Local communities and tourists’ perception towards to PLTD Apung sites as tsunami disaster tourism in Banda Aceh City

U Fahmi¹, N Ginting² and R Sitorus²
¹ Student of Master Degree Program of Architecture Department, Faculty of Engineering, Perpustakaan Street J7 Building, Universitas Sumatera Utara, Medan, Indonesia 20155
² Lecturer of Master Degree Program of Architecture Department, Faculty of Engineering, Perpustakaan Street J7 Building, Universitas Sumatera Utara, Medan, Indonesia 20155

E-mail: ulilfahmi12@students.usu.ac.id and ulilfahmi12@yahoo.com

Abstract. Earthquake and tsunami disasters that hit Banda Aceh city a few years ago, it can be classified as the most terrible natural disasters in the history of the world. Natural disasters were considered as a scary incident, also leave a lot of losses, both regarding moral and material for victims. The establishment of the tourism as media of preservation disaster could be something interesting and demand by the community, especially in the preservation of disaster that usually contains a different perspective. One of the silent witness the awesomeness of tsunami wave that preserves as disaster tourism is tsunami education park, PLTD Apung sites that located in the sub-district of Punge Blang Cut, District of Meuraxa, Banda Aceh city. The community and tourists that interact to tourism object can give the impression, assessment, opinion, felt and interpret something toward to information that displayed. The existence of development experience, ability to think, terms of reference are not the same for each in the community as well as tourists, make it possible to generate a different perception of development. The purpose of this research is to know Community and Tourists Perceptions towards to PLTD Apung sites as Tsunami Disaster Tourism in the sub-district of Punge Blang Cut, Banda Aceh city. This research will conduct by using the descriptive-qualitative method. The research goal is to be recommendations include development activity areas and participation are supposed to do by local community and tourists. In the recommendation is defined procedures development of PLTD Apung sites that considered to community and Tourists Perception. It is expected to optimize the development of PLTD Apung sites that can be an identity of tsunami disaster tourism in Banda Aceh city.

1. Introduction

Natural disasters are often regarded as a horrible tragedy, also leaving many losses, both from moral and material for the victims. The past natural disaster incidents not only leave a traumatic impression on the victims, but it will be a valuable lesson for future generations regarding the future of natural phenomena, history, social impacts, and educational values that important for life. Protecting historic sites and monuments that were at risk of deterioration due to modernization and fell outside the scope of the law discussed [1]. The earthquake and tsunami that destroyed the city of Banda Aceh on December 26, 2004, can be classified as the most horrific natural disaster in the history of the world in recent years. As a result of the earthquake and tsunami that hit the city, most of the existing facilities
were severely damaged, including: housing and basic infrastructure (4,787 permanent houses); educational facilities (41 schools); health and personal facilities; religious, social and cultural facilities; as well as trade and industry facilities [2]. Establishment of tourism object as an information for preserving the history of disaster because the tourist attraction is considered to be something of interest and interested to the public, especially in the preservation of historical moments that usually contain different perspectives. This tourist attraction can be a media visualization of interesting historical events with the manifestation of a regular order of objects. One of the silent witnesses of the straightness of the tsunami waves that have been preserved become the disaster tourism object in the form of tsunami education park that is PLTD Apung Ship. Located in Punge Blang Cut sub-district, Jaya Baru, Banda Aceh. Tourist attraction was initiated by the Aceh government and has developed in several times, the increasing popularity of this attraction is not also followed by the availability of adequate facilities to support the activities and comfort of the tourists who visit this attraction or for the local communities which conduct economic activities in the Aceh region, especially Banda Aceh.

2. Literature Review
Disaster tourism is a journey to an area that has hit by natural disasters or human-caused natural disasters. Information about disasters and their impacts attracts human attention and also serves as an informers and education. Every area affected by natural disasters must have various relics of the tragedy. Disaster tourism is an educational tour that brings destruction, death, and revival as a tourist attraction. The victim’s testimony, as well as the location of the event, becomes an authentic point of concern [3]. Individuals who participate in this type of tour are usually curious to see the impact of a disaster [4]. Utilizing new opportunities from disasters aimed at stimulating and enhancing post-disaster regional economic development [5]. Some others find tragedy and the possibility of a unique and exciting natural disaster [6]. Disaster tourism has a lot of value. Assessment of these aspects to see the response of tourists and the public to their environmental and social conditions. Disaster tourism as something interesting and interesting can be a window to provide understanding and awareness of a natural disaster, which can make touched tourists heart.

