

## **LOCAL COMMUNITY INVOLVEMENT IN GEOTOURISM HIKING IN KAMPUNG KINIRASAN, RANAU, SABAH**

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### **ABSTRACT**

Geotourism is a form of sustainable tourism that focuses on the knowledge of the geological features of the earth by encouraging understanding, appreciation and conservation of the environment and culture as well as providing benefits to the local community. It was created to improve the well-being and standard of living of the local community through involvement in tourism while preserving the local environment, culture and heritage. This study was conducted to examine the level of readiness, acceptance and involvement of the local community in geotourism-hiking project around Bukit Balingkadus, Kampung Kinirasan, Ranau. Quantitative research is done by distributing questionnaires to the respondents. The results of the analysis showed that the local community is ready to get involved in the geotourism-hiking project. Incentives and returns earned will encourage their enthusiasm to be actively involved in this project. The project is also seen to be able to open new employment opportunities and raising the living standards of the local community. Cooperation between all parties is essential in order to achieve the sustainable development objectives of the geotourism-hiking project carried out. Further studies need to be conducted in the future.

**Keywords:** local community involvement, geotourism, geopark, hiking, sustainable development

### **1.0 INTRODUCTION**

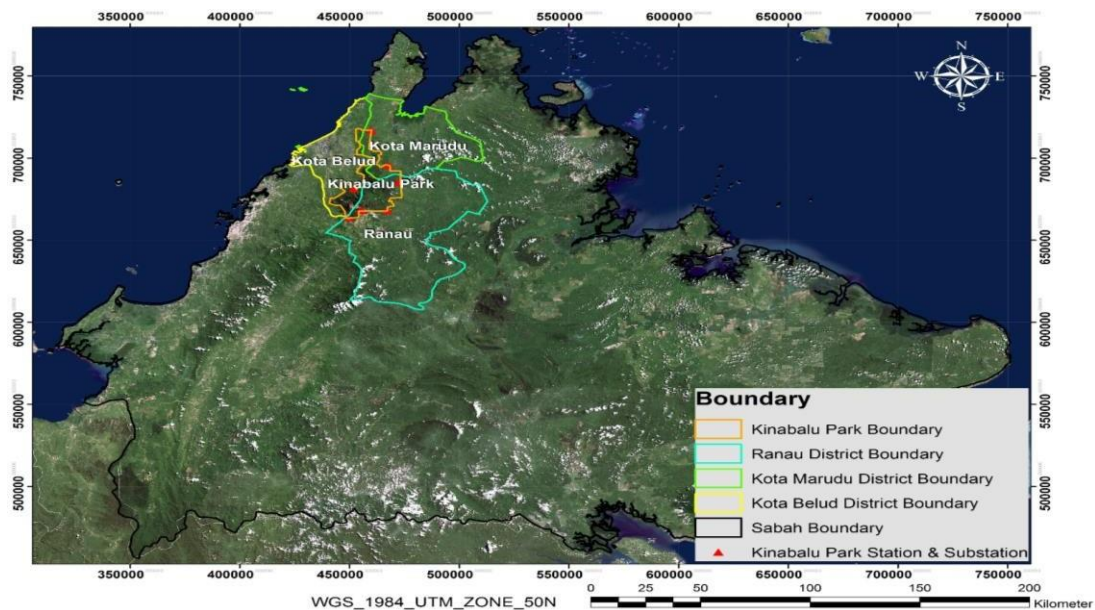
The tourism industry is the third largest in Sabah and one of the important revenue generators that opens more than 80,000 jobs to locals. The number of tourist arrivals in 2018 reported the highest record of 3,879 million visitors with a historical revenue generation of RM8.342 billion, according to the Sabah Tourism Board. Of that amount, tourist arrivals have increased by 5.3 per cent throughout 2018 and tourism revenue has also increased by 6.6 per cent compared to revenue collection of RM7.82 billion in 2017 (Emjus, 2019). As Malaysia's first World Heritage Site, the presence of Kinabalu National Park makes Ranau a hotspot for domestic and international visitors. Located in Kundasang, Mount Kinabalu is 4,095.2 metres high and was designated a World Heritage Site by UNESCO in December 2000. There are several other places of interest around Ranau such as Poring Hot Spring, Luant River, the Prisoners of War (POW) Monument near Sidang Injil Borneo (SIB) church, the Last Prisoners of War POW Monument in Piolungan, War Memorial in Kundasang and Cattle Village Kundasang. In addition to water rafting, snorkeling, scuba diving, paragliding, island hopping and jungle trekking, hiking activities are also becoming increasingly popular among the local community around Sabah. To date, there are more than 20 hills around the state that can be visited by hiking enthusiasts.

