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Challenges in developing halal tourism, in Weh Island, Indonesia: Geomarketing analysis

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ABSTRACT

This research aims to investigate the halal tourism facilities in Weh Island using spatial analysis approach regarding the tourist convenience by distance from destination to supporting facilities. In-situ research conducted in August 2023 to observe the facilities condition and geolocation survey. Direct survey was important because there is no previous research related halal tourism implemented geospatial to analyze tourism marketing perspective. There are five halal tourism supporting facilities and accessibility under observation, they are: accommodation, road, restroom, restaurant, and praying room. Mostly, the facilities are provided in destination area by local authorities and/or local communities. Nevertheless, only three locations which provide proper praying room, two destination's geolocations far away from praying room, and one destination with no praying room from ten surveyed tourism destination. The research covering Weh Island only, besides Halal Tourism concept implemented surrounding Aceh Province and even widely announced in another province. Furthermore, the accuracy and precision could be improved by more field surveyor. The combination between marketing analysis and spatial approach implicated the accuracy of geolocation to build up marketing strategy to promote halal tourism.

KEYWORDS: Geomarketing, halal tourism, Indonesia, Weh Island

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INTRODUCTION

Tourism is a sector that is still promising in increasing foreign exchange in Indonesia. The economic turnaround does not only come from the spending of incoming tourists, but also from the emergence of supporting industries and employment (Rasool et al., 2021). The leading attractions of Indonesian tourism are its natural and cultural riches, where Bali is the axis of tourist destinations in Indonesia for foreign and domestic tourists (Arismayanti et al., 2020). Bali presents the beauty of marine panoramas combined with the strong traditions of the people which are still practiced in everyday life. The combination of two attraction characters, namely natural panorama and local wisdom, has proven successful in making Bali known as a favorite tourist destination model in Indonesia (Antara & Sumarniasih, 2017; Purnamawati et al., 2022). Geographically, Bali is only separated by the Bali Strait from the island of Java where the majority of Indonesia's population lives. These conditions have an impact on the accessibility of Bali's development, so tourism support facilities are created to accommodate tourist needs (Antara & Sumarniasih, 2017; Jaya et al., 2019; Novianti, 2021).

Bali is just one of the thousands of islands in Indonesia. Geographically, the potential for a "new Bali" is very open to the Indonesian tourism industry which combines the concept of marine tourism with the local wisdom of the community (Novianti, 2021; Purnamawati et al., 2022; Utama, 2017). Therefore, it is important to know the geographical potential of biodiversity and culture in Indonesia. This situation is supported by research data which states that there are 633 ethnic groupings in Indonesia, combined with very rich marine biodiversity (Pitoyo & Triwahyudi, 2017; Wagey et al., 2020). One of the potential islands in Indonesia is Weh Island, which is administratively located in Aceh Province, the outermost province of western Indonesia. Weh Island's tourism promotion lies in its unique geography, namely 0 km west of Indonesia, coupled with the unique natural beauty of the island which is surrounded by sea and small islands. The maritime panorama of Weh Island is also not much different from Bali, namely a white sandy beach with a steep beach corner in the form of a rock cliff. The marine biodiversity of Weh Island consists of beautiful coral clusters where coral fish live in the ecosystem (Chan, 2016). The selling point of tourism, in this destination location, is not only the exotic nature but also combined with the unique local culture which strictly adheres to Islamic sharia law (Zalikha, 2015).

Islamic culture in Aceh is so closely linked to the daily lives of its people that Aceh is known by the nickname "Serambi Mecca". The cultural character of the people of Aceh tends to be religious, this can be seen from the way they dress, the presentation of food and drinks, to regional laws (Anismar et al., 2018; Rani et al., 2020). The same situation applies to tourism activities (Anismar et al., 2018; Zalikha, 2015). The combination of natural heritage and cultural heritage on Weh Island also provides a unique style to its form of tourism. The local government calls it halal tourism, namely the provision of tourism services that are Islamic in nature but universally acceptable (Desky et al., 2022; Syahra et al., 2022). This halal nature is implemented in marine tourism activities which are the main attraction of Weh Island tourism.

Halal tourist attractions on Weh Island are one of the three main components of tourism which include 3A (Attraction, Amenities and Accommodation) (Reza, 2020). Apart from the uniqueness of the attractions, the Weh Island tourism assessment must also pay attention to the existence and quality of amenities and accommodation. The island of Bali is the model that best suits the character of Indonesian tourism, where the 3A components are fulfilled appropriately (Jaya et al., 2019; Novianti, 2021). Apart from tourist attractions in the form of a combination of natural and cultural heritage, the development of facilities and infrastructure to make it easier for tourists to visit tourist destinations. In order to respond to the enthusiasm of tourist arrivals, it is necessary to build accommodation facilities such as accommodation, restaurants and even places of worship in tourist destination areas. The ease of access of tourist destinations to accommodation facilities has an influence on the assessment of tourist visits (Ismail & Rohman, 2019; Napitupulu et al., 2021). Therefore, this research aims to provide an analysis of favorite halal tourist destinations in Weh Island regarding accommodation access. The approach that will be used is the geomarketing method, namely an approach that utilizes the position and coordinate s of objects to analyze tourism market potential (Peñarubia-Zaragoza et al., 2019).

This research is important to provide an assessment of the uniqueness of halal tourism in Weh Island through a geomarketing approach. With characteristics similar to Bali Island, namely natural heritage combined with cultural heritage as the main attraction, Weh Island cannot yet compete with Bali Island in attracting tourist visits. Data shows that during the Christmas 2022 and New Year 2023 holidays, visits to Weh Island

amounted to 13 thousand tourists compared to 293 thousand to Bali Island, where both samples were taken from arrivals by sea (Fanani, 2022; Kompas.com, 2023). Understanding the problems that occur can be the key for local policy makers in developing halal tourism potential in Weh Island.