The existence of building experience, thinking ability, unequal frame of mind in each community and tourist, will make it possible to produce different versions of development. Perception is formed by two factors: internal and external factors. Internal factors include needs, interests, and motivations. External factors include information acquired (assumptions), knowledge, and needs around [7]. Character, characteristic, and individual behavior both positive and negative that exists within the individual and affect a person in acting and fulfilling his needs [8]. By knowing the public and tourist perceptions about these attractions, it can provide an overview and views on the development or management of the tourist attraction itself. This research to recover features that are useful for various sustainable development program plans that can be accepted by the people of Banda Aceh and specially Punge Blang Cut, as well as tourists visiting this disaster tourism object. Based on the study of theories about the factors that form a perception and disaster tourism, it manifested by perception and disaster tourism variables as a research framework. (Figure 1).
To gain knowledge by means of declarative (knowing strategy), procedural (knowing how to use strategy), and conditional (knowing when and why to use strategy) [9]. Thus, knowledge of disaster tourism owned by local people and tourists can be realized from various observations of the products, processes, and functions of the object. By improving the quality of services from facilities and infrastructure will improve the quality of a tourist attraction to the decision to visit anyway [10]. By looking at the quality of service from existing facilities, every tourist and local community will get the positive and negative impact on their journey. Interest contains elements consisting of cognition (familiar), emotion (feeling), and conation (desire). The element of cognition, in the sense of interest, is preceded by knowledge and information about the object to which the interest is concerned. The element of cognition means that interest is preceded by knowledge and information about the intended object. Emotional elements occur due to participate in a particular participation or experience, while the constituent element is a continuation of the emotional element that will perform and pursue these activities continuously [11]. Interest is preceded by knowledge and information of the object and is manifested in the form of willingness and desire to perform an activity, including interest in doing tourism activities. The satisfaction of tourists to come to enjoy the facilities that exist in the tour becomes an important component for the existence of a tourist attraction. In the tourism, industry experience is something that is sought by tourists and experience is one of the factors that can create satisfaction [12]. The satisfaction of tourists to come and enjoy the facilities available based on their expectations and experience becomes an important component for a tourist attraction.

Consumption of experience and tourism products can be facilitated by forming tourism products that present assets in such a way as to satisfy tourists visiting the location, by providing quality information to optimize understanding and knowledge of historical evidence of an event and provide interpretations that enhance appreciation and knowledge of the historical evidence of an event [13]. Through the development of tourism, disaster tourism can be a window to provide understanding and awareness of the occurrence of a natural disaster event, which can make tourists touched his heart. Thus, they can recognize stunning natural disasters as well as to raise awareness and ability to prevent and deal with disasters. Providing adequate facilities for the comfort, security, and welfare of visitors...
is instrumental in the development of the tour [13]. It is available in tourist attractions can help revive the tourism system. Economic boosts can improve infrastructure improvements, as does small businesses in tourist areas [14]. To attract tourists, promotional messages must show a balance between the restored natural conditions and the historic place in order to satisfy tourists' curiosity about the disaster [15]. The economic aspect is the most prominent requirement in disaster tourism object, business in the form of promotion, potential development, and support of tourism activity can help improve the livelihood of the local communities. Tourist attractions are all things that have the beauty, the value, both in the form of a diversity, which has a uniqueness, both in the richness of culture and man-made which is the factor of attraction and become a tourist destination to visit, which makes tourists motivated to travel to these attractions [10]. To develop tourist area in order to develop such as by establishing linkage of the area with other tourism object conducted cooperation between the society with tourists so that tourism which has not developed get impact from the main tour [16]. Tourist attraction can be an important component for tourists enjoying the facilities.

3. Research Methodology

Research about Local Communities and Tourists’ Perception towards to PLTD Apung sites as Tsunami Disaster Tourism in Banda Aceh city is a descriptive research which is intended to collect information and create a description of the research area and used mix-method. This study was conducted on the perceptual component mated to disaster tourism. Then, the researcher does analysis used mix-method, which combines or alters quantitative methods with qualitative methods. The independent variable is (1) the education; (2) the social; (3) the economy, and; (4) uniqueness. While the dependent variable is affected by independent variables. In this research, the dependent variable is (1) knowledge; (2) needs; (3) interest & motivation, and; (4) assumptions.

