

## TYOLOGIES OF TOURISM VISITS TO MOUNTAIN DESTINATIONS. A CASE STUDY: MOUNT LAWU AREA, KARANGANYAR REGENCY, INDONESIA

Istijabatul ALIYAH\* 

Sebelas Maret University, Faculty of Engineering, Department of Regional  
and Urban Planning, Surakarta, Indonesia, e-mail: istijabatul@ft.uns.ac.id

Rara SUGIARTI 

Sebelas Maret University, Institute for Research and Community Service, Center for Research  
and Development of Tourism and Culture, Surakarta, Indonesia, e-mail: rarasugiarti@staff.uns.ac.id

Galing YUDANA 

Sebelas Maret University, Institute for Research and Community Service, Department  
of Urban and Regional Pplanning Surakarta, Indonesia, e-mail: galingyudana@staff.uns.ac.id

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**Abstract:** The condition of slopes, climates, weathers as well as natural disasters are variables considered by tourists. The study aimed to analyze typologies of tourism visits on types of tourism destination with slope classification and formulate development and disaster mitigation of tourism area. The location was the Mount Lawu area, Karanganyar Regency. The data were empirical conditions, documents, and spatial. Data collection techniques were field observations, document viewing, mapping, and interview. Data analysis were carried out in five steps. The results show three typologies of tourism visits in accordance with types of tourism destination based on slope levels. The development and disaster mitigation of tourism areas are conducted “for”, “with”, “by”, and “from” community.

**Key words:** typology, tourism visit, destination, mountain slope, Mount Lawu Area

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### INTRODUCTION

Tourism is one of the major economic sectors in the world. This economic activity is the source of opportunity for a geographical area's social, economic, and cultural modernization (UNWTO, 2021; Croes, 2014). It is one of the economic sectors that is sensitive to climates but contributes to climate change (Alexandra et al., 2016). Tourism industries are vulnerable to some crises or disasters, although many efforts are conducted to prevent and deal with the effects of tourism crises and disasters (Susana and António, 2017). The close relationship between tourism activities, slope conditions as well as climate and weather conditions are variables considered by tourists (Méndez et al., 2014). The weather informed in real-time probably influences tourists' behaviors in selecting a destination and arranging travel plans (Morgan et al., 2000). The conducive climate stimulates most of the tourists to enjoy shopping, nightlife, and indoor activities (Terrasa et al., 2012). Various models of tourism destination development are constantly applied through sustainably managing and promoting cultural, natural, and heritage resources (Mestanza et al., 2021). Moreover, Fatemeh et al. also emphasized that tourism is a sector easily affected by external phenomena, for instance, natural disasters. The characters of mountainous areas are very diverse. As a result, not all natural attractions are suitably developed in mountainous areas (Fatemeh et al., 2018).

Different from nature-based summer activities, since the nineteenth century, the Alps have become a summer tourism destination. In rural areas, the tourism sector is the only means of economic growth (Katarzyna and Marut, 2018). However, previous studies still ignore summer product development in mountainous areas due to the substitution between the widespread tourism destinations, the development of innovative tourism products, and efficient commercialization. This mainly emphasizes mountain tourism destinations' long-term performance and differentiation (Beritelli and Reinhold, 2010; Wu, 2015). In Ecuador, biodiversity is a strategic aspect of promoting sustainable tourism. It is crucial to protect this type of tourism since it promotes social inclusion, employment, and poverty reduction (del Corral et al., 2017; Gavilanes et al., 2021). As a result, it has become more popular in the Amazon region, with a more significant number of tourists visiting national parks, protected areas, unique ecosystems, and their communities. In the Ecuadorian Amazon, tourism develops through three practical applications emphasizing the relationship between conservation and local populations (Barrera et al., 2012). The first refers to the preservation "for" people's welfare. The second model deals with the conservation "with" communities, which are the participation of indigenous communities and communities considered as the subject of a particular conservation action but not the primary decision maker. The third model indicates the conservation "by" people. It considers local communities as a determining factor for preservation (García et al., 2021; Muñoz, 2017; Floris et al., 2020).

