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SPATIAL AND COMMUNITY RESILIENCE IN TOBA AREA AS CULTURAL LANDSCAPE

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ABSTRACT

Tourist need information (i.e location, access, ticket, transportation, schedules, ets) from the internet and Internet of Things (IoT), they need convenient and accurate information for their vacation time. Convenience is defined as the satisfaction and safety of the tourists within the tourism area or during the trip. Based on it, local community must be the main actor and the primary driver of governmental agendas, collaborating with government and third parties. In many tourism area, local community have no information technology skills and cannot adapt to the developmental change needed for tourism. They have no community resilience. This paper, as a result of research with case study method, describes Toba area as cultural landscape heritage and the problem of local community to face the tourism development. A case study method is used to describe the ability and capacity to achieve 4.0 tourism, tourism development, and resilience in the local community.

KEYWORDS: resilience, community, cultural, landscape, spatial, tourism

1. INTRODUCTION

In the era of information technology (IT), digitalization (which is based on big data) needs to be accessed by everyone smoothly and efficiently. Everyone needs to have a tool to access information and to create knowledge in the virtual space, through websites, social media and applications. Using one finger, everyone can know and understand any information quickly and accurately which can integrate with other links. People are always thinking throughout their life how to achieve their goals only and precisely in a short time, which then leads them to activities like shopping, traveling, working, getting treatment, etc. Included in this case is the tourism movement [1], [2]. Tourism booms have occurred in many places, caused by the need for people to have pleasure time, which is achieved by visiting tourism destinations. Tourism is a complex system covering a series of operations, such as transactions, activities or events in the tourism market [3]. Based on promotion, everyone visits and enjoys interesting places or tourist attractions, later sharing their tourist experiences for others. They want others to get experience from their review of each destination. But there is a critical problem when there is no information about the destination or the weather changes, which can influence tourist activity, since tourists spend their time and money to relax and enjoy the places, not to wait in long

lines during lousy weather. The other problem is that the local community must learn to operate and manage the tourism applications, as well as learn to adapt to the tourist movement. The difference in lifestyle can affect the local community if there is no ability to adapt to change. Without considering the ability to struggle and human resources, tourist programs also cause a problem [4]. It should be thought to overcome social disaster i.e., shock and stress. To overcome these phenomena, it is necessary to understand the tourist movements based on local communities based on resilience and community resilience approaches. Resilience is the ability to respond to stresses and shocks while preserving system identity and primary system function [5], [6]. Resilience is the system to anticipate future impacts and potential change [7]. The study area of this research is focused on Toba, North Sumatera. Toba has various tourism destinations, spread throughout Samosir Island and the other regions which surround Lake Toba and the caldera. The tourism experience in Toba is a cultural heritage landscape with unique landscapes as geology process and interesting objects i.e., traditional house, a monument for forefather, tradition, event and beautiful scenery. Toba is a national tourism destination and a prioritized tourism development area, with many programs from the central government (under the control of the Ministry of Tourism) such as street improvement, airport and port services, as well as joint ventures with the private sector to create opportunities in the creative economy. One of the government programs is tourism 4.0, which focuses on the millennial generation by utilizing digital platforms, i.e., New ITX-Indonesia Tourism Exchange. However, the discussion in this paper will not only focus on the millennial generation but also on the local community as a whole. This paper describes the opportunities to develop Toba in the Tourism 4.0 framework without reducing the local values or the involvement of the local community. It should still be the main actor in the implementation of tourism agendas. In the main concept of Tourism 4.0, there is no negative impact, both to the local community and tourists. Both of them work together as a holistic system, controlling change in tourism areas.

2. METHODS

2.1 Study Area

Toba area is located in North Sumatera, which has seven regencies, namely Samosir, Dairi, Karo, Simalungun, Toba Samosir, Humbang Hasundutan and North Tapanuli. All of them surround the Toba Lake and Samosir Island (Samosir Island itself is a part of Samosir regency). Toba Lake is a part of each of the six surrounding regencies. Almost all of the areas can be reached from Medan as the capital of North Sumatera, through Silangit as the international airport and Sibisa as the local airport. Samosir Island is notably accessible since it can be reached by ferry when passing through Pangururan, because Samosir Island is right in the middle of Lake Toba. Other small islands can be contacted via traditional boat from the nearest mainland, i.e., Sibandang island from Muara port.