The population for this study is the communities who were live in Banda Aceh City and the tourists who visited disaster tourism site in Banda Aceh, only domestic tourists. Samples were taken as many as 106 people. In this case, the sampling technique has chosen for the respondent is accidental sampling technique. The convenience sampling can be used in both qualitative and quantitative study, but it is frequently used in the quantitative study [17]. The data source divided by 2 (two) that is primary data and secondary data. The primary data is questionnaires that submitted to the local communities and tourists who have visited the PLTD Apung Ship, respondents were asked to give a score of 1-5 on the statement based on 4 (four) perception variables on 4 (four) disaster tour variables. The researcher does the direct observation in the field (survey and observation) as a basis for understanding the potential and problems faced in tsunami disaster tour of Banda Aceh city, the researcher obtained data on the condition of the main and supporting facilities on the PLTD Apung Ship. In documentation, the researcher took a visual recording of photos during the observation. While the secondary data in question includes literature study from previous research sources and guidebooks from PLTD Apung Ship managers as an institution that manages this Tsunami site. All data are analyzed by a triangulation method. The quantitative and qualitative data are analyzed together and each to get a general idea and come to a conclusion. Descriptive analysis is generated by SPSS version 24 and is provided in tables and drawings using Microsoft Word and Excel.

The tsunami that occurred on 26 December 2004 left many stories and traces of history, has become a disaster tourism potential. Due to the tsunami disaster in Banda Aceh, there was a ship that dragged wave twice and finally docked in the middle of a residential area in Punge Blang Cut (Figure 3) and now preserved to be a tsunami education park.
Figure 2. Location of PLTD Apung site, Punge Blang Cut

Diesel Power Plant (PLTD) Ship is a ship owned by Electricity Company (PLN), which is currently used as a tourist and known as "Kapal Apung Tour" (Figure 3). According to data from the guide, the ship has a length of 63 meters, 19 meters wide and 4.3 meters high that capable of generating 10.5 megawatts of electricity with an area of about 1900 m² and weighing 2,600 tons. Ownership of this shipbuilding assets belongs to Geology Museum of Bandung, under the Ministry of Resources and Minerals, while the ownership of land assets by the Municipal Government of Banda Aceh, where all activities on the ship PLTD Apung Ship under the supervision of the Department of Culture and Tourism. The development of this site was carried out on an area of 25,000 m² starting planning drawings in 2008 (Figure 3) and continued with physical and environmental arrangements under the supervision of earth experts, art and culture experts.

Figure 3. Site Plan Tsunami Tourism site, PLTD Apung Ship

The area of PLTD Apung Ship developed as a tourist area with a fund of Rp 20 billion from the Ministry of Energy and Mineral Resources (ESDM). Around of the PLTD Apung Ship has built pedestrian paths that surround it so that tourists who visit can see each side. Visitors were allowed to
enter into the sites, this area opened at 09:00 am to 12:00 pm, 02:00 pm to 03:30 pm and 04:30 pm to 06:00 pm and no entry fee charged to visitors. However, a donation box is provided near the entrance and guestbook to be filled with tourists. Some of the main facilities in this PLTD Apung Ship include tsunami education parks, debris houses, monuments, open stages, plazas, libraries, and tourism awareness groups. Also, near the PLTD Apung Ship is also built a showroom that displays some photos post-Tsunami Aceh in 2004 ago. In the tsunami education park, there is a tsunami simulator that will demonstrate the phases of a tsunami.

4. Findings
Based on the result of 106 questionnaires, obtained data that as the tourist is 61.3 % (41 respondents) and local communities is 38.7 % (65 respondents). The data that as 5.7 % of respondents aged between 11-20 years, 81.1 % of respondents aged between 21-30 years, 5.7 % of respondents aged between 31-40 years and 7.5 % of respondents are over 40 years old. The number of respondents who have a background undergraduate education at 23.6 % was High School Degree, sixty-seven point nine percent (67.9 %) was Diploma/Bachelor Degree and eight-point five percent (8.5 %) was Master/Doctoral/Professor Degree. There are 34.9 % of respondents work as private employees, 28.3 % of respondents as students and 9.4 % of respondents work as government employees. Tourist with higher education tends to have a curiosity towards something bigger so that they are avoiding to find out our answer the curiosity by visiting the heritage objects [18]. Based on the result of questionnaires, known that there was not a big difference of the respondents’ opinions of the tourist and local people. The difference is the local people felt that the infrastructure systems was one thing that was still the main attraction but not to foreign tourists (Table 1).