The general objective of this study is to assess the potential of geotourism-hiking project at Bukit Balingkadus, Kampung Kinirasan and its connection to the involvement of local communities in the context of geopark. Geotourism is generally created to improve the well-being and living standards of local communities through participation and involvement in tourism, while protecting and conserving their environment, culture and heritage. Kampung Kinirasan located in Ranau district, was chosen as the study area due to accessibility factors and willingness of the local community to be involved in the geotourism-hiking project that will be carried out. The study location is also within the proposed geopark area which has several attractions that can be used as geotourism products such as Sungai Kenipir (geological attraction) and the Second Prisoners of War (POW) Camp at Piolungan, Kampung Kenipir (cultural attraction). The area has national and international geological heritage sites and local community that values natural heritage that is suitable for development as a leading geotourism destination, especially from a domestic tourism perspective (Komoo, 2017).

## 2.0 METHODOLOGY

### 2.1 Study Area

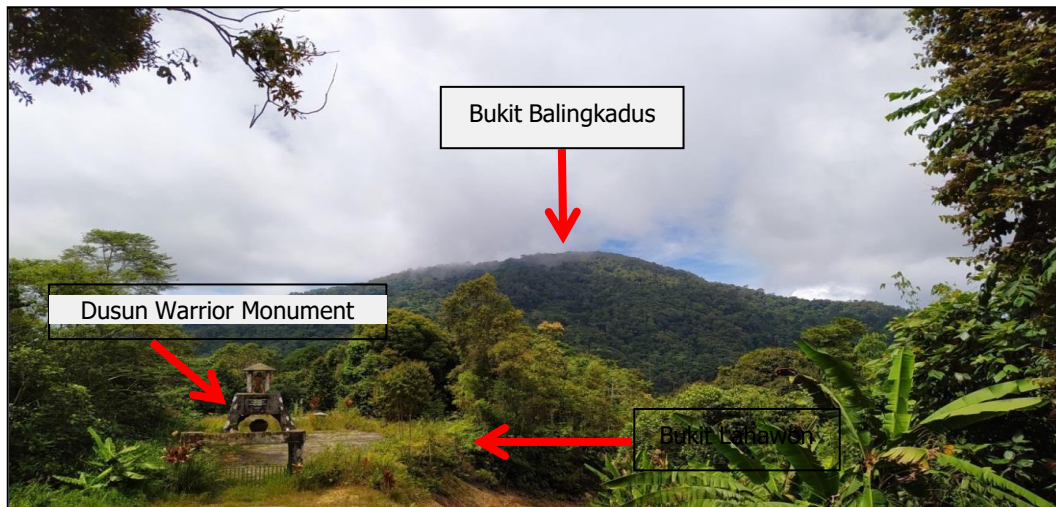
The proposed Kinabalu Geopark, a UNESCO World Heritage Site with an area of 75,370 hectares, dubbed the 'Aspiring Kinabalu Geopark,' covers the entire Kinabalu Park area and all or part of the Ranau, Kota Belud and Kota Marudu districts. There are some selected geosites that have been visited by the National Geopark Committee in Ranau district, including Lautan Kuno, Sungai Kenipir, Dataran Pinousuk, Botanical Garden and the Last Prisoners of War Camp at Piolungan, Kampung Kenipir. Figure 1 shows the proposed Kinabalu Geopark area covering the three districts involved.