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\* Corresponding author

However, in Latin America and the Caribbean, many rural communities have integrated tourism activities into social, productivity, and economic dynamics as an alternative to fight poverty and merge populations of indigenous and mestizo communities (Mosquera et al., 2019; Castillo et al., 2021; Andries et al., 2021; Xiang et al., 2020). This type of tourism has been implemented in rural areas in which local communities, organized collectively, play a participatory role in the development, management, and monitoring, as well as preservation of natural environments, socio-culture (Caputo et al., 2005), and traditional values (Fagundes et al., 2021). These allow for a pleasant and rewarding experience and a reciprocal relationship between local communities and tourists (visitors). The tourism-rural community connection must be characterized by equity in benefit distribution (Xiang et al., 2020; Fun et al., 2014; Zielinski et al., 2020).

In short, this type of tourism, in the last two decades, will increasingly give more significant economic benefits to local communities, portraying an easy and fast strategy for development and poverty fight as well as biodiversity, landscapes, and culture (Maldonado et al., 2020; Cucari et al., 2019). The classification of activities and attractions in least-developed areas stimulates cooperation and partnership between communities in local areas and neighbours, and is beneficial in stimulating economic development through tourism (Briedenhann and Wickens 2004).

Popescu (2008) and Becken (2013) identified altitude, temperature, humidity, and bites from exotic animals and insects as causes of the decline in tourism. The world changed during the attacks in London, Madrid, and New York. Knowledge and disruption of tourism flows are among the factors with severe economic and socio-political impacts on the Gross National Product (GNP) of a country (Kordic et al., 2015). According to Du Plessis et al. (2017), safety and security, as well as the uncertainty of political stability, remain the main factors threatening the South African tourism industry as other tourism destination competitiveness. The safety and security are parts of tourists' demand standards. Therefore, safety and security are the standards that tourists expect based on their experiences and ensuring safety and security for all tourists should become priorities for the government (Porter, 1990). Besides, the 2010 Fédération Internationale de Football Association (FIFA) World Cup gave a chance for South Africa to be the host, and South Africa had succeeded to show the beauty and unique attractions of South Africa as international tourism destinations. However, the study conducted by George and Swart (2012) showed that the security problem in terms of crimes has no influence on tourists' intention to travel in the future, since they desire to come back to South Africa (George and Swart, 2012).

The success or failure of a tourism destination depends on its ability to provide a safe and secure environment for tourists (Ahmed et al., 2010). Aguilo et al. (2003) defined safety as the effect of accidents or destructive forces of nature, such as hurricanes, diseases, and earthquakes, while security involves anthropogenic factors, such as political instability, economic insecurity, terrorist attacks, etc. On the other hand, Ritchie and Crouch (2000) identified some factors reinforcing tourism destinations: location, interdependence, security, awareness/image/brand, and cost/value. Moreover, Ryglova et al. (2015) assumed that a sense of security is the most significant quality factor for a tourism destination. It contains security issues in destination areas, including local security situations and security in terms of health risks, safe, natural conditions, crime rates, and other factors. Thus, Zhou et al. (2015) concluded that safety and security are essential elements in evaluating the competitiveness of tourism destinations. However, the phenomenon in the Mount Lawu area, Karanganyar Regency, Central Java, Indonesia, shows the opposite: many tourists visit the destination on the high slope. Thus, it is necessary to study the typology of tourism areas based on the level of slope, type of tourism, and the tendency of tourist visits, to develop an appropriate model for the study of development and disaster mitigation. The Mount Lawu area, Karanganyar Regency, is the present case study, and the findings will become the basis for the effort to develop and mitigate tourism areas on the slopes of mountains. This is due to the need to integrate biodiversity and socio-economic development of communities, increasingly attracting the attention of actors and managers of conservative areas to realize sustainable development.