| Disaster Tourism Variables | Indicator                                      | Respondents          |
|----------------------------|------------------------------------------------|----------------------|
| Education                  | Product                                        | 3.60                 |
|                            | Process                                        | 3.59                 |
|                            | Function                                       | 3.52                 |
| Social                     | Infrastructure system                           | 3.60                 |
| Economic                   | Promotion and development program              | 3.47                 |
|                            | Economic stimulus                              | 3.39                 |
| Uniqueness                 | Main facilities                                | 3.55                 |
|                            | Supporting facilities                          | 3.38                 |
|                            | Linkage with another Tsunami tour              | 3.64                 |
| **Total Mean**             | **3.54**                                      | **3.50**             |

5. Discussion and Analysis

5.1. Knowledge of disaster tourism
In the observation, the researcher see the concept of demonstration that serves as a source of information that conveys a message to the community about the Aceh Tsunami disaster; the PLTD Apung ship was dragged to the mainland; Photo reconstruction of PLTD Apung ship; smong Simeulue; rumoh Aceh; Tsunami sequence simulation; Tsunami early warning system; thanks to the world; Earthquake & Tsunami disaster mitigation, and Dreams and hopes of the people of Aceh. This demonstration space is inside the granary (Figure 4) and consists of two-level divided into 11 zones. Inside the interior of the ship, there is a ship's engine room, operational room, laundry room, boat kitchen, recreation room, head officer and crew room which functioned as an object gallery, work documents, personal documents, photographs, clothing and life equipment of workers in the PLTD Apung ship. Based on the theory study, tourists are motivated by the search for new experiences or adventure to gain knowledge and understand something unknown before [19].
Based on the results of questionnaire data analysis on the local communities (Table 2), with a mean total value of 3.58 for the declarative variable on disaster tourism variables, local communities agree that information and facilities on disaster tourism can be stored in their memories. The information and facilities gained by local people from disaster tourism are useful and usable, it can be seen on the total mean value of 3.61 on the result of the procedural variable on disaster tourism variables. Meanwhile, for the total mean value of the strategic variable on disaster tourism variables, has a value of 3.54 which indicates that local communities can understand about “how”, “when”, and “why” about information and facilities in the disaster tourism.

Likewise, with the results of questionnaire data analysis on the tourist (Table 2), the information and facilities about disaster tourism can be stored in their memories, that obtained from a mean total value of 3.52 for the result of a declarative variable on disaster tourism variable. The value of a mean total of procedural variable toward to disaster tourism variable is amount 3.48, explained that information and facilities that tourists get about disaster tourism are useful and usable. On strategic variable toward to disaster tourism variable, tourist can understand about “how”, “when” and “why” on existing information and facilities in disaster tourism, with the value of the mean total amount of 3.44. Therefore, knowledge about disaster tourism possessed by local communities and tourist is likely can be obtained by observation, through the concept of demonstration as the main facilities on disaster tourism, which can be a new insight to provide understanding and awareness of natural disaster. With the result that, they will recognize the stunning Tsunami disaster and also increase their knowledge and ability for preventing and handling disasters.
5.2. Needs of disaster tourism

Regarding of disaster tourism, not all of people need to travel to the disaster area. After Tsunami disaster in Phuket, some people are avoiding the areas that affected by disasters, it caused by risk and perceived belief and bad luck [20]. Needs is a desire of society to obtain and consume the stuff and services [21]. In the service business that includes tourism business, quality of services refers to focusing to meet customer needs [22]. Based on the results data analysis of questionnaire on the local communities (Table 3), show that quality of services on information and facilities that presented can meet the expectations of the local communities, with the value of the mean total amount of 3.42 for the quality of services variable. The value on mean at the main facilities is the highest score with a value of 3.55; it means that services can meet the expectations of the local communities. The quality of services that served by economic agents in Tsunami disaster tourism is lowest within 3.26.