Figure 1: Toba Area as The Study Area

Inhabited by Batak ethnic culture, the native Batak area is one of the central government’s ten prioritized tourism destinations. Toba consists of various traditions, events, exciting places and objects, culinary dishes, and attractions.



Figure 2: The interesting object in Toba Area

2.2 Data Collection and Analysis

This paper explains the results of research which explore Toba as a cultural landscape [8] using resilience theory and attempts to find applicable models to manage tourism areas in Toba. The writing of this paper is structured in three stages, the first stage is the discussion of theories regarding big data,

smart tourism and 4.0 tourism in the context of the cultural landscape and the resilience theory. The second stage discusses the relevant theory with the studied area, to describe the condition of the area and connect the phenomenon that occurs throughout the region. The third stage draws conclusions from the second stage and discusses said findings. The data is collected by studying documents and maps about the area. Additionally, surveys were conducted in the area of study. Reviews for empirical data are used to support and complete the data from the documents. The data is then analyzed with a case study method that uses a qualitative approach.

3. TOURISM 4.0 MANAGEMENT

3.1 Tourism and Information Technology

Tourism 4.0 is defined as the collaboration of any stakeholder in the world to participate in the research or development of tourism of the future [9] or defined as tourism, which is capable of understanding each tourist's needs and making real-time personalized recommendations [10]. All of the components of tourism must be concerned and active in all of the processes. It is stressed that the core of the Tourism 4.0 concept is the integration between the local community, tourists, tourism service providers and government within a collaborative innovation process centered around the local community [9]. Tourism 4.0 can be translated as smart tourism that can be seen as an innovation in information technology [11], [12] or can be seen as a tourism system that takes benefit from smart technology systems [12], [13]. Information technology for tourism can be divided into three periods, starting with the first period between 1991- 2000, when the internet was seen as a market communication tool for information needs (i.e., websites). The second period occurred between 2000-2010, when the travel experiences was packaged as a product that could be bundled and sold with the aid of IT, and the third period happened circa 2010 when the advancements in areas such as search engines, social media, the internet of things and mobile technologies stimulated further transformation of the tourism industry [11]. The three periods were influenced by the development process of the web [11]. Tourism 4.0 and smart tourism cannot break away from advanced services and big data [3], [10], [14]–[16] which in turn is influenced by digital transformation. Big data is a common trend for all industries, including tourism [3] where big data itself is composed of many kinds of information, namely location, brief descriptions, weather, ticket prices, accessibility, transportation, facilities, etc. Tourism 4.0, within big data, is a new form of insight trends and patterns that are relevant for managing customer knowledge, predicting actions, behaviors and choices of customers [3]. The focus of information technology is not only to collect data but also to intelligently store, process, combine, analyze and use big data to design tourism operations, services and business innovations [11]. It helps individuals to understand recent issues effectively and efficiently [11]–[13]. It is an opportunity to change the traditional approach [3]. To collaborate traditional and information technology methods, the local community, needs to have skills. It is crucial to be aware of the local community's lack of ability [9] because the main actor of heritage tourism is the local community [17]. The creative economy is suitable with the concept of heritage tourism if it can be done by local people or local community, and will lead to the local community upgrading their economy through tourism [1], [2], [17]. In other cases, it can be done by

