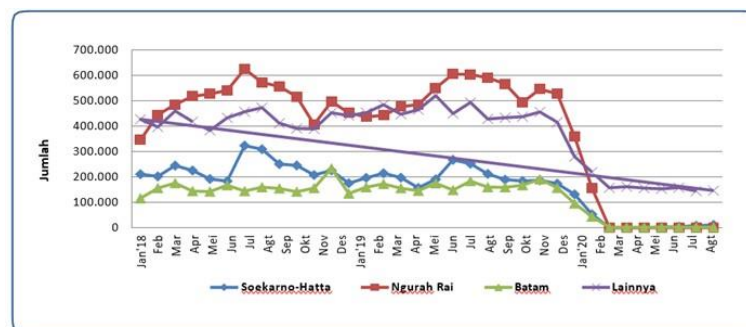


Figure 1. Development Foreign Tourists by Entrance Gate January 2018- October 2020 (Source: Central Bureau of Statistics, 2020)

COVID-19 is an infectious disease caused by acute respiratory syndrome coronavirus 2 (severe acute respiratory syndrome coronavirus 2 or SARS-CoV-2). COVID-19 itself is a novel coronavirus discovered in Wuhan, Hubei, China in 2019 (Ilmiyah, 2020; Hui, et al., 2020). Pandemic The global crisis that also occurred in Indonesia has spurred many efforts to overcome. The emergence of this pandemic has impacted all sectors, from health to the economy. One of the industries affected by this pandemic is the tourism industry. This is evidenced by the sharp decrease in the number of foreign tourists coming here. On the other hand, the decrease in foreign tourists also has a supportive impact on tourism industries such as hotel occupancy and transportation. Based on data from the Central Bureau of Statistics (BPS), the number of foreign tourists to Indonesia in October 2020 has decreased significantly by 88.25% compared to the number of visits in October 2019. However, compared to the previous month, September 2020, the current condition increased by 4.57%. Yogyakarta is one of the areas in Indonesia where the tourism industry has been affected by the Covid-19 pandemic. According to data from BPS DIY, in May 2020 DIY there were no foreign tourists to visit. All players in the tourism industry, from top to bottom, especially the informal sector, almost no one is immune to the economic downturn caused by the Covid-19 pandemic. Not only hotel and restaurant owners, thousands of cycle drivers, boat drivers as well as street vendors who live off of sightseeing have not received the same response as in the days before the 'translation'. They lose non-permanent income when tourist arrivals drop by nearly 100%. This is very worrying because it is known that Yogyakarta is one of the cities that are tourist destinations in Indonesia. However, if you look at its development, tourism has started to grow again. Data from the DIY Tourism Commission shows that tourist arrivals hit 180,000 during the weekend. (Tribun News, 2020).

This data shows that DIY tourism is improving. In 2021, it is estimated that tourism will increase due to the joint decree of the Minister of Education and Culture, the Minister of Religion, the Minister of Health and the Minister of the Interior, No. 04/KB/2020, no. 737 in 2020, HK No. .01.08/Menkes/7093/2020, and No. 420-3987 in 2020 on guiding the organization of learning in the 2020/2021 school year and the 2020/2021 school year during the virus epidemic period Corona 2019 (Covid -19) pandemic, stipulates that learning activities can be done in a hybrid way, namely offline and online. This will, of course, increase the number of visits as there are a lot of non-DIY students studying in

Yogyakarta. For this reason, this new coronavirus is named the disease Coronavirus-2019, abbreviated as COVID-19. COVID-19 has since been shown to be spreading.

The tourism sector will be visited by millennials who have lived in their homes for around 10 months. From data on the distribution of residents who travel on tours collected by the Central Bureau of Statistics (BPS), the millennial generation has the highest percentage of traveling on tours, namely 39.19% in 2019, consisting of the age group <15 years by 24.12% and 15-24 years of 15.07%.