**Figure 1.** Map of the geopark research area (Ranau, Kota Belud & Kota Marudu).

For this study, we selected Bukit Balingkadus, which is located in Kampung Kinirasan, about 15 kilometres from the town of Ranau, 7 kilometres from Sungai Kenipir and 8 kilometres from the Last POW Camp in Piolungan, Kampung Kenipir. In 2012, Bukit Balingkadus was classified by the Sabah Forestry Department as a First Class Forest Reserve under the Forestry Act 2012. This place is ideal for hiking and jungle trekking activities. In addition, tourists can also see rare wild plants such as Rafflesia flowers (*Rafflesia Arnoldii*), also known as Corpse Lily, pitcher plant, orchids and wild animals.

Bukit Lahawon, located near Bukit Balingkadus, also has the Dusun Warriors Monument and is one of the attractions of Kampung Kinirasan because of its unique historical value. Figure 2 shows the study area located in Kampung Kinirasan, namely Bukit Balingkadus and Bukit Lahawon.



**Figure 2.** The view of Bukit Balingkadus and the Dusun Warriors Monument at Bukit Lahawon.

## 2.2 Sample Collection

The first phase of the data collection was conducted using secondary data source of geopark attribute identified by the Department of Mineral and Geoscience Malaysia. The geopark attribute consist of 3 main characteristics of biological, cultural, and geological. Then interviews with the local households and key informants were conducted on the 26th of February 2020 using convenient sampling techniques. The total number of respondents were 33 respondents. The population of the study area is estimated to be between 300 to 500 people.

## 2.3 Instruments and Data Analysis

Quantitative method is used to measure responses for the identified issues. Descriptive statistics analysis were run to analyse the local community's demographic profiles and measure their readiness, acceptance and involvement levels in order to achieve the research objectives. The readiness, acceptance and involvement levels per item were determined using the mean score and standard deviation of each item. The highest mean score indicated the highest level of readiness, acceptance and involvement. A five-point Likert scale (1=strongly disagree, 2=disagree, 3=less agree, 4=agree and 5=strongly agree) was used to measure the local communities' readiness, acceptance and involvement in the geotourism-hiking project in Kampung Kinirasan. This study consists of five parts, namely, respondents' demographics, knowledge of geotourism- hiking, local community readiness, acceptance and involvement, benefits of geotourism-hiking development project, local products potential and suggestions. However, for the purpose of this study, only Part 1 and Part 3 were used containing Part 1: respondents' demographic information with nine items - gender, age, race, religion, marital status, education level, number of household, occupation and monthly income and Part 3: level of readiness, acceptance and involvement of local communities in geotourism-hiking (Timothy, 2002).

This section contains seven questions which are the main constructs to measure the readiness, acceptance and involvement level of the local community in geotourism- hiking project. The questions were constructed based on a review of the literature studies and

statement by Tosun (2006) and Timothy (2002) in their research regarding expected nature of community participation in tourism development and community development issues. It aims to open a much-needed debate on how a participatory approach to tourism development can emerge and in which phases it can go through (Tosun, 2006). Additional questions regarding the location of the 3 geopark attribute was also acquired to identify key attraction in the study area. The data collected from the completed questionnaires were analyzed using Statistical Package for the Social Sciences (SPSS) version 26.

### **3.0 LITERATURE REVIEW**

#### **3.1 Local Community Involvement**

Researchers state that defining the term 'community' is a difficult thing as it involves a wide and varied scale. Generally, a community refers to a group of people who live or inhabit a particular area by sharing cultural customs, ways of life, common interests and so on. The local community is also defined as a population characterized by geographical position (boundaries), local zoning and also the political system (Squires et al., 2002). A healthy community has interdependent relationships, shares the responsibility to recognize and solve problems and improve its well-being. To address complex issues, communities need integration, collaboration, and coordination of resources from all divisions (Thompson & Kinne, 1999). An in-depth understanding of community concepts can help understand their norms, values, behaviors and motivations to accept and be involved in this project. In the context of Ranau District, the local community that inhabits the study area, will be the main focus.