third parties, private sectors or the government. The sustainability of local resources is becoming a significant issue in tourism development to create and supply exciting tourism destinations. Travel behavioral pattern analysis is essential. At the consumer level, they need to provide exceptional support based on a timely, comprehensive understanding of the tourism experience [11]. The degree of tourist satisfaction describes services from the area and it can significantly promote the area, attracting other tourists to come [9], [11], [16]. It can be used to anticipate user needs based upon a variety of factors and making recommendations concerning the context-specific choices; enhancing travelers' on-site experience by offering rich information (that is location-based and customized), interactive services and enabling travelers to share their experience to help others [11]. Based on good experiences, tourists will share on social media or in the application to promote the area [9], [12], [16]. Based on cultural landscape and resilience theory in the tourism area, 4.0 tourism for cultural landscape heritage area can be defined as using information technology to encourage positive tourism development, social culture and economic impact as a product of collaboration from the local community and the other stakeholders. Cultural landscape and resilience theory that focuses on human activities and a social equilibrium can be described in Tourism 4.0 as how to develop the area as a tourism destination with the local community having proficient skills in information technology. Local people should have the ability to manage and conduct tourism activities.

3.2 Community Resilience in Tourism Area

Tourism as a driver of social change [2] can become a disturbance when there is no capacity to adapt to it [1], [2], [18]. Resilience theory is crucial to understanding tourism organizations, destinations, communities and tourists, as individuals can survive, adapt, respond and change in the face of increasing global and local changes and disturbances [18]. In social resilience, it is described as a component where the circumstance under which individual and social groups adapt to environmental changes [19], [20].

Resilience is a concept that will receive ongoing attention and application in tourism in the future [1] which mainly focuses on the local community's capacity to adapt to the changes and avoid disturbances [21]–[23]. Social resilience is defined as the ability of groups or communities to cope with external stresses and disturbances as a result of social, political and environmental change [19]. Rural tourism communities are vulnerable to an economic shock that can disrupt livelihoods and community well-being [23]. There are three critical components in the tourism system: a given protected area, tourism operations and associated communities [24] which can discuss in community resilience. Community resilience is defined as the capacity of individual or community to cope with stress, overcome adversity or adapt positively to change [23]. Community resilience is the existence, development and engagement of community resources by community members, intentionally develop a personal and collective capacity to respond to and influence change, to sustain and renew the community and develop new trajectories for future [25]. Local community must always make equilibrium and balancing in managing the environment in accordance with the cultural landscape and the local resources.

4. Management in Cultural Landscape of Toba As Tourism Destination

Toba as cultural landscape [8] is a large area comprised of seven regencies, with each regency having their potential in heritage tourism activities. The local government has conducted programs to support Toba as one of Ten National Tourism Destinations. There are various programs in Toba to create areas for tourism and leisure. Each regency is designed to support tourism programs. However, today, there is a problem because there is no coordination between each regency and the central government. There is a mass tourism program which focuses on attracting a large amount of tourists to visit the Toba area without understanding the local community and the cultural values of the area. The large size of Toba and each individual regency are not a problem when local people and government have a mutual synergy to manage the potential and weaknesses of the area. Collaboration in each element plays a significant role to create a tourism area. Development must be focused on local people and the local community to support the needs of tourism and infrastructure improvement. Based on blueprints, the local community in Toba collaborate with the private sector to create the tourism destination as a pleasant place for both the indigenous Batak community and the tourists. The government must conduct an assessment of tourism management and prepare an alternative for local people to adapt to the tourism activities without experiencing negative cultural impact. The main problem for tourism management in Toba is how to realize the potential of the local community in utilizing opportunities in the creative economy and how the local community can adapt to the culture change. There are many activities and programs in Toba which are designed by the local community or the government. The primary cause of failure is the lack of knowledge to manage the area. There are no skills to manage it. Meanwhile, the government has already implemented various programs to invite tourist activities. It can be a disturbance and a social disaster, causing culture shock and stress [because of changes in lifestyle, business monopoly, or replacement of the local investors with foreign investors. Tourism should support the local community to become an economy creator, but when there is no skill to manage it, it can define as social resilience. There needs to be cooperation between skills, local knowledge, and economic opportunities to solve the social problem, especially in terms of the economy. The forwardness of the local community, namely the Batak community, is to be a challenge as the main actor of tourism 4.0, where information technology systems are the primary tool. They must be prepared as the local guide and local managers, equipping themselves with excellent communication skills and adequate local knowledge. However, there is a conflict between the ability, capability, and knowledge of the Batak community in the tourism area. Many Batak individuals have no skill to operate the information technology systems and cannot also communicate with the tourists. This lack of skills is mainly present in the older generation. Local people, especially the older age, with vast knowledge about Batak culture, often have no ability to communicate with languages other than the native Batak dialect. For the older generation, another problem arises when they have to operate the information technology-based tools. Understanding that situation, skill improvement to manage the tourism areas must be focused on the millennial generation with the older generation acting as the leading supporter. As long as the impact of tourism 4.0 is concentrated on the local people and maintains local values while also improving the economy, there will be no conflict with each other.