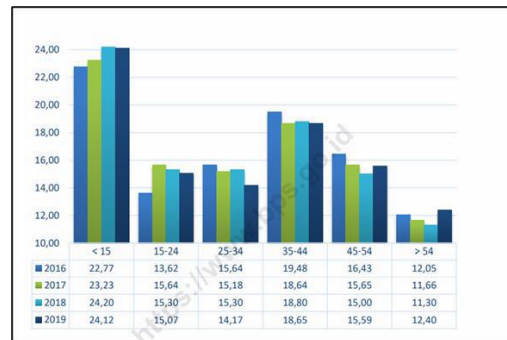


Figure 2. Spread Population Traveling by Age Group (Source: Central Bureau of Statistics, Archipelagic Tourist Statistics 2019)

The growth of tourism must be balanced with all kinds of new habits, both in terms of health and behaviour. For this reason, measures are needed to revive the tourism industry, especially in the special Yogyakarta (DIY) region. Currently, the DIY provincial government has taken steps to open tourist attractions by designing health protocols. One of these health protocols is listed in the Yogyakarta Mayor's Regulations:51 of 2020. In addition, the tourism industry must also begin to design tourist attractions that are safe and comfortable for tourists to visit. One of the convenience factors of a tourist destination is the availability of public facilities such as places of worship. There are still many tourist attractions that despise these establishments, even though it is known that Muslims are the majority in Indonesia. Therefore, action is needed to bring tourist attractions to Muslim reception. On the other hand, tourism is a tourist activity carried out by a person or a group of people by visiting certain places for the purpose of entertainment, personal development or studying the uniqueness of tourist attractions. (DTW) visited on a temporary basis. While tourist (tourist) is anyone who visits a place outside of their daily residence for a period of time motivated by one or more needs without any intention of earning an income. at destinations such as vacation, leisure and sports and business, visiting friends and family, business delegation, meetings, conferences, visits for health, study, religious reasons.

#### b. Halal Tourism Potential

Halal tourism is a new term and service innovation in the field of tourism to meet the needs of Muslim tourists. The word halal here is a direct acquisition of the Arabic word for permitted or permitted (El-Gohary, 2015). Halal tourism is a form of offering in the form of travel packages specially designed to meet the needs of Muslim tourists by eliminating unclean food, gambling, minimal alcohol and activities. other prohibited. Razali and. Al. (2012) pointed out that the basic factors of halal tourism that need to be considered include halal food, halal hotels, halal transportation, halal logistics, halal spa, halal tour package and demand for financial services itself. Therefore, halal tourism cannot be considered as a single entity but includes entities related to other halal products and services. In the current epidemic situation, it is extremely important to pay attention to the products and services that are consumed. Implementing a halal lifestyle is a wise choice to reduce the risk of contracting the Covid-19 virus as products and services bearing the halal label are very closely correlated or synonymous with cleanliness and health. This was confirmed by Huat (2009) and Samori et al. (2016) states that halal products include cleanliness, safety and quality throughout the supply chain. Implementing a halal lifestyle is a wise choice to reduce the risk of contracting the Covid-19 virus as products and services bearing the halal label are very closely correlated or synonymous with cleanliness and health. This was confirmed by Huat (2009) and Samori et al. (2016) states that halal products include cleanliness, safety and quality throughout the supply chain. Implementing a halal lifestyle is a wise choice to reduce the risk of contracting the Covid-19 virus as products and services bearing the halal label are very closely correlated or synonymous with cleanliness and health. This was confirmed by Huat (2009) and Samori et al. (2016) states that halal products include cleanliness, safety and quality throughout the supply chain.

Thomson Reuters, in conjunction with Dinar Standard, released the Global Islamic State Report which estimates "global travel spending" at \$238 billion in 2019, a 70% increase over tourism spending by Muslims. Muslims in 2013 were 140 billion USD. The forecast for "global travel spending" compared to total global spending in 2019 is estimated at 13%. This is an increase of 1.5% compared to the share of "global travel" and total global spending in

2013, which was recorded at only 11% (Battour, 2017, 4). The Pew Research Center has published a report on population growth projections based on religious groups (El-Gohary, 2015).

The report states that between 2015 and 2016, the growth of the world's Muslim population will surpass Christianity to become the world's largest religious group today. The Muslim population is expected to grow by 70% from 1.8 billion in 2015 and is expected to reach 3 billion by 2060. It should be noted that the Muslim population in 2015 accounted for about 24% of the total population. World numbers. Meanwhile, if you follow the results of the previous projections, in 2016 the Muslim population relative to the total world population will account for 31% or 1:3 out of the total world population. This report gives positive signs and signals to all countries around the world that cementing the Muslim consumer is an interesting and important aspect to consider. In other words, the existence of Muslims as the largest pool of candidates in the world is highly commercial and is considered as a potential target market according to global marketing that will target the needs and desires of Muslims, both goods and services.