Local community readiness, acceptance and involvement is one of the important aspects in geotourism-hiking project that focus on improving the living standards of those involved. The purpose of this study is to understand the community's readiness, acceptance and involvement in heritage, nature and culture conservation through geopark, as a regional development tool. Community acceptance is defined as the process of working together or through groups of people within a geographical distance, special interests or similar situation to address issues that affect the well-being of community members. Often it involves partnerships and affiliations that help to mobilize resources and systems of influence, to change relationships between community members and to serve as catalysts for policy, program and practice change (McCloskey et al., 2013).

Community involvement in the decision-making stage will further increase their trust and confidence in the tourism industry (Yabes, 2000). Niezgodna & Czernek (2008) stated that tourism development that does not go through discussions with the local community at the design stage, will complicate community involvement at the implementation stage of any tourism development. Figgis & Bushell (2009) argue that it is considered illegal if the development and sustainability of tourism carried out denies the local community's rights and interests. Past studies have contributed to the general recognition that local communities are essential stakeholders whose interests need to be considered in order to prevent conflict in the integrative management of natural resources (Lassila, 2018). It is therefore critical that the level of adequate local community participation in geotourism-hiking projects in Kampung Kinirasan is measured and evaluated in order to deter conflict and discrimination, as well as to achieve the objective of economic and social balance for all parties involved.

Indicators for local community involvement and the success of tourism development project include community development, infrastructure development in the area and appropriate and sustainable development practices (Goeldner & Ritchie, 2011). Through

collective involvement, the community will go through a process of social learning, foster a sense of responsibility for nature conservation, promote self-reliance and empower community members through the provision of various forms of assistance and services in geotourism-hiking development project.

### **3.2 Geotourism and Geopark**

Geotourism is sustainable tourism with a primary focus on experiencing the geological features of the earth in a way that promotes understanding, appreciation and conservation of the environment and culture, and is beneficial locally (Dowling, 2014). One of the most widely used definitions of geotourism over the past two decades is from National Geographic which defines geotourism as "tourism that preserves or enhances the geographical features of the place visited including the environment, culture, aesthetic values, local heritage and well-being of its inhabitants" (National Geographic, 2012). The geotourism concept introduced in the early 1990s aims to conserve geological and geomorphological heritage by promoting it to tourists (Hose et al., 2011) and also provides interpretation center and services to enable tourists acquire knowledge and understanding of the geology and geomorphology of an area (Mather, 2018). Geotourism is one of the main activities of geoparks, and often other protected areas, sometimes combined with educational activities as an appropriate form of local economic growth and an important source of income for local communities (Farsani et al., 2011).

The term geopark was introduced by UNESCO in 2001 with an approach that combines conservation with sustainable development while involving the local community (UNESCO, 2018), becoming increasingly popular around the world with 147 UNESCO Global Geoparks in 41 countries. Langkawi Island, Kedah is the first international geopark in Southeast Asia and the 52nd in the world, recognized by UNESCO in 2007 for its natural beauty, ecological, archaeological, geological and cultural heritage. According to the UNESCO (2016) concept of geopark, the ideal type of management is participative management, also known as a bottom-up approach that allows the local community to cooperate and participate in the tourism planning and development. Based on the geopark development framework (UNESCO, 2018), there are three main elements in a geopark;

a. Heritage conservation - includes geological, biological and cultural heritage conservation that integrates the preservation of cultural heritage and nature, making full use of natural resources sustainably without destroying them.

b. Economic development - balancing mass and specialized tourism, geotourism as education-based tourism and innovative tourism products.

c. Community development - emphasizes the concept of community as a key player, capacity building of the local community, heritage education and strengthening shared values between the community members.