Figure 3: Craft women in Lumban Suhi Suhi

Referring to the various program in Toba to make it as a national tourism destination, there are programs which focus on inviting the tourist to visit the tourism destinations. Infrastructure improvement has been implemented in many places as important roads, such as Pangururan district, Samosir Island Ring Road and several other districts which act as a connector between two or more tourism destinations, as well as a connector between the airport and popular tourist areas. Included in this case is the new port for crossing Toba Lake that is now known as Batak Ihan Port. Pangururan, as the connector between Samosir Island and Sumatera Island through Tano Ponggol bridge, is designated as the main development area by the central government. Other than functioning as the connector, there is a traditional village, Lumban Suhi Suhi, which was developed as a tourism destination. In Lumban Suhi Suhi, there is not only infrastructure development but also improvement of communication skills, especially in the Indonesian language. There is also the improvement of skills to create exciting places by the millennial generation using traditional craft like the ulos craft. The goal of the program is to create a comfortable place for tourists to enjoy the trip and the scenery of Toba.

In addition, government institutions and investors have created new destinations for tourists by changing the environment and the culture style. There are several iconic destinations, such as The Caldera Toba Nomadic Escape, Sigapiton homestyle destination, Sapo Juma garden area, etc. The problem of new iconic locations arises when there is a degradation in local values. Based on mass tourism, local value as the intangible heritage will be desired.

5. Tourism for Toba Area

Recently, one of the Ministry of Tourism's agenda is to achieve Tourism 4.0, which targets the millennial generation with their skills in information technology. There are several websites about

Toba Lake and its tourism destinations, as well as various applications that can be found on the Play Store. The local government designed it, the central government (through the Wonderful Indonesia Program), and the local community. Some websites are designed by individual parties or transportation agents who are interested in the Toba area.

There are several problems with the websites and applications that describe Toba:

1. Sectoral information: The information only focuses on specific fields. For example, only explaining the caldera geopark, building heritage, tradition and event, etc.
2. Incomplete information: The description lacks essential information.
3. No interconnection with other relevant information: There is no connection with the other data, which combined could create a more wholistic description, like climate, weather, transportation, local disaster, etc.
4. Language: The descriptions use Bahasa Indonesia without using English or other international languages.

The other problem to develop Tourism 4.0 in Toba is the internet infrastructure. In several areas, there are no internet data networks. The primary cause of failure of Tourism 4.0 is the lack of reliable internet networks in the tourism areas. In accordance with the problems aforementioned, there is an alternative model to prepare Tourism 4.0 in Toba as the cultural heritage landscape. The first focuses on local people and the local community to adapt to the tourism activities with their capability to avoid social disturbance. The second focuses on infrastructure in information technology, which can be implemented by the government or private sectors to supply internet access to tourism areas. The third focuses on third parties, which is implemented in the form of collaboration between the local community, the government and third parties.

6. CONCLUSION

The main actor of tourism 4.0, which focus on the management of a Toba big data information is local people or local community. Based on information technology in tourism, it is necessary to create local community also receive a positive impact from tourist activities. All of the component, government, and local community, must be concerned and active for the knowledge improvement in IT. IT progress applied in 4.0 tourism is expected to improve the ability to manage the area and regional value. Without good skill and knowledge, the tourism area will only be a dead object that will be abandoned when the social culture and the potential are damaged.

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