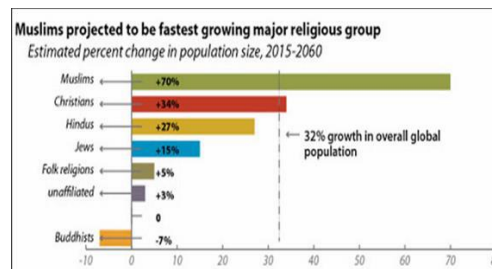


Figure 3. Muslims Projected to be Fastest Growing Major Religious Group Estimated Percent Change in Population Size (Source: Pew Research Center Demographic Projections)

As a segment of the global tourism market (Vargas-Sánchez and Moral-Moral, 2019), the level of interest and participation of Muslim tourists in the development of halal tourism shows that halal tourism is one of the most important and potential niche markets. The advancement of the global tourism industry presents promising opportunities for both Muslim and non-Muslim countries (Boğan and Sarıışık, 2018). It is natural that Halal tourism is now one of the fastest growing and growing sectors of the global tourism industry, as a report from the World Halal Tourism Summit (2015) estimates that the potential of Halal tourism exceeds \$230 billion by 2020 (El -Gohary, 2015). As with other countries, the Indonesian government considers the development of halal tourism as a strategic area to promote economic growth and a key driver for the development of the halal industry in Indonesia (Bank of Indonesia, 2019). During the Halal Tourism Summit held in 2019, Bank Indonesia said that 140 million foreign tourists visited Indonesia and spent \$35 billion shopping or spending online in 2018. In addition, Bank Indonesia predicts that there will be an increase in the number of foreign Muslim visitors. 18 million visitors, an increase of about 13% in 2020. Indonesia is one of the most progressive countries and does not want to lose momentum in developing world-class halal tourism in the face of the growth of Muslim tourists, which Bank Indonesia predicts to reach 158 million by 2020 (Bank Indonesia, 2019). tourists and constantly improve services in the era of the Industrial Revolution 4.0. Mastercard-Concent Rating specifically categorizes 3 types of services according to the needs of Muslim tourists: a must-have service, a good service to have and a good service to have.

TOP 10 OIC DESTINATIONS					TOP 10 NON-OIC DESTINATIONS				
RANK	GMTI 2019 RANK	DESTINATION	SCORE	CHANGE	RANK	GMTI 2019 RANK	DESTINATION	SCORE	CHANGE
1	1	Malaysia	78	0	1	10	Singapore	65	0
2	1	Indonesia	76	1	2	18	Thailand	57	0
3	3	Turkey	75	1	3	25	United Kingdom	53	0
4	4	Saudi Arabia	72	1	3	25	Japan	53	1
5	5	United Arab Emirates	71	-3	3	25	Taiwan	53	2
6	6	Qatar	68	0	6	20	South Africa	52	1
7	7	Morocco	67	3	7	31	Hong Kong	51	-2
8	8	Bahrain	66	0	8	34	South Korea	48	5
8	8	Oman	66	1	9	36	France	46	0
10	10	Spain	65	1	9	36	Spain	46	3
					9	36	Philippines	46	5

Figure 4. Top 10 Destinations – GMTI 2019 Ranking Source: Mastercard – Crescent Rating

Finally, the Indonesian government's efforts paid off when global ratings agency Mastercard-Recent released the Global Islamic Tourism Index (GMTI) and confirmed that Indonesia is the most popular halal tourist destination world in 2019 (Mastercard and Crescent Rating, 2019). To determine the rating, Mastercard-Recent has an evaluation standard that refers to 4 main criteria: Access, Communication, Environment and Service (ACES). Among the four criteria, communication factor is the criterion that is undergoing a positive and clear change. The reason for this is that each communication capability indicator or sub-criteria includes ease of communication, digital presence, and increased reach compared to 2018 (Mastercard and Crescent Rating, 2018). This achievement cannot be separated from the advancement of technology and the development of information systems that constantly encourage and stimulate the