| Disaster Tourism Variables | Perception Variables | Needs Indicator | Quality of Services |
|---------------------------|----------------------|----------------|-------------------|
|                           |                      |                | (1)               | (2)               |
| Education                 | Product              | 3.42           | 3.21              |
|                           | Process              | 3.40           | 3.43              |
|                           | Function             | 3.43           | 3.40              |
| Social                    | Infrastructure system| 3.50           | 3.36              |
| Economic                  | Promotion and development program | 3.40 | 3.39 |
|                           | Economic stimulus    | 3.26           | 3.25              |
| Uniqueness                | Main facilities      | 3.55           | 3.53              |
|                           | Supporting facilities| 3.32           | 3.44              |
|                           | Linkage with another Tsunami tour | 3.50 | 3.51 |
| **Total Mean**            |                      | **3.42**       | **3.39**          |

Furthermore, the results data analysis of questionnaire on the tourist (Table 3), show the value of 3.39 for a quality of services variable on disaster tourism variable, tourist agrees that the quality of services on information and facilities that presented can meet their expectations. The existing services on main facilities can meet their expectations too; it shows the value of a mean is the amount of 3.53. Otherwise, the total value of mean on economic stimulus is low, it is the amount by 3.25, that the economic agent does not provide quality of service which can meet their expectations. Therefore, the need for disaster tourism owned by local communities and tourist is to be had by a quality of services from existing facilities. Based on analysis on the result of the questionnaire, every tourist and local community that visited disaster tourism is supported by excellent service. So, they will get the positive things from their tour.

5.3. Interest and motivation of disaster tourism

The tourists are motivated by the search for new experiences or adventure to gain knowledge and understand something unknown before [19]. Interest is the attitude of one's soul that is fixed on a particular object of the three (cognition, conjunction, and emotion) and in that relationship the strongest element of feeling [11]. Based on the results of the questionnaire on the purpose of the community and tourists visiting the Tsunami site, as many as 49.1% of local communities and tourists visit the disaster tourism site with the aim to enjoy the facilities, the next 34% of local communities and tourists come to commemorate the Tsunami. Only 1.9% of local communities and tourists are interested in shopping souvenirs and enjoying typical Aceh snacks. Local communities and tourists are interested to visit Tsunami disaster sites with the availability of facilities that meet their needs. Existing facilities are expected to provide new experiences and knowledge about the disaster to the public and tourists. Based on the results data analysis of questionnaire on the local communities (Table 3), the known variable toward to the disaster tourism variables obtained the total mean value of 3.44, it shows that knowledge and information about disaster tourism according to his interests. Then on the feel variable toward to the disaster tourism variables, local communities are happy with the information about disaster tourism they get, this is indicated by the mean total value of 3.53. With the
The total mean value of 3.65 for the desired variable toward to the disaster tourism variables, indicates that the local communities are interested to know more information and facilities on the Tsunami site.

Table 4. Mean value of local communities (1) and tourists (2) respondents on interest and motivation variables

| Disaster Tourism Variables | Perception Variables | Interest and Motivation |
|----------------------------|----------------------|-------------------------|
|                            | Indicator            | Know (1) | Feel (2) | Desire (1) | Desire (2) |
| Education                  |                      | 3.37 | 3.42 | 3.66 | 3.55 | 3.80 | 3.89 |
|                            |                      | 3.52 | 3.49 | 3.58 | 3.62 | 3.81 | 3.65 |
|                            |                      | 3.43 | 3.51 | 3.52 | 3.57 | 3.65 | 3.71 |
| Social                     |                      | 3.63 | 3.50 | 3.58 | 3.64 | 3.63 | 3.53 |
| Economic                   |                      | 3.40 | 3.36 | 3.52 | 3.47 | 3.63 | 3.47 |
|                            |                      | 3.26 | 3.33 | 3.30 | 3.36 | 3.48 | 3.36 |
| Uniqueness                 |                      | 3.57 | 3.53 | 3.60 | 3.61 | 3.75 | 3.67 |
|                            |                      | 3.28 | 3.53 | 3.35 | 3.47 | 3.42 | 3.61 |
|                            |                      | 3.50 | 3.65 | 3.67 | 3.62 | 3.67 | 3.76 |
| Total Mean                 |                      | 3.44 | 3.48 | 3.53 | 3.54 | 3.65 | 3.63 |

The results of data analysis on a questionnaire of tourists (Table 4), with a mean value of 3.48 for know variable toward to the disaster tourism variables, shows that knowledge and information about disaster tourism are according to their interests. In the feel variable toward the disaster tourism variables, obtained the total mean value of 3.54, it explains that the tourists are happy with the information about disaster tours that they get it. Meanwhile, based on the total mean value of 3.63 on the desired variable to the disaster tourism variables, this means that tourists are interested to know more information about disaster tourism. Therefore, the existing facilities in the disaster tourism can be referred as a media for preserving the history of disaster, because the vehicle is something of interest by the local communities and tourists, especially in the preservation of disaster events containing different perspectives. The interest and motivation of the local communities and tourists towards disaster tourism focus on the knowledge and information about the disaster presented in the disaster tourism facility.