### **3.3 Hiking**

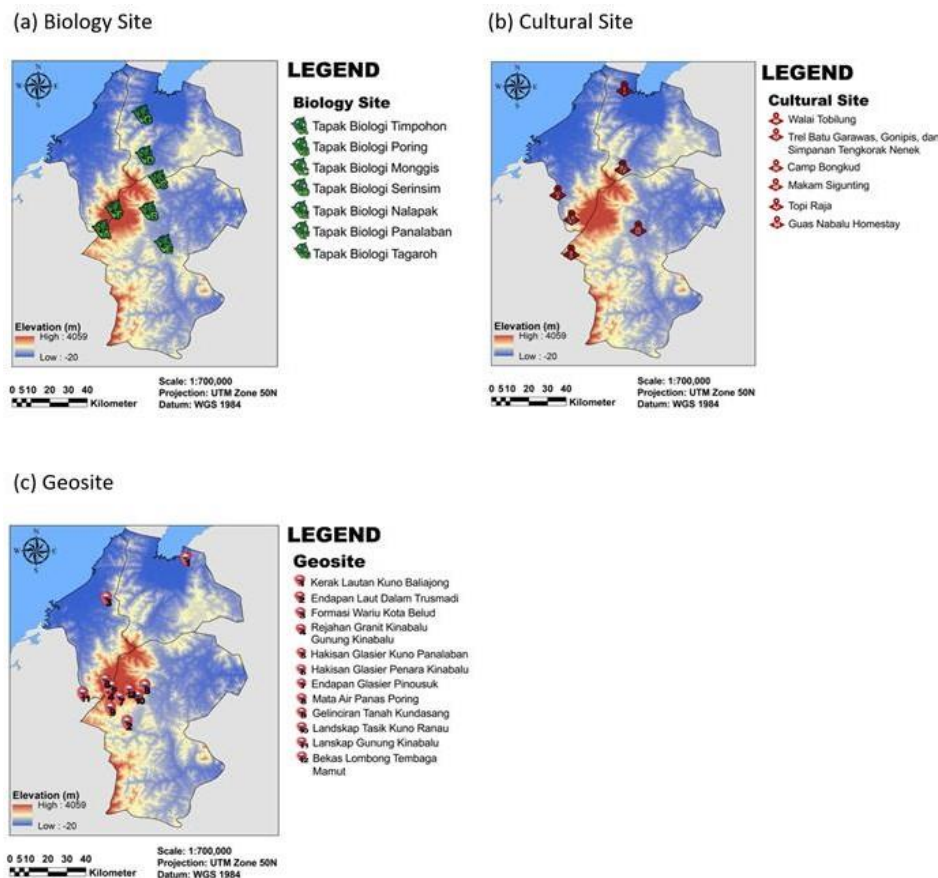
Hiking is one of the largest segments of the tourism industry (Chhetri et al., 2004) which involves short trips or even days to natural landscapes in rural areas (Nordbø et al., 2014) with the aim of improving quality of life, tranquility and closeness to nature (Fleischer & Pizam, 1997). Hiking trails, scenic routes and heritage walks have gained tremendous popularity and are well known as tourist attractions and outdoor recreation (Timothy & Boyd, 2015). According to Paunović & Jovanović (2017), 10% of tourist hot spots worldwide are in mountainous areas. Hiking or trekking can be divided into several types of categories, depending on the shape of the terrain and altitude namely;

- a) easy trails
- b) nature/culture trails
- c) high mountain trails
- d) pilgrimage routes

Previous studies have found that recreation carried out in the form of hiking in mountainous and hilly areas has to do with the recovery experienced by tourists during hiking activities (Wöran & Arnberger, 2012). Sturm et al. (2012) in a journal entitled "Physical Exercise Through Mountain Hiking in High-risk Suicide Patients: A Randomized Crossover Trial", showed that hiking activities have a positive effect on the mental and psychological of an individual who has a high level of suicide risk, which is an increase in recovery in terms of feelings of hopelessness, depression and suicide. Nature is often associated with serenity and peace, an believed to improve an individual's mental, psychological and even physical condition. Tourist experience in the natural area will further enhance the sense of responsibility for nature conservation. The relationship between the direct and indirect recreational effects of routes (tracks) with the loss of forests and tree structures was discussed by researchers such as Pickering & Norman (2017) and highlighted the importance of careful planning of management options when managing routes, particularly in areas with high conservation values.