birth of digital applications to meet the needs. In other words, need to have represents primary needs which means they must be met, good to have represents secondary needs that are recommended to be provided and nice to have represents primary needs. three to complement and support the previous two needs. Needs are made to meet the needs of Muslims, including availability of halal food, facilities for worship, bathrooms with potable water, and security on arrival. On the other hand, good to have is designed to meet the needs of visitors for environmentally responsible services, services during Ramadan and tourism to experience the culture and heritage of the Muslim community. local church. Although Nice to have aims to create a range of services that provide a privatized place or resort to it and make sure it does not provide any services except products and services halal. Digital service transformation should be used as a form of technological adaptation and innovation in the marketing of halal tour packages in the new normal era. In addition, application developers must also ensure and promote all services provided to tourists in accordance with the standards of health procedures set by the government. During the month of Ramadan, tourists learn about the culture and heritage of the local Muslim community. Although Nice aims to create a range of services that provide a privatized place or resort to it and ensure that it does not provide services other than halal products and services. Digital service transformation should be used as a form of technological adaptation and innovation in the marketing of halal tour packages in the new normal era. In addition, application developers must also ensure and promote all services provided to tourists in accordance with the standards of health procedures set by the government. During the month of Ramadan, tourists learn about the culture and heritage of the local Muslim community. Although Nice to have aims to create a range of services that provide a privatized place or resort to it and make sure it does not provide any services except products and services halal. Digital service transformation should be used as a form of technological adaptation and innovation in the marketing of halal tour packages in the new normal era. In addition, application developers must also ensure and promote all services provided to tourists according to the standards of health procedures set by the government. Although Nice to have aims to create a range of services that provide a privatized place or resort to it and make sure it does not provide any services except products and services halal. Digital service transformation should be used as a form of technological adaptation and innovation in the marketing of halal tour packages in the new normal era. In addition, application developers must also ensure and promote all services provided to tourists in accordance with the standards of health procedures set by the government. Although Nice to have aims to create a range of services that provide a privatized place or resort to it and make sure it does not provide any services except products and services halal. Digital service transformation should be used as a form of technological adaptation and innovation in the marketing of halal tour packages in the new normal era. In addition, application developers must also ensure and promote all services provided to tourists in accordance with the standards of health procedures set by the government.

All Muslim travelers of all generations really need digital media and technology to enhance their travel experience. The presence of applications available on Smartphones is a preeminent platform to facilitate religious-based services according to the needs of Muslim tourists. In principle, Muslim tourists can pray while traveling or visiting tourist attractions according to Islamic teachings. There are 8 activities commonly performed by Muslim tourists when using digital platforms to support the halal lifestyle while traveling, which are: searching for halal travel packages, directions and prayer times, mosques, Muslim-friendly hotels, articles exploring the beauty of tourist sites, restaurants. Halals, performances or tourist attractions and some interesting things done by other tourists while visiting some tourist attractions. Interestingly, the use of digital apps to adhere to Sharia principles and habits with the Halal lifestyle is dominated by Millennials (24-37 years old) at 40% and Gen Z (under 24 years old) accounting for 20%. This is the production generation that is expected to make the largest contribution to global halal tourism, because their total percentage (Millennials and Generation Z) reaches 60% of the total number of generations available.

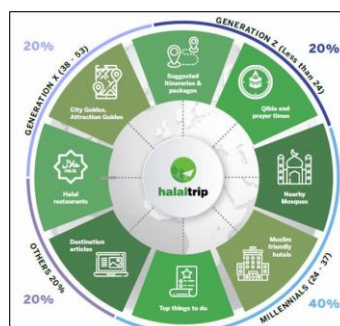


Figure 5. Halaltrip Generations Digital print Source: Mastercard-Crescent Rating

### c. Tourism Information System as a Solution

An information system is a collection of subsystems that interact with each other and form a unit, to perform data processing functions, including receiving input as data, processing, and producing output. as information useful to recipients / users and can aid in user decision making. An information system is a set of functions that work together to manage, store, process, and distribute information. Furthermore, a tourist information system is a system that

provides information about a tourist destination, a tourist area or trips within a tourist destination / area. This system also provides information to support tourism activities such as accommodation, transportation, tickets, hotels. The advantages of using the Internet in tourist information systems in general are ease of access, the ability to provide complete information to consumers, access to a large area of the world, and the potential to become essential data for travel planning. Post-Covid-19 and Halal Tourism, as well as mechanisms for contactless transactions and other economic activities. Therefore, one of the solutions that can be proposed to increase the competitiveness and recovery of small and medium enterprises in the tourism industry after Covid-19 is to implement a mobile digital marketing system. public access:

1. Information related to Tourism Travel (Objects and Transportation). As described in the previous section, that the main problem with partners is the aspect of access owned by prospective tourists to obtain information about tourist trips (including tourist attractions and transportation and accommodation) which are in accordance with the new health protocol, meeting the standards/criteria of the New Health Protocol after Covid-19 and in accordance with the concept of Halal Tourism.
2. Convenience transactions and other economic activities virtually or Contactless so as to minimize the risk of exposure to the Pandemic and in accordance with the Health protocol.
3. Information other valid documents related to tourism in the New Normal era. Even abroad. There are 5 standards arranged in stages and symbolized by a star. The more stars pinned on a particular tourist attraction indicates