5.4. Assumption of disaster tourism

The level of satisfaction has been found to be a result of the comparison between expectations and experience [12]. When experience is compared to expected outcomes in a feeling of satisfaction, the traveler is satisfied and leaves a tourist attraction with good memories [22]. Satisfaction of local communities and tourists to enjoy the facilities that exist in the tourism becomes an important component for the object of tourism. It is derived from the assessment of their experience. Based on the results of data analysis of the questionnaire on the community (Table 5), on the experience variables on disaster tourism variables, obtained the total mean value of 3.52, it shows that the local communities managed to gain experience based on their expectations. The mean value of 3.62 from the experience variables on the component of the linkage with the other Tsunami Tour is the highest category, while the mean value of 3.32 from the experience variables to the supporting facilities component is the lowest. Local communities tend to get more experience from the Tsunami site in addition to the site of this PLTD Apung ship; they have not fully gained experience from the existing support facilities on board.
Table 5. Mean value of local communities (1) and tourists (2) respondents on assumption variables.

| Disaster Tourism Variables | Perception Variables | Assumption Indicator | Experience (1) | Experience (2) |
|----------------------------|-----------------------|----------------------|----------------|----------------|
| Education                  | Product               | 3.60                 | 3.47           |
|                            | Process               | 3.55                 | 3.68           |
|                            | Function              | 3.56                 | 3.71           |
| Social                     | Infrastructure system | 3.63                 | 3.53           |
| Economic                   | Promotion and development program | 3.42 | 3.39 |
|                            | Economic stimulus     | 3.39                 | 3.39           |
| Uniqueness                 | Main facilities       | 3.55                 | 3.67           |
|                            | Supporting facilities | 3.32                 | 3.50           |
|                            | Linkage with another Tsunami tour | 3.62 | 3.65 |
| Total Mean                 |                       | 3.52                 | 3.55           |

The results of the analysis of questionnaires data on tourists (Table 5) shows that the experience gained from tourists to disaster-forming components based on their expectations, it can be seen from the total mean value of 3.55. The mean value of the function demonstration variable is the highest value with a value of 3.71, this means that the experience gained by tourists while enjoying the functional display is in line with their expectations. The experience gained from economic variables is low with a mean value of 3.39. Thus, the experience of enjoying a disaster tourism facility can be a component to shape the unity of this disaster tour. By visiting the Tsunami site, local communities and tourists gain new knowledge-related experiences and also understand something they did not know about the Tsunami.

6. Conclusions
A disaster tourism has the own uniqueness than the other tourism, because there is a history of physical objects of disaster relics, it can be a source of knowledge and learning for its users. It can be a reminder of the impacts of the major disaster. The most prominent aspects are education element that can be a selling value from this tourist destination. Perception can be a disaster tourism assessment, which consists of knowledge, needs, interests, and assumptions. The success of disaster tourism is also like heritage tourism that partly affected by tourists’ perception about the place identity to create attraction and satisfaction [23]. The knowledge of disaster tourism is obtained from observation. In particular, the concept of modeling that can open the insight to provide understanding and awareness of natural disasters. Furthermore, the needs of disaster tourism obtained from the quality of service that presented by facilities and infrastructure in disaster tourism. The interests focused on the presentation of information and knowledge about the disaster, especially Earthquake and Tsunami disaster. The interest in economic facilities, such as souvenir center and typical culinary of Aceh, still needs to be improved, it can improve the welfare of local communities. And then, the assumptions are formed from the experience of enjoying the facilities that available on sites become an important component to build this disaster tourism. The components in the disaster tour are important to be maintained and improved quality; in order to have a positive impact on the welfare of local communities and provide learning for who still blind about earthquake and tsunami disaster at once.

Also, research suggests improving the quality of services from economic facilities immediately. Researchers suggest for further research how to increase the existing economy of this research area. The economy will become an asset to develop activities on disaster tourism site; it will be an effect on the local people prosperity.
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