LITERATURE REVIEW & HYPOTHESIS

Halal Tourism

First, there needs to be an understanding of tourism as a promising economic commodity in the future. This is important for the level of sustainability of an industry where humans depend on the system for their livelihood. Therefore, tourist needs are the main point in organizing tourism to provide a comfortable experience (Cole et al., 2019; Wang et al., 2015). Tourists have the motivation to feel comfortable while at tourist destinations, this is in accordance with the purpose of traveling, namely to relieve stress and relax (Hikmah et al., 2022). Moreover, if the intended tourist destination is located in a remote location and requires extra effort to reach it. So, the tourism industry must operate in accordance with the ideal conditions of 3A, where tourist attractions that can attract the attention of tourists must be followed by the development of accessibility and accommodation. Considering that tourism is a hospitality-based business, the intensity of tourist arrivals is determined by factors that make them comfortable in addition to their strong desire to visit tourist attractions (Handayani et al., 2019; Rahmafitria et al., 2020). The suitability of facilities and accessibility have an impact on consumer satisfaction, the better and more complete it is, the more consumer confidence will follow.

The level of tourist loyalty in coming to tourist destinations is one of the industry goals in the sustainable tourism sector. Tourists, as consumers, pay close attention to marketing products that they have paid for and enjoyed (Napitupulu et al., 2021). Providing superior service will serve an impressive experience for consumers, the implication of which is consumer satisfaction where they will make repeat purchases in the future (Auliya & Prianti, 2022; Sari et al., 2019). It is possible that those who feel satisfied will promote tourism services that they previously felt were satisfactory. Repeat visits can be identified as an intensity with a loyal tourist character (Seetanah et al., 2020). Likewise, if tourists experience an uncomfortable experience, it will also reduce the image of the tourism destination. The assessment of the success of a service is satisfaction, the main benchmark is the tourist's desire to carry out tourist activities at the same location in the future (Suprina et al., 2023). Maintaining tourist loyalty can be done by maintaining the existence of supporting facilities for marketed tourism products. Therefore, it is very important to pay attention to the existence and quality of services in tourist areas, including amenities and accessibility (Cole et al., 2019; Simanjuntak et al., 2018). Besides, the image of the tourist destination must be maintained according to the marketing image in order to maintain the expectations of tourists when they make a decision to travel where consumers have previously made a selection (Guntoro & Hui, 2013; Suprina et al., 2023). Satisfaction with service has a positive effect on return visits and recommendations to others and increases attention to tourist destinations.

The tourism industry in Indonesia is developing very extraordinary, especially with advances in technology keeping up with the times, making literature about tourist destinations very easy (Ramadhani, 2021). Tourism as a business requires innovation to attract the attention of potential target markets, where currently the concept of sharia-based religious tourism is growing as a trend. In Indonesia, the concept of religious-based tourism was introduced by the government with the terminology of halal tourism, although in some regions or countries the terms Muslim friendly, Islamic Tourism, Tourism Destination, Halal Travel, and others are used (Adinugraha et al., 2021; Mulyatiningsih & Herianingrum, 2020). Halal tourism is considered capable of providing a feeling of calm and harmony because it creates communication from human obedience to God's laws in Islam. Creating an increased spiritual connection with tourism products is the goal of the halal tourism concept in addition to creating a positive socio-economic impact on society (Prada et al., 2022).

A simple understanding of the concept of halal tourism in spiritual studies is tourism activities that do not conflict with Islamic sharia. Where activities and facilities support religious compliance, including: the availability of halal food, tourist activities wearing Muslim clothing, practicing sharia finance, the availability of places of worship, and others (Mulyatiningsih & Herianingrum, 2020; Reza, 2020). The motivation highlighted in implementing halal tourism activities is the emotional value of tourists in enjoying tourism experiences in general combined with spiritual satisfaction. Harmonization between halal tourist attractions and tourists' needs for halal aspects can be fulfilled in tourist destinations where people are religious, although halal tourism

remains open to tourists who are not Muslim (Battour et al., 2018; Nanggong et al., 2022; Octaviany et al., 2020). He added that the availability of complete and good facilities to support halal tourism can technically provide visit satisfaction which ultimately has an impact on tourist loyalty (Mohamed et al., 2020; Prada et al., 2022). Moreover, curiosity about a new type of tourism also has an impact on non-Muslim tourists' curiosity to try it as first time (Battour et al., 2018). For tourists, the attraction of halal tourism lies in the spiritual needs of consumers and their curiosity to gain new experiences with halal tourism. Another note is that non-Muslim tourists have no objection to the concept of halal tourism on the condition that halal attributes can also be enjoyed together without any contradiction to Islamic religious philosophy (Sultana et al., 2020). Thus, spiritual motivation has a positive effect on the loyalty of halal tourism tourists.

Geomarketing Approach

The tourism business sector in the last decade has grown very dramatically in providing financial benefits in the various countries that develop it (Mazhenova et al., 2016). Even though the issue of the Covid-19 pandemic was hit from 2020 to early 2022, in reality the tourism business was able to find its way back on track after the Covid-19 pandemic (Assaf et al., 2022). The level of competition does not only occur on a cross-country scale, but it is also massive in the domestic region. Tight domestic competition has a competitive effect on the tourism market, especially in market locations and target markets that are relatively close (Dušek et al., 2019; Turk et al., 2014). Stabilizing marketing based on geolocation between the market and the target market can be done through proper planning such as the use of information systems. The specific use of information systems in building communication between customers and the market can be approached through location information (Azri et al., 2018). Then it becomes important that information on the market's ability to reach customers (or vice versa) can influence user experience (UE). Technological developments that utilize information systems to support marketing analysis based on location (geotargeting) are better known as geomarketing methods (Azri et al., 2020; Peñarubia-Zaragoza et al., 2019). The geomarketing approach can be applied in economic analysis and marketing management, including the tourism sector.