#### **d. Tourism Object Standards and Readiness for the Covid-19 Pandemic Health Protocol**

From the results of observations, interviews, and group discussions that were conducted, several things were obtained regarding the standards and preparation of the travel subjects for the Covid-19 Pandemic Medical regimen. In defining guidelines for compiling halal tourism criteria, the researchers established specific standards that tour operators or organizers must meet to assist in creating tourism activities that are suitable for halal tourism. tailored to the needs of the Muslim tourists, local and national or destinations. increasingly meet the necessary criteria by predefined indicators or measuring instruments. The measurement tools used to define criteria for halal tourism are adopted and adjusted through articles published in reputable and responsible international journals (Battour, 2013; Eid, 2013). ; Eid and El-Gohary, 2014; Rodrigo and Turnbull, 2019).

## **RESULTS AND DISCUSSION**

### **Development Information Systems**

In this study, for the implementation of Tourism Object Readiness Standards in carrying out Health Protocol standards, Halal Tourism standards, Tourism Information Systems two Tourism Objects were taken, namely:

#### **1. Borobudur temple**

Borobudur Temple, which is located in Magelang, Central Java, is not only rich in historical value, but also has the charm of architectural beauty that is unique to the Buddhist temple style. The temple, which was founded during the reign of the Syailendra Dynasty in the Ancient Mataram Kingdom, is the largest Buddhist temple archaeological site in the world. The grandeur of the building with the unique architecture of the Borobudur Temple never fails to fascinate tourists. In a way, this Borobudur Temple is one of the tourist attractions that cannot be missed when visiting Magelang, Central Java. Inside Borobudur Temple, there are 2,672 panels. The relief ensemble is the most complete in the world and nothing can match its artistic value as every scene is a complete masterpiece. In addition, there are 504 Buddha statues. In 1991, United Nations Education,







#### **2. Indrayanti Beach**

Indrayanti Beach is one of the belle of tourism in Gunungkidul, DI Yogyakarta. Already the beach is beautiful, natural, suitable for releasing fatigue. Indrayanti Beach is a beautiful beach located in Tepus Village, Tepus District, Gunungkidul, Yogyakarta.




#### **a. Identification of Compliance with Halal Tourism Standards in Borobudur Temple Tourism Objects**

Borobudur Temple is one of the largest Buddhist temples in the world which was founded in the 9th century during the reign of the Syailendra dynasty from the Medang Kingdom. This UNESCO World Heritage Site will make you chuckle in awe of its majestic structure, detailed and ornate relief carvings, and 72 stupas, each containing a majestic statue of Buddha. While climbing the steps of the main temple which is shaped like a terraced pyramid, soak in the nuances of history and culture that envelop you.

Table 1. Identification of Compliance with Halal Tourism Standards at Borobudur Temple Tourism Objects

Classification of halal tourism criteria	Halal tourism indicators	Documentation
Places of worship facilities	Access to mosque/mushola available	
	Adhan or media to inform prayer times	
	There is qibla direction guidance	
	Clean water is available for wudhu and washing (urination and defecation)	
	There are facilities for prayer (al quran, mukena, prayer mat, sarong and peci)	
	Halal food and drinks available	
	No food and beverages containing alcohol	
	No sex and prostitution activities	







	No pornographic content in entertainment	
	Censoring adult programmes on television channels	
	No sexual or indecent acts in public places	




**Analysis**

After identifying the conformity between halal tourism standards and Borobudur Temple tourism objects directly, it can be concluded that Borobudur Temple is one of the halal tourism destinations or objects that has received 3 stars. In other words, Borobudur Temple has fulfilled 3 of the 5 standards that have been set.