#### 4.0 FINDING AND DISCUSSION

Mapping of the identified geopark attributes of biological, cultural and geological is presented in Figure 3. Validity and reliability tests in the pilot study were conducted using a sample of questionnaire study instruments similar to the actual instrument sample. The reliability test score of Cronbach's Alpha for this test is 0.913 which corresponds to the validity and reliability of the instrument. This shows that the instruments used have high validity and reliability and produce more accurate and reliable data.



**Figure 3.** Locations identified as the geopark attractions for (a) biological, (b) cultural, and (c) geosite attribute.

Table 1 depicts the respondents' profile. Among the 33 respondents, 45.5 percent were male and 54.5 percent were female. In terms of age, majority of the respondents (45.5 percent) were 30 to 39 years old, 27.3 percent were 40 to 49 years old, 12.1 percent

were 20 to 29 years old and 50 to 59 years old, and 12.1 percent were 60 years old and above. Majority of the respondents who participated were Dusun and Christian with a frequency of 100 percent respectively. A total of 57.6 percent of the respondents who participated in the questionnaire are married whereas 42.4 percent are still single. As shown in the Table 1, there are 2.1 percent who have a total household of 1-3 people or have the lowest membership in the family. There are 36.4 percent of respondents who have households in the range of 4-6 people and 7-9 people. Respondents who have a number of households of 10-12 people are 6.1 percent and for households 13-15 people are a total of 9.1 percent.

In terms of educational background, most of the respondents with a total of 96.9 percent underwent formal education, whereas 3.0 percent did not obtain any prior formal education. Respondents working as housewives recorded the highest percentage of 27.3 percent, respondents with other occupation were 24.2 percent, farmers (21.2 percent), 15.2 percent worked in the government sector and 12.1 percent were involved in the private sector. The highest percentage of respondents earning below RM900 is 66.7 percent whereas 18.2 percent earn between RM1,000- RM1,999, followed by 6.1 percent for respondents with monthly income of RM2,000- RM2,999 and RM3,000-3,999, respectively. Respondents with an income of RM4,000 and above is 3.0 percent.

**Table 1.** Respondents' demographic profiles.

<b>Demographic</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentage</b>
Gender	Male	15	45.5
	Female	18	54.5
Age	20-29	4	12.1
	30-39	15	45.5
	40-49	9	27.3
	50-59	4	12.1
	60-69	1	3.0
	Race	Dusun	33
Religion	Christian	33	100.0
Marital status	Single	14	42.4
	Married	19	57.6
Number of household	1-3 person	4	12.1
	4-6 person	12	36.4
	7-9 person	12	36.4
	10-12 person	2	6.1
	13-15 person	3	9.1
	Educational	No formal education	1
UPSR		2	6.1
PMR/SRP		4	12.1
SPM/SPMV		8	24.2
STPM/Diploma/ Matriculation/Certificate		11	33.3
Degree		3	9.1
Others		4	12.1
Employment		Civil servant	5
	Private Sector	4	12.1
	Farmer	7	21.2
	Housewife	9	27.3

Others	8	24.2
RM 900 and below	22	66.7
RM1,000-RM1,999	6	18.2
RM2,000-RM2,999	2	6.1
RM3,000-RM3,999	2	6.1
RM 4,000 and above	1	3.0

The local community's readiness, acceptance and involvement in geotourism-hiking project is depicted in Table 2. Seven questions were asked to evaluate the respondents' opinions about local community readiness, acceptance and involvement in the geotourism-hiking project.

**Table 2.** Descriptive analysis of readiness, acceptance and involvement of local communities in geotourism-hiking project.

I'm ready to get involved in the geotourism-hiking project				
	Frequency	Percent	Mean	Std. Deviation
Slightly disagree	2	6.1		
Agree	13	39.4		
Strongly agree	18	54.5	4.48	0.62
Total	33	100.0		
I want to be involved in the planning process for the geotourism-hiking development in this village				
	Frequency	Percent	Mean	Std. Deviation
Totally disagree	1	3.0		
Slightly disagree	1	3.0		
Agree	12	36.4	4.48	0.71
Strongly agree	19	57.6		
Total	33	100.0		
I would like to get involved in any discussions on the geotourism-hiking projects being carried out in this village				
	Frequency	Percent	Mean	Std. Deviation
Slightly disagree	1	3.0		
Agree	17	51.5		
Strongly agree	15	45.5	4.42	0.56
Total	33	100.0		
I am ready to get involved in the geotourism-hiking project for a long time				
	Frequency	Percent	Mean	Std. Deviation
Slightly disagree	3	9.1		
Agree	17	51.5		
Strongly agree	13	39.4	4.30	0.63
Total	33	100.0		



I like the presence of visitors / tourists in this place				
	Frequency	Percent	Mean	Std. Deviation
Slightly disagree	1	3.0		
Agree	14	42.4		
Strongly agree	18	54.5	4.51	0.57
Total	33	100.0		

I am ready to cooperate with the government, private bodies and tourism operators to develop geotourism-hiking in this village				
	Frequency	Percent	Mean	Std. Deviation
Slightly disagree	1	3.0		
Agree	13	39.4		
Strongly agree	19	57.6	4.55	0.56
Total	33	100.0		

I would like to make a full commitment in the geotourism-hiking project in this village				
	Frequency	Percent	Mean	Std. Deviation
Slightly disagree	1	3.0		
Agree	17	51.5		
Strongly agree	15	45.5	4.42	0.56
Total	33	100.0		

Overall, the mean scores for the variables are above 4, suggesting strong agreement with these statements. The first item was the readiness to get involved in the geotourism-hiking project and the mean score was 4.48 with a standard deviation of 0.62 which suggesting that the local community is interested in the project. More than fifty percent (54.5 percent) respondents strongly agreed that they are ready to get involved in the project, 39.4 percent agreed whereas 6.1 percent slightly disagreed with this statement.

Majority of the respondents responded positively and showed interest in getting involved in geotourism-hiking planning process with 57.6 percent strongly agreed and 36.4 percent agreed with this statement whereas a number of totally disagreed and slightly disagree responses were both scored 3.0 percent. As shown in the Table 2, the mean value of 4.48 and standard deviation 0.71 of this response were high. The negative responses received may be due to the lack of information or knowledge about geotourism-hiking, having other commitments, no time to get involved, not interested and age factor. Bonadonna et al. (2017) describe that the transformation of tourism development in the most popular tourism destination is due to the active involvement of the local community.

Based on the descriptive analysis, the willingness of local community to get involved in the discussions regarding the geotourism-hiking project, obtained high mean score with 4.42 and standard deviation 0.56, and therefore considered to have the support of the local community. More than fifty percent (51.5 percent) of the respondents want to involve in the project discussion with 45.5 percent of them agreed to involve whereas 3.0 percent do not want to get involved. Community involvement in decision-making practices is not only realistic, but also ethical and important to protect the natural and cultural heritage of protected areas and this idea was supported by Ross & Wall (1999) that the community's tourism vision, objectives, goals and action plans, as well as the

principles of sustainable tourism development, must guide the selection of what should be monitored in tourism planning and development.

A total of 52.5 percent of the 33 respondents stated that they agreed to be involved in long-term geotourism-hiking project. A total of 39.4 percent of respondents also strongly agreed and only 9.1 percent disagreed to get involved. The findings showed that most of the respondents are prepared to involve in a long-term geotourism-hiking project because they feel that this project will be one of their side income sources. The benefits of rural tourism include the generation of income and employment, the creation of a market for local products and vitalization of traditional economies (Ghaderi and Henderson, 2012). There are respondents, however, who do not want to participate in this project because they already have a permanent job and live outside the area.

Table 2 also showed the willingness of the local community to accept visitors (tourists) to visit this place. The mean and standard deviation scores are 4.51 and 0.57 which indicating the positive response is high. In this item, 54.5 percent respondents highly agreed that they like the presence of visitors in this place and 42.4 percent agree whereas 3.0 percent slightly disagree with this statement. The opportunity given to local communities to be actively involved in the of tourism planning and development are most likely provide positive response to accept outside visitors to this area. This findings supported the previous studies conducted by Thongma et al. (2011) who stated that local community involvement has been an important instrument in the successful growth of rural tourism because locals establish a strong relationship with tourists and impress visitors with local cultural activities.

The findings showed that local community is willing to cooperate with the government sectors, private bodies and tourism operators with majority of them strongly agreed (57.6 percent), 39.4 percent of them agreed whereas 3.0 percent slightly disagreed with this statement. The high level of willingness to cooperate is shown by the mean and standard deviation scores of 4.55 and 0.56, respectively. The cooperation and collaboration will not only provide an opportunity for exchange of knowledge but also encourage the local to participate in geotourism-hiking project which can create more profitable and stronger position in the tourism industry. Therefore, stakeholders should be transparent and accountable for any planning or development in the area. Local authorities are responsible and play an important role in having better plans in helping to improve the tourism sector economically (Khadar et al., 2012).

Over fifty percent (51.5 percent) respondents strongly agreed and 45.5 percent agreed whereas 3.0 percent slightly disagree to make full commitment in the geotourism-hiking project in this village. The mean scores of 4.42 and standard deviation 0.56 showed strong support to the geotourism-hiking development project. Respondents' personal views and opinions on the benefits of their involvement in geotourism-hiking development greatly influence their desire to get involved in the development process. Most respondents agreed that their participation in this project will generate new business opportunities and increase economic impacts on tourism growth (Andereck et al., 2005).

Overall, the local community in Kampung Kinirasan responded positively and showed interest in getting involved in geotourism-hiking planning, discussion and development even though a small number seemed to be passive. This may be due to lack of information or knowledge about geotourism-hiking, having other commitments, no time to get involved, not interested, age factor and living in another area. The results showed that local communities want to play an active role and are prepared to engage

in the long-term geotourism-hiking project as long as their participation increases their living standards. The involvement of the local community in tourism development is significant (Goeldner & Ritchie, 2011) for the sustainability and long-term success of the tourism sector (Diedrich & Garcí'a-Buades, 2008).

## **5.0 CONCLUSION**

The findings of this research indicate that the level of readiness, acceptance and involvement of local community in geotourism-hiking project usually depends on the individual needs, motivation, expectation and beliefs. Most respondents feel that they need to be involved in geotourism-hiking development project, especially at the decision-making stage as well as in initial planning because they want the knowledge and expertise to be channeled to every member of the community. Community members who are well-trained in decision-making and implementation can, as project managers and operators, enhance their capacity to consistently manage geotourism-hiking project in the future without direct external intervention. Local community involvement can only be considered successful if geotourism-hiking project is beneficial (economic/social) to the local community in the long term and the project is managed (developed) in a sustainable manner.

To see the true level of community involvement in geotourism-hiking, data collection on a larger scale is needed by involving surrounding villages such as Kampung Kepangian and Kampung Narambai as it has a direct connection with the history of the study area. The number of samples selected should also be the same to minimize the bias in the study findings. It is also suggested that the results of the study to be used as an output to those who plan and produce training modules and handbooks so that the training and workshops provided can be carried out more effectively in accordance with the needs and requirements of geotourism-hiking development. It is also proposed that aspects of indicators, including community development, infrastructure development for the area, appropriate and sustainable development practices, should be examined in detail in the future. In the context of Ranau, the outcome of the study may help to provide a better understanding of geotourism-hiking and provides a benchmark that can be used in future studies.

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