Geomarketing analysis is closely related to information systems that utilize location databases, in the context of spatial analysis, Geographic Information Systems (GIS) are introduced in an environment that integrates data in spatial values (Turk et al., 2014; Yang et al., 2016). In the current digital era, with digital data, managing information systems is a fundamental need and presenting them in a form that is easy for users to understand. It is very common for GIS applications to be used in the fields of economics, demography, geographic dimensions, sociology, geology, urban, planning, and even across scientific disciplines (Demirci, 2008; Xia, 2004), and does not rule out the possibility of expanding further in the future. Essentially, as a tool, GIS relies on digital maps that provide the position (location) of objects for analysis of policy planning projections where the context is halal tourism. The use of GIS has a positive influence on geomarketing analysis in planning and policy making, and so far, no one has used it for the halal tourism sector.

Method

Pre-research

Management of the tourism industry requires tourist attractions as products sold to consumers. In Indonesia, tourism is developed with various concepts such as rural tourism, urban tourism, sustainable destination-based tourism, and halal tourism as promising projects in the future (Auliya & Prianti, 2022; Churiyah et al., 2021). There is a reciprocal relationship between tourism supporting components and tourism development itself. The component construction model in question includes: accessibility, accommodation and amenities where the existence and quality of the tourism components will be directly proportional to the development of the tourism industry (Karim et al., 2021). Accessibility, accommodation and amenities are a general description of the supporting components of halal tourism, therefore more detailed preliminary research is needed before geolocation analysis using a geomarketing approach.

Preliminary research was carried out using the literature study method to determine variables that could be spatialized in the context of halal tourism development in Weh Island. Previously, the supporting components, namely accessibility, have been obtained and can be described in more detail, including roads and transportation facilities (Dinu, 2018; Karim et al., 2021). From the accommodation factor, of course the

existence of hotels or inns makes it easy for visitors to enjoy (Siwek et al., 2022). Meanwhile, amenities is more influenced by restaurants, shopping and other public facilities (Auliya & Prianti, 2022; Zheng & Zhao, 2023). The results of the literature study were then tested through surveys in the field by conducting questionnaires with tourists. There are no special criteria for respondents, only validating that the respondent is an adult tourist who visits. Respondents who were willing to be asked for data were 30 volunteers with domestic and foreign tourist backgrounds, representing both first and repeat visits. The data obtained provides an illustration that the amenities needed by visitors at halal tourist locations are more specific, such as prayer rooms, public toilets, parking lots, and even access to telecommunications networks as shown in Table I.

Table 1. Spatial Components of Halal Tourism Facilities

No	Tourism Component	Dominant Spatial Component
1	Lodging	lodging
2	Parking Area	Musholla
3	Musholla	Public Toilet
4	ATM Machine	Restaurant
5	Public Toilet	Road
6	Restaurant	
7	Road	
8	Clean Water	
9	Communication Network	
10	Transportation	

Geomarketing

The expected results are segmentation of geographical location data which is analyzed and presented in spatial form so that it is easy for users to understand. The current method that suits our needs is geomarketing, a fusion approach between geospatial technology and marketing management analysis in making decisions. The idea is to integrate data by software, then process it using digital cartography and tables. Geographical perspectives have been widely used in policy making through socio-economic analysis, behavior and consumer habits (Yrigoyen, 2003).

Focus Group Discussion

In order to obtain more complex data variations, data was collected using the Focus Group Discussion (FGD) method. With the FGD, it is hoped that we will get broader information, namely the development of Pulau Weh as a halal tourist destination. The perspective of implementing FGD is direct communication by expecting a response from the sources presented (Mello & Cruz, 2018). In this research, sources who have capabilities related to halal tourism are government representatives in the tourism sector. The second resource person is a community figure who has lived on Pulau Weh for a long time and is a living witness to various policies across generations of government. Data collection techniques must be carried out in an incentive and interactive atmosphere in presenting the topic instrument to be achieved (Yrigoyen, 2003). Geomarketing can be used as a tool to access problems based on location with the context of product marketing in a spatial dimension in integrating data (Sääksjärvi & Talvinen, 1993; Yrigoyen, 2003). The effectiveness of the marketing system will be more effective if it successfully integrates the organizing and technical functions of information system management (Gounaris et al., 2007; Sääksjärvi & Talvinen, 1993). . In this research, geomarketing will be used as a tool to present information in spatial form from halal tourism data on Pulau Weh, it is hoped that it can be used as material for consideration by local authorities to create halal tourism policies.

Technically, the implementation of geomarketing in this research was carried out in two stages which were carried out sequentially. The first is a field survey which is based on the results of a preliminary survey. The data taken is geolocation data for the dominant spatial components, namely: accommodation, prayer rooms, public toilets, restaurants/stalls, and road access to tourist destination locations based on distance. There are many choices of tourist locations in Weh Island by entering tourist keywords in the Google search

engine. Through the Google Maps platform, this research received recommendations based on the comments included. However, after direct observation, many tourist locations listed on Google Maps were validated, that is, the tourist locations did not exist or were fake information. Therefore, this research uses the Google Maps Webscraping method to obtain tourist destination survey locations based on algorithms derived from tourist feedback, activating filters for the 10 most popular tourist destinations in Weh Island. The next step is to observe the tourist destination regarding the distance to the parameters that have been determined using a handheld GPS (Global Positioning System). Geospatial analysis using GIS with digital cartography computing techniques.

This study involved adult tourist respondents in a preliminary questionnaire survey and relevant stakeholders in a focus group discussion (FGD). Participation in both data collection activities was voluntary. Participants were informed about the research objectives, the nature of their participation, and the intended use of the collected information before data collection. Informed consent was documented in accordance with the procedures followed during the study. Participants' identities and personal information were treated confidentially, and the information collected was used solely for research purposes.

Result and Discussion

Result

Through a digital-based approach, the 10 most popular tourist destination locations on Weh island have been determined. Based on the observations in Figure 1, it can be seen that all the favorite tourist destinations on Weh island are marine tourism because of their location on the coast. The results of this research were confirmed by (Kim & Park, 2015) who stated that the tourist experience of traveling to Weh Island received a positive response for its beach tourism. The 10 favourite tourist destinations include: Iboih Beach, Goa Sarang Beach, Gapang Beach, Teupin Ciriek Beach, Ujong Ne Beach, Anoi Itam Beach, Paradiso Beach, Sumur Tiga Beach, Anoi Itam Japanese Fort Beach, and Rubiah Beach. Geolocation details are in accordance with Table I, where spatially the northern part of Weh Island dominates the favorite tourist destination for tourists who come to Weh Island even though port access is in the southern part of the island.

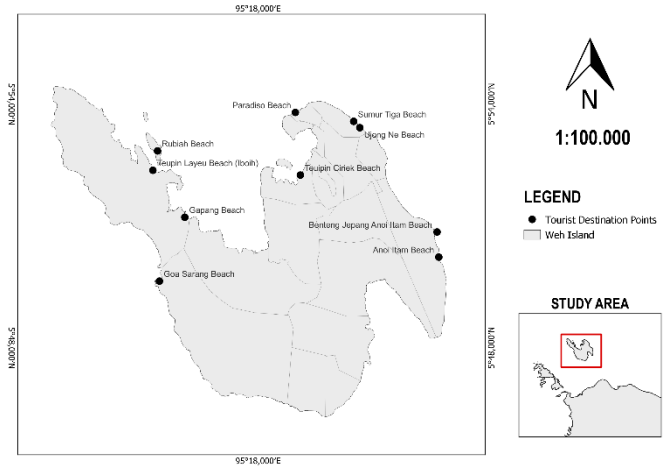


Figure 1. Research Location for Halal Tourism Destinations on Weh Island

There are three location points, from Figure 1 and also Table II, which show that at least 6 of the 10 favourite destinations are located in adjacent spatial spaces. The three locations are located on the northwest coast with mainstay tourist destinations Iboih Beach and Rubiah Beach, the northeast area with Sumur Tiga Beach and Ujung Ne Beach, and the eastern area of the island with the Japanese Fort Anoi Itam beach and Anoi Itam Beach. Looking different is Goa Sarang Beach which is located in the western part of the island, far from other tourist destinations and the only location that faces directly the Indian Ocean.

Table 2. Geolocation of Tourist Destinations on Weh Island

No	Tourism Destination	Coordinate	
		Longitude	Latitude
1	Iboih beach (Teupin Layeu)	95.25674	5.87285
2	Goa Sarang beach	95.25941	5.82739
3	Gapang beach	95.26983	5.8536
4	Teupin Ciriek beach	95.31731	5.8709
5	Ujong Ne beach	95.34174	5.89033
6	Anoi Itam beach	95.37419	5.83723
7	Paradiso beach	95.31526	5.89658
8	Sumur Tiga beach	95.3392	5.89293
9	Benteng Jepang beach	95.37349	5.84754
10	Rubiah beach	95.25863	5.88077

Iboih Beach, through virtual reviews on digital platforms (Figure 2), is in first place as the most favorite destination among others. Therefore, it is not surprising that the Iboih Beach tourist destination has high attention. This condition is directly proportional to the facilities available at the Iboih Beach location, where road accessibility is not far and is in good condition and supported by other facilities which are quite complete such as a large place of worship, toilets, a large number of restaurants, and various types of accommodation (Table III).

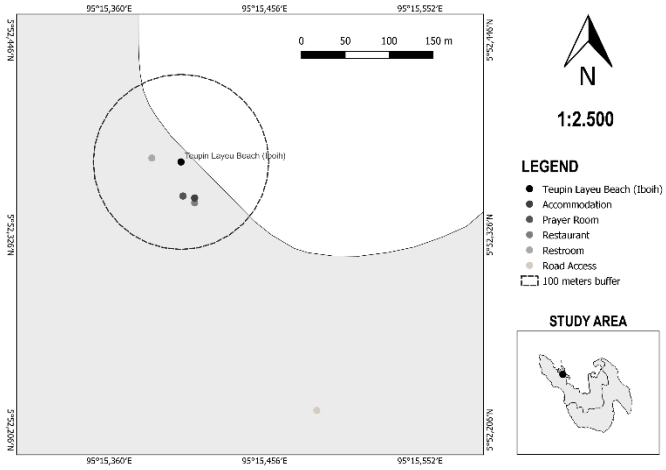


Figure 2. Location of Iboih Beach (Teupin Layeu)

Table 3. Iboih Beach (Teupin Layeuh) Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		
Lodging	95.25688	5.87248	39.56008089	There is an abundance of accommodation, toilet, and restaurants.
Road	95.258137	5.8703	290.7595054	
Toilet	95.25644	5.87289	30.2654919	
Mushola	95.25676	5.8725	35.05709629	
Restaurant	95.2569	5.87247	41.23105626	

The location of Goa Sarang Beach, which is far from other tourist destinations, means that this location was not visited by many tourists when the survey was conducted, in contrast to Iboih Beach (Figure 3). Road access is in good condition and the distance to tourist location points which is not far makes it an added value. Unfortunately, at Goa Sarang Beach there is no accommodation as one of the attributes of tourist facilities (Table IV).