**Identification of Compliance with Halal Tourism Standards at Indrayanti Beach Tourism Object**

Table 2. Identification of Compliance with Halal Tourism Standards at Indrayanti Beach Tourism Objects

Classification Of Suitability To Health Protocols	Health Protocol Indicators In The Covid-19 Pandemic Era	Documentation
Make sure all public areas are clean and safe from the spread of Covid-19	Cleaning using disinfectants at least 3 times a day, especially during times of heavy activity (morning, afternoon and evening) at every representative location (door handles, lift buttons, escalator handles, etc.)	
	Body temperature detection at each tourism spot entrance point	
	In culinary areas disinfect tables and chairs after guests leave	
	Apply social distancing through table and guest seating distances with appropriate markings	
Promotion of handwashing and socialising coughing/sneezing	Display posters about the importance of handwashing and the right way to wash hands	

etiquette in tourist attractions	Tourist destinations have access to handwashing with soap and water or hand sanitisers	
	Put hand sanitiser dispensers in strategic and accessible places in tourist destinations and ensure they are refilled frequently.	
	Display posters about the importance of coughing/sneezing etiquette and how to sneeze/cough in tourist destinations.	
	The manager of the tourist destination provides face masks and or tissues given to all visitors and passengers who have flu signs.	
Giving information about covid-19	The communication, information and education (iec) media on the prevention and control of covid-19 in strategic locations	
Collaborate with the nearest health facility	Update information about covid-19 frequently	
	Collaborating with local health centres to conduct rapid tests for covid-19 antigen at the site.	
Reorganise management to reduce physical contact	The ticketing system	
	Cashless payment system	
	Booking system in tourist destinations and hotels	
	Avoid guest handling of food by themselves at the buffet by suggesting to guests to be served at the table a la carte.	
	Restriction of visitors in accordance with the capacity of officers and the ratio of tourists compared to the land area (open and close system)	

### Analysis

After making observations to prove the conformity between halal tourism standards and Indrayanti Beach attractions directly, it was found that Indrayanti Beach is one of the halal tourist destinations or objects that is very popular with tourists to get experience, atmosphere and beautiful natural panoramas. But more importantly, Indrayanti Beach managed to get 4 stars which indicates that it has met 4 of the 5 standard criteria that have been set.

**b. Identification of Compliance with Health Protocol Standards in the Covid-19 Pandemic Era at Tourism Objects**

Destinations tourism as an icon of tourism in a region, plays a very important role in the advancement of tourism in a region. Tourism Destinations, according to Law No. 10 of 2009 are geographical areas that are within one or more administrative areas in which there are tourist attractions, public facilities, tourism facilities, accessibility, and communities that are interrelated and complement the realization of tourism which is included in tourist destinations. including tourist villages, natural and artificial tourist objects. During yesterday's vacuum period, it is hoped that tourist destination managers have prepared themselves for the opening of this tourist destination.

**c. Overview of Tourism Information System Technology**

Furthermore, the following is an overview of the technological characteristics of the developed Tourism Information System.

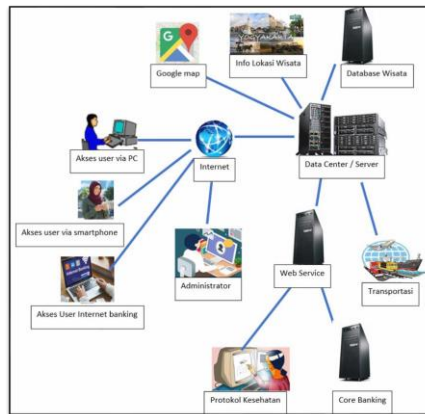


Figure 5. Architecture Tourism Information System

**d. Tourism Information System Prototype Display**

The following is the display result of the Tourism Information System Prototype that has been developed in this study:

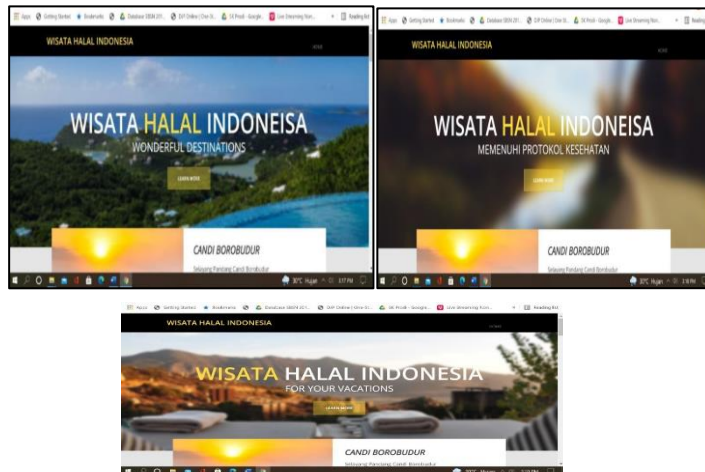


Figure 6. Tourism Information System Front Page

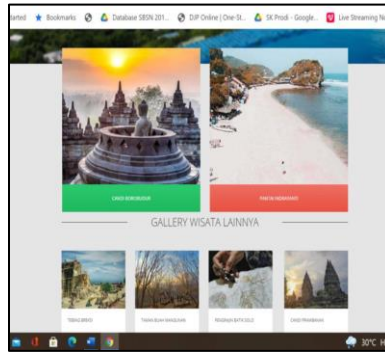


Figure 7. Gallery Tourist Attractions (Customisable)