## METHODS

This study was conducted in Mount Lawu, Karanganyar Regency, considering that the area has a diversity of tourism types from 49 existing tourist attractions. In addition, the site has slopes with low, medium, and high levels. The scopes of the study were in 2018, 2019, 2020, and 2021. The data were in terms of empirical conditions, document, and spatial. The techniques in data collection included field observation, document viewing, mapping with GIS (Geography Information System), and interviews with all stakeholders related to the management of tourism destinations. This study was conducted with a qualitative spatial approach and aimed to describe the distribution of tourism areas in Mount Lawu, Karanganyar Regency, classify typologies of tourism visits by types of tourism, map the existence of tourism areas according to the level of slope based on its topography, analyze typologies of tourism visits based on types of tourism and their facts as classified with low, medium, and high slopes, and convey efforts to develop tourism and mitigate disasters in the Mount Lawu.

The analysis technique was conducted in five stages as the followings.

1) The first stage was identifying the spatial of tourism destinations through mapping the distribution and classification of tourism destinations by GIS method in the Mount Lawu area, Karanganyar Regency.

2) The second stage was documenting the number of tourism visits between 2018 and 2021. The data were then classified as types of tourism destinations and overlaid with the position of tourism destinations distribution.

3) The third stage was analyzing topographies based on the results of land contour mapping in accordance with the standards of National Agency of Disaster Management, that are low level as many as 100-500 MASL with the slope of 5° - 10°; medium level as many as 500-1000 MASL with the slope of 10° - 35°; and the high level as many as >1000 MASL with the slope of >35°.

4) The fourth stage was overplaying types of tourism destinations and tourism visits for various types of tourism destinations using topography map, and the topographies of tourism visits based on tourism destinations on the low, medium, and high slopes were obtained.

5) The fifth stage was discussing typologies comprehensively through dialog review and faithful recommendation for the development and disaster mitigation of tourism destinations in the Mount Lawu area, Karanganyar Regency.

Diagrammatically, the flow of analysis stages represented in Figure 1.