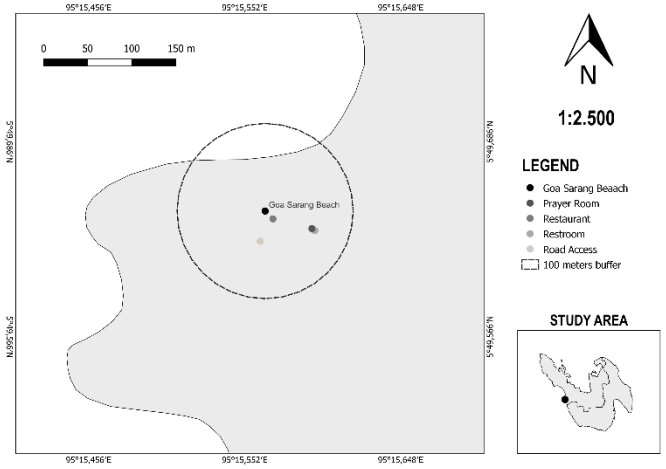


Figure 3. Geolocation of Goa Sarang Beach

Table 4. Goa Sarang Beach Metadata

Parameter	Koordinat		Distance (m)	Condition
	Longitude	Lintang		
Lodging				No lodging. Toi-
Road	95.25936	5.82708	31.40063694	letand a prayer room
Toilet	95.25992	5.82719	54.7813837	(mushola) are locat-
Musholla	95.25992	5.82719	54.7813837	ed within the same
Restaurant	95.25949	5.82731	11.3137085	complex.

The geolocation of Gapang Beach (Figure 4) is not far from Iboih Beach, the road access is also quite good, making it easier for tourists to visit. The main problem is the unavailability of public toilets at tourist locations (Table V), and the location of places of worship that are relatively far away. Even though it has fairly complete facilities, the conditions of the facilities available are not in proper condition and seem poorly maintained. Apart from that, the location is quite far from the main road access and the unavailability of accommodation can give a negative impression of Teupin Ciriek Beach (Figure 5, also see it location in Table VI).

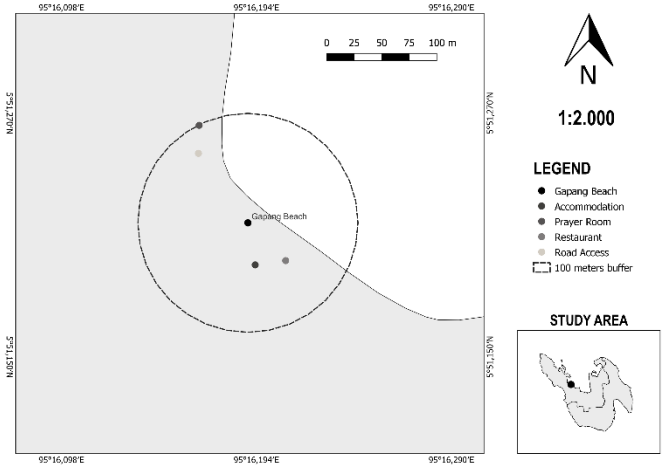


Figure 4. Gapang Beach Geolocation

Table 5. Gapang Beach Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		

Lodging	95.27014	5.85329	43.84062043	No toilet
Road	95.269424	5.85417	69.98114032	
Toilet	-	-	-	
Musholla	95.26943	5.8544	89.4427191	
Restaurant	95.27014	5.85329	43.84062043	

Ujong Ne Beach is located on the northeastern side of Weh Island, facing the Strait of Malacca; its scenic views and white sandy shore offer a sense of natural beauty. Unfortunately, however, a site survey revealed a lack of proper facilities: there are no places of worship, the restrooms are in a state of disrepair, and the access road to the site is quite steep. On a positive note, Ujong Ne Beach is situated near at least two lodging establishments.

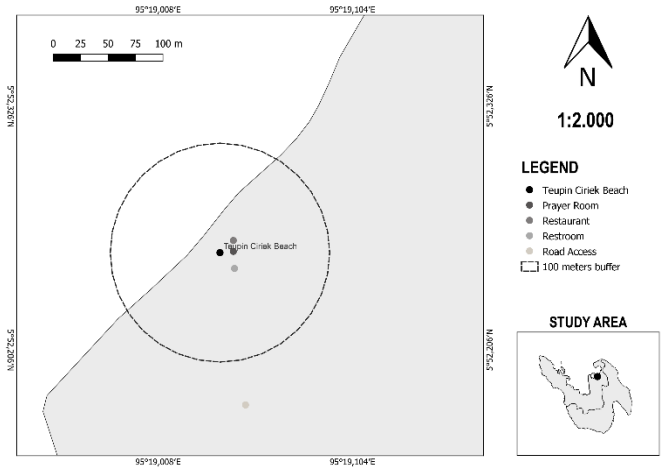


Figure 5. Teupin Ciriek Beach

Table 6. Teupin Ciriek Beach Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		
Lodging				No accommodation
Road	95.31752	5.86965	126.7517258	available. Toilets are
Toilet	95.31743	5.87077	17.69180601	in poor condition.
Musholla	95.31742	5.87091	11.04536102	
Restaurant	95.31742	5.871	14.86606875	

Ujong Ne Beach (Figure 6) is located in the northeast of Weh Island and faces the Malacca Strait, the panorama and white beaches provide a feel of natural beauty. However, it is neutral reporting that during the survey there were no good facilities, there were no places of worship, abandoned toilets and steep road access to tourist sites (Table VII). The good thing is that Ujung Ne Beach is near more than two accommodations.

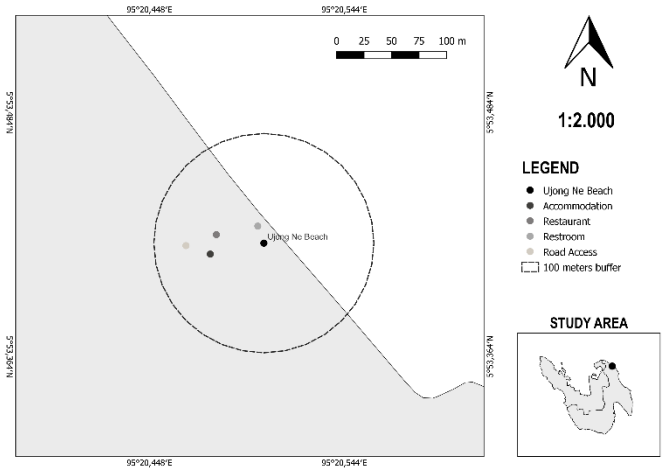


Figure 6. Ujong Ne Beach Geolocation

Table 7. Ujong Ne Beach Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		
Lodging	95.34174	5.89024	44.91102315	No prayer room (mushola) is available. The toilets are in a neglected state.
Road	95.3413	5.89031	64.03124237	
Toilet	95.34169	5.89047	14.86606875	
Musholla				
Restaurant	95.34135	5.8904	39.62322551	

One of the advantages of Anoi Itam Beach (Figure 7) is that its facilities for places of worship are large and very well maintained, especially because local people do a lot of activities in the places of worship provided (Table VIII). Public toilets are not well maintained, but places of worship provide good toilet facilities. Another drawback is that there is no accommodation around the tourist location.

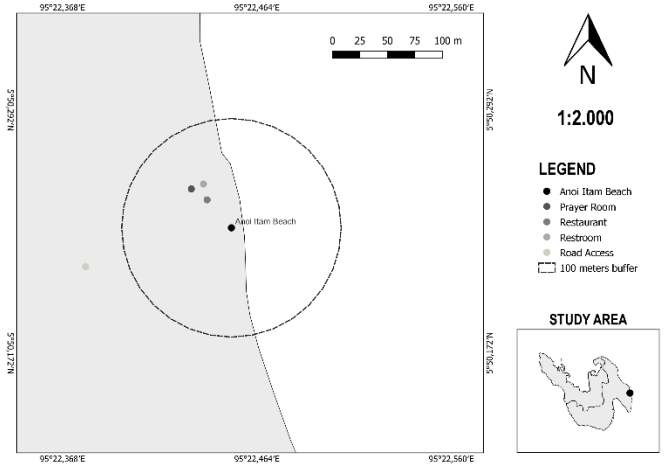


Figure 7. Anoi Itam Beach Geolocation

Table 8. Anoi Itam Beach Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		
Lodging				No accommodation available. Other facilities are in good condition.
Road	95.37299	5.83691	124.1933976	
Toilet	95.37396	5.83759	42.72001873	
Musholla	95.37386	5.83755	45.96737974	
Restaurant	95.37399	5.83746	30.47950131	

Paradiso Beach (Figure 8) is very easy to access for visitors because it is located right on the edge of the main road with a distance of 0 meters. Many people take advantage by opening culinary businesses along the coast. However, it is very unfortunate that the location of public toilets and places of worship greatly reduces the value of comfort (Table IX). Moreover, during the survey the condition of the toilet was locked. The lack of accommodation is also something to note.

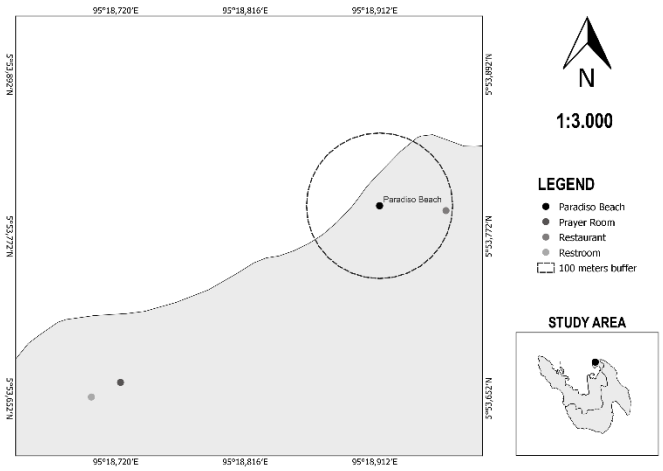


Figure 8. Paradiso Beach Geolocation

Table 9. Paradiso Beach Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		
Lodging				Lodging is not available. The restrooms and prayer room are neglected.
Road	95.31526	5.89658	0	
Toilet	95.3117	5.89422	427.1205919	
Musholla	95.31206	5.8944	387.2002066	
Restaurant	95.31608	5.89652	82.21921916	

Even though the location of Sumur Tiga Beach is not far from Ujong Ne Beach (Figure 9), this tourist destination has better facilities such as places of worship, toilets and good road access (Table X). It's just that the location of the accommodation is quite far when accessed by foot. Another note is the condition of the facilities at the location which are not regularly maintained.

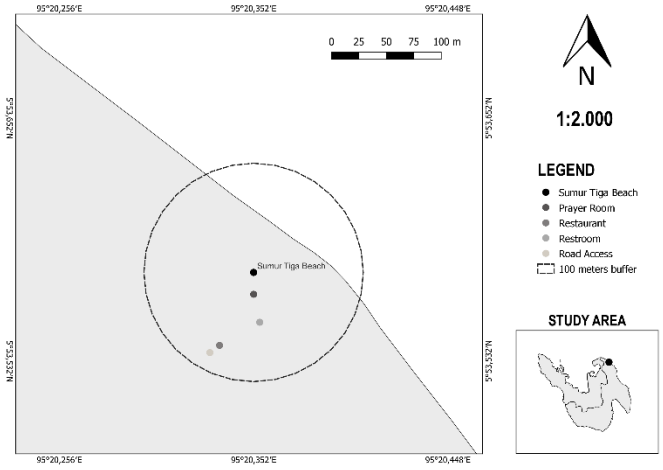


Figure 9. Sumur Tiga Beach Geolocation

Table 10. Sumur Tiga Beach Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		
Lodging				No lodging available. The toilets and prayer room (musholla) are neglected.
Road	95.33884	5.89227	75.17978452	
Toilet	95.33925	5.89252	41.30375286	
Musholla	95.3392	5.89275	18	
Restaurant	95.33892	5.89233	66.21178143	

The geolocation of Anoi Itam Japanese Fort Beach (Figure 10) is not far from Anoi Itam Beach with different tourist offerings because apart from the beach it also offers a tourist attraction in the form of fort artifacts from the Japanese colonial period. Hilly beaches also provide a different beach tourism experience. However, unfortunately, the access road is relatively far from the main road and there is no accommodation around the tourist location (Table 11).

Rubiah Beach is still in the same bay zone as Iboih Beach (Figure 11), so it benefits from the high attention of Iboih Beach visitors. However, it is very unfortunate that the absence of public toilet facilities and accommodation gives a negative experience to this tourist destination even though the tourist attractions one of the favorites (Table 11). The distance from road access is not a serious obstacle for tourists to come to enjoy tourism at Rubiah Beach.

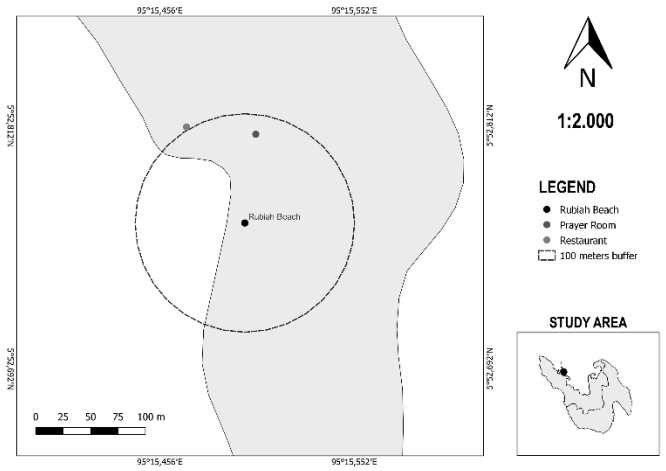


Figure 10. Rubiah Beach Geolocation

Table 11. Rubiah Beach Metadata

Parameter	Coordinate		Distance (m)	Condition
	Longitude	Latitude		
Lodging				No accommodation available.
Road				The toilets and prayer room
Toilet				(mushola) are neglected.
Musholla	95.25839	5.88013	68.35202996	
Restaurant	95.25782	5.88019	99.62429423	

Discussion

Determining a buffer of 100 meters from tourist destination locations is the result of research previously carried out by (Peñarubia-Zaragoza et al., 2019) taking into account the comfort factor. The close distance between tourist destinations and supporting facilities, as well as complete facilities, provide a sense of comfort for tourists who come to visit. The buffer results are displayed in the form of 2D maps in Figures 2 to Figure 11 which cover all tourist destinations surveyed. The adaptation of the geomarketing method from the results that have been presented provides a territorial picture of how the tourist destination area in Weh Island is structured regarding its supporting facilities. Direct surveys also add validation to the actual situation in the field.

The application of GIS in the geomarketing approach is as a tool for storing geolocation data, analyzing it, and even visualizing the required information instruments. (Chen et al., 2022) had also previously implemented GIS technology by analyzing tourism in alluvial areas. The spatial approach in this research is used to analyze the conditions of halal tourism in Weh Island. The results shown illustrate that there are still many tourist locations that do not provide places of worship such as Ujong Ne Beach. Apart from that, inappropriate conditions of places of worship can also be seen at Sumur Tiga and Teuping Ciriek Beaches, and places of worship at Paradiso Beach are too far from tourist destinations, namely in the range of 387 meters as in Table 9.

Quantitative observations in this research provide analytical penetration that cannot be reached by

qualitative spatial analysis in geomarketing methods. This is important to understand the comprehensive problem of halal tourism in Weh Island and how it is developed from various points of view. Talking about halal tourism in the city of Sabang, this halal tourism was initially a national plan, because Aceh is a sharia area, so Aceh took it first. The current target is to attract the hearts of foreign tourists, especially Muslims and also non-Muslims, who can also experience this tour (Ulfa et al., 2019). Sabang is in Aceh, where Islamic law is adopted, so it is the responsibility of the local government to implement sharia principles both in terms of tourism and trade, all based on Islamic law which includes food, facilities, services and other things that are truly in accordance with sharia law. One of the results of the FGD stated that halal tourism opportunities on Pulau Weh were open to development because there was no night entertainment, no discos or pubs, only people sitting in cafes. Meanwhile, activities on the beach are also monitored by the local community so that tourists behave not beyond the limits of local wisdom.

The results of observations and discussions also show that in terms of sharia facilitation, there is no mixing between men and women, which is still difficult to implement. For example, at Sumur Tiga, Rubiah and Iboih beaches, which are busy with visitors, there are no special areas separating men and women. Apart from that, another note is that at several beach points that are not tourist destinations, foreign tourists are found traveling in revealing clothing. Apart from that, domestic and foreign visitors generally have looked for information about the concept of tourism in Weh Island so that halal tourism that runs in Weh Island indirectly gets support from the awareness of tourists who come.

An important distinction emerging from these findings concerns the difference between Muslim-friendly tourism provision and compliance with a formal Sharia-based legal framework. Muslim-friendly tourism generally refers to the availability of facilities and services that accommodate the religious needs of Muslim visitors, such as prayer facilities, halal food, an environment that respects Islamic values, and access to religious practices. These provisions can be developed through local initiatives, community awareness, and the voluntary practices of tourism businesses without necessarily requiring a specific regulatory framework. In contrast, formal Sharia compliance involves the implementation of legally established standards, supported by explicit regulations, institutional responsibilities, monitoring mechanisms, and consistent enforcement. Therefore, the presence of Muslim-friendly facilities should not automatically be interpreted as evidence that a tourism destination has achieved comprehensive compliance with formal Sharia principles.

This distinction helps explain the conditions identified in Weh Island. The predominantly Muslim social environment, community involvement in maintaining acceptable tourism activities, and the availability of prayer facilities in several destinations indicate the presence of Muslim-friendly tourism characteristics. Nevertheless, the field observations reveal inconsistencies in the provision and maintenance of religious facilities, the absence of designated areas separating male and female visitors at several popular beaches, and differences between expected religious norms and some tourist practices. These findings suggest that the implementation of halal tourism in Weh Island currently relies substantially on prevailing social values, community awareness, and the availability of selected religious amenities rather than on a comprehensive and consistently enforced regulatory framework specifically governing halal tourism. Consequently, the development of halal tourism requires more than the provision of religiously appropriate facilities; it also requires clearer institutional coordination, operational standards, and an appropriate regulatory basis to ensure consistency between the destination's Muslim-friendly identity and its formal implementation of Sharia-related tourism principles.

Conclusion

This study demonstrates the usefulness of a geomarketing approach in assessing the spatial distribution and accessibility of facilities supporting halal tourism on Weh Island, Indonesia. Based on field observations of ten popular tourist destinations, the findings reveal considerable differences in the availability, proximity, and maintenance of tourism facilities, particularly accommodation, road access, public toilets, restaurants, and prayer facilities. Among the destinations examined, Iboih Beach represents the most favorable case in terms of supporting infrastructure. Its accommodation, toilets, prayer facilities, and restaurants are located within approximately 41 meters of the main tourist area, while road access is relatively farther away. This spatial condition is supported by the surrounding tourism ecosystem, which provides additional services and facilities for visitors.

Nevertheless, the findings indicate that the provision of facilities remains uneven across Weh Island. Several destinations have inadequate or poorly maintained prayer facilities and public toilets, while others lack accommodation or require visitors to travel relatively long distances to access essential amenities. For example, Ujong Ne Beach has no identified prayer facility, whereas the prayer facility serving Paradiso Beach is located approximately 387 meters from the destination. These conditions demonstrate that the attractiveness of natural tourism resources does not necessarily correspond to the availability and accessibility of adequate supporting infrastructure. Therefore, improving the distribution, accessibility, and maintenance of tourism facilities should become a priority in developing a more comfortable and inclusive halal tourism environment.

Beyond physical infrastructure, the findings also highlight the distinction between Muslim-friendly tourism provision and the comprehensive implementation of Sharia-based tourism principles. Although the predominantly Muslim social environment and community awareness contribute to the development of Muslim-friendly tourism practices, the observations indicate that the implementation of religiously appropriate facilities and arrangements remains inconsistent across the destinations examined. This suggests the importance of strengthening institutional coordination, establishing clearer operational guidelines, and improving the management of tourism facilities in accordance with the local context and applicable regulations.

This study has several limitations that should be considered when interpreting its findings. First, the geographical scope was restricted to Weh Island, Aceh, Indonesia, and the spatial analysis focused on ten popular tourist destinations identified through Google Maps-based searches and visitor feedback. Consequently, the findings may not fully represent the broader conditions of halal tourism development across Aceh or other Indonesian regions. Second, the preliminary assessment involved 30 adult tourist volunteers, representing domestic and international visitors with both first-time and repeat-visit experiences. Although their responses helped identify relevant tourism facilities, the relatively small, voluntary sample limits the extent to which the findings can be generalized to the wider tourist population. Similarly, the qualitative insights obtained through the focus group discussion were based on a limited range of stakeholder perspectives, particularly government representatives and a local community figure. Third, the spatial assessment was conducted through field observations and GPS-based measurements during a specific research period in August 2023. Therefore, the findings represent the conditions of tourism facilities at the time of data collection and may not reflect subsequent changes in infrastructure, accessibility, or facility maintenance. Furthermore, the accuracy and comprehensiveness of the geospatial analysis could be improved through additional field surveyors, more extensive spatial coverage, and more advanced three-dimensional mapping techniques. Future research could address these limitations by incorporating a larger and more diverse sample of tourists, engaging a wider range of tourism stakeholders, extending the geographical coverage, and employing more detailed spatial measurement techniques. Such developments would provide a more comprehensive understanding of the relationship between tourism infrastructure, spatial accessibility, and the implementation of halal tourism principles.

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