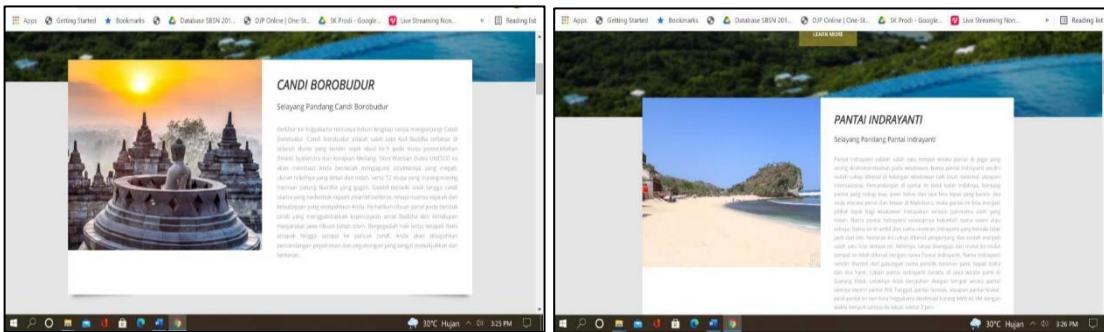


Figure 8. Selang View Tourist Attractions

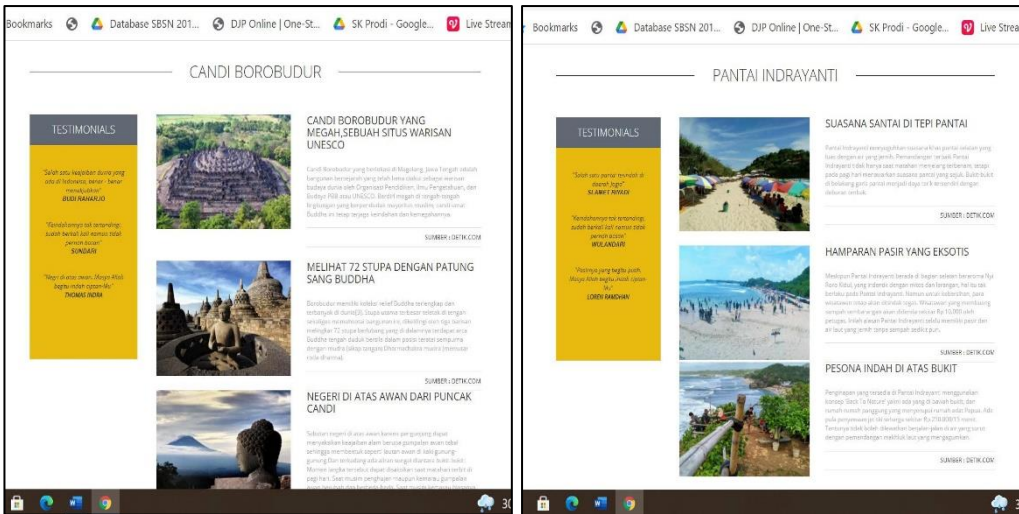


Figure 8. Profile Tourist Attractions and Testimonial Pages

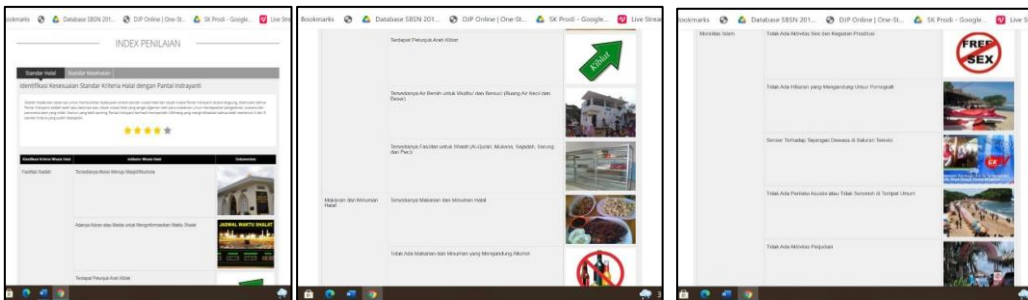


Figure 9. Compliance Index Assessment Page with Halal Tourism





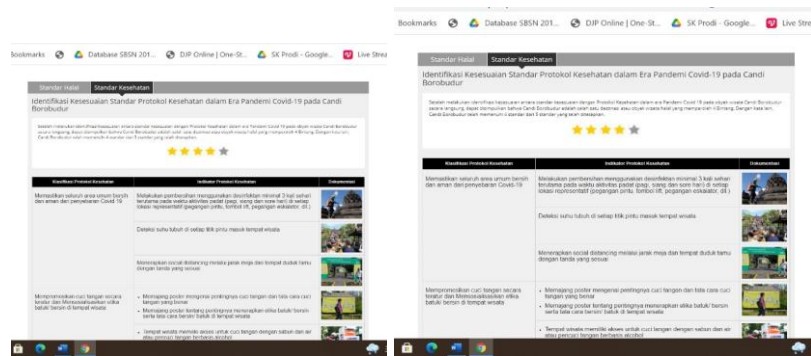


Figure 10. Information Compliance with the Covid-19 Pandemic Health Protocol Standards



Figure 11. Conclusion Conformity Index Assessment with Health Protocol Standards.

## CONCLUSION

After based on the data collection process, literature study and analysis based on interviews, observations, comparative studies, and Focus Group Discussions, complemented by the development of a Tourism Information System Prototype as an alternative solution to existing problems, the following conclusions and suggestions can be presented that can be stated from this research:

- 1) Health Protocol Standard Indicators in the Covid-19 Pandemic era for tourism objects, especially in the Special Region of Yogyakarta, in general can be formulated as listed in Table 5.3. that is :
  - a. Ensuring all public areas are clean and safe from the spread of Covid-19 which includes: touchless systems, temperature detection, provision of disinfection facilities, social distancing.
  - b. Promoting regular hand washing and socializing cough/sneeze etiquette at tourist spots.
  - c. Providing information and education about Covid-19.
  - d. Collaborating with the nearest health facility, especially related to emergency handling due to Covid-19
  - e. Rearrange procedures to avoid physical contact starting from cashless payment systems, online-ticketing systems, online reservation systems, limiting the number of visitors, and limiting direct contact with food / drinks in a presentation or banquet.
- 2) Halal tourism standard indicators can be formulated according to Table 4.3. as follows:
  - a. Availability of worship facilities: Places of Worship, adequate access, prayer time markers, qiblah directions, availability of clean water for ablution and purification, and availability of facilities for carrying out prayers.