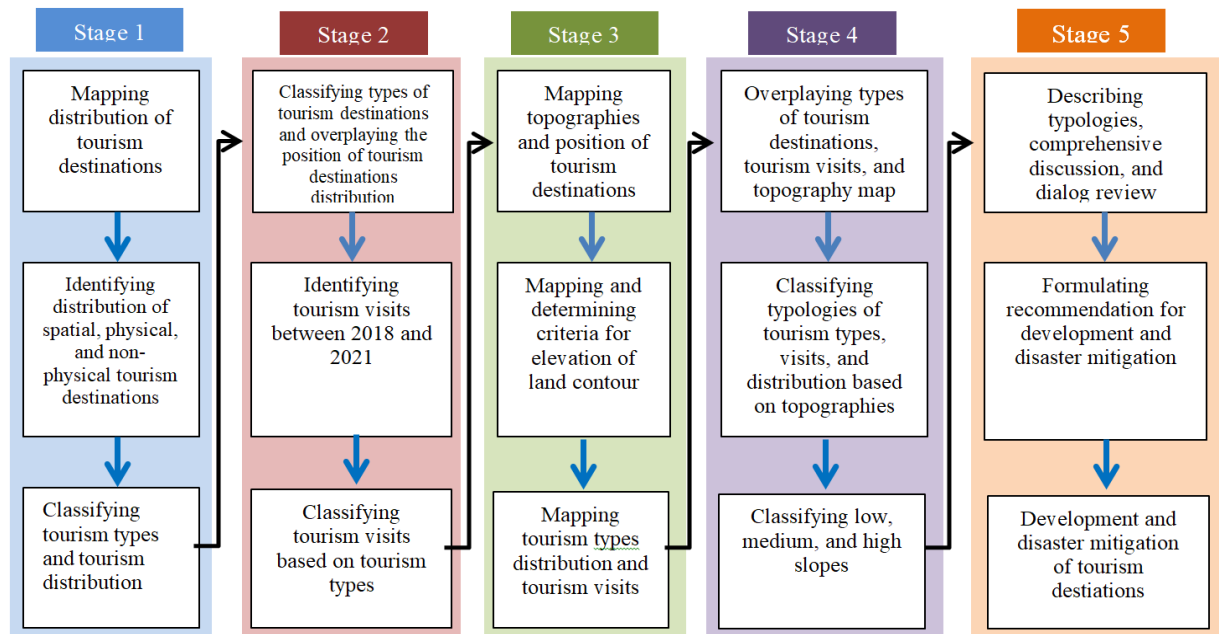


Figure 1. Flow of Analysis Stages

## RESULTS AND DISCUSSION

Tourism is one of the keys to economic development in many countries while increasing welfare for the people. The primary motivation for tourism in mountainous areas is to conduct recreational activities in the natural environment without changing its balance, promote nature conservation, carry out appreciation activities and develop knowledge about nature through interaction (Quintana, 2017; Ibarra, 2006). On the other hand, tourism is a sector easily affected by external phenomena, i.e., natural disasters, especially in mountainous areas, and Mount Lawu is one of them (Figure 2).



Figure 2. Position of Mount Lawu Area, Karanganyar Regency on the Indonesian Map

### A. Mapping Tourism Area Distribution in Mount Lawu, Karanganyar Regency

Tourism becomes a distinctive attraction to an area in developing its potential and increasing regional income. It is an



activity in which an individual carries out a trip for the time being from his origin to a particular destination to enjoy the environment and get rid of fatigue (Kodhyat, 1998). The Mount Lawu area, Karanganyar Regency, administratively includes Jenawi, Ngargoyoso, and Tawangmangu districts.

The Mount Lawu area is famous for its tourism potential. Some tourist objects include agrotourism, mountain areas, historical site tourism, and so forth. In 2021, the number of tourists was documented as many as 379,411, with an increase of as many as 22.76 percent compared to 2020, with 309,047 visitors. It occurs due to the government regulation to re-open the tourism area and allow people to travel but keep health protocols. Types of tourism destinations classify the mapping of tourism destination distribution in the Mount Lawu area as follows: 1) Agriculture Tourism; 2) Natural Tourism; 3) Artificial Tourism; 4) Cultural Tourism; 5) Special Interest Tourism/Sport Tourism, and 6) Other Tourism. The results of mapping tourism destinations in the Mount Lawu area based on districts are presented in Table 1, and Figure 2.

Table 1. Classification of Types of Tourism Destination in the Mount Lawu Area  
(Source: Department of Tourism, youth and sports, Karanganyar Regency, 2021)

No	Types of tourism destinations	Tourism Destination				Total (Unit)
		Jenawi District (Unit)	Ngargoyoso District (Unit)	Tawangmangu District (Unit)	Jatiyoso District (Unit)	
1	Agriculture Tourism	-	-	4	-	4
2	Natural Tourism	5	6	10	1	22
3	Artificial Tourism	1	8	4	1	14
4	Cultural Tourism	1	2	1	-	4
5	Special Interest Tourism	-	-	2	1	3
6	Other Tourism	-	1	1	-	2
Total (Unit)		7	17	22	3	49

Based on Table 1, the study maps the distribution of tourism destinations in Jenawi, Ngargoyoso, Tawangmangu, and Jatiyoso districts in Figure 3a, 3b, 3c, and 3d. Besides, the compilation of the whole tourism destination classification in Mount. Lawu is represented in Figure 3. The types of tourism destinations in the Mount Lawu area that covers Karanganyar Regency are revealed as presented in Figure 3. The entire tourism destination is as many as 49 objects, including 22 objects of natural tourism, 14 objects of artificial tourism, four objects of cultural tourism, four objects of agriculture tourism, three objects of special interest tourism, and two objects of other tourism. Figure 3 indicates that the tourism destinations are equally distributed in three districts and include the area close to the top of Mount Lawu. Some types of special interest tourism destinations are provided at the altitude approaching the top of Mount Lawu.