  - b. Availability of Halal food and drinks and clearly not mixed with non-Halal food.
  - c. The application of Islamic moral ethical norms such as: no prostitution and other immoral acts, no gambling, etc.
  - d. There is no work of art that is not in accordance with Islamic norms.
  - e. Separate facilities and infrastructure for women and men.
- 3) Characteristics The Tourism Information System in accordance with the Halal Health and Tourism Protocol is formulated to have several elements according to Figure 5.2. namely: Map / Location Info, Tourism Object Database, User Access, Internet and mobile base, Mobile financing, WWW, Data Center, Web Service, Transportation, and access to information related to Health Protocol Standards and Halal Tourism Standards.
- 4) A Tourism Information System Prototype has been successfully developed that is suitable for supporting the Covid-19 Pandemic Era Health Protocol and Halal Tourism Standards as shown in Figure 5.2. up to Figure 5.8.

One of the problems in the current tourism sector is the aspect of access owned by prospective tourists to obtain information about tourist trips (including tourist attractions and transportation and accommodation) that are in accordance with the new post-Covid-19 health protocol and Halal Tourism, as well as mechanisms for conduct transactions and other economic activities in a contactless manner. Therefore, as a follow-up to the results of this research, a Mobile Digital Marketing-based Tourism Information System can be developed, which allows the public to



gain access to:

1. Information related to Tourism Travel (Objects and Their Transportation) that have met the standards/criteria of the post-Covid-19 New Health Protocol and are in accordance with the concept of Halal Tourism.
2. Convenience transactions and other economic activities virtually or Contactless so as to minimize the risk of exposure to the Pandemic and in accordance with the Health protocol.
3. Information other valid documents related to tourism in the New Normal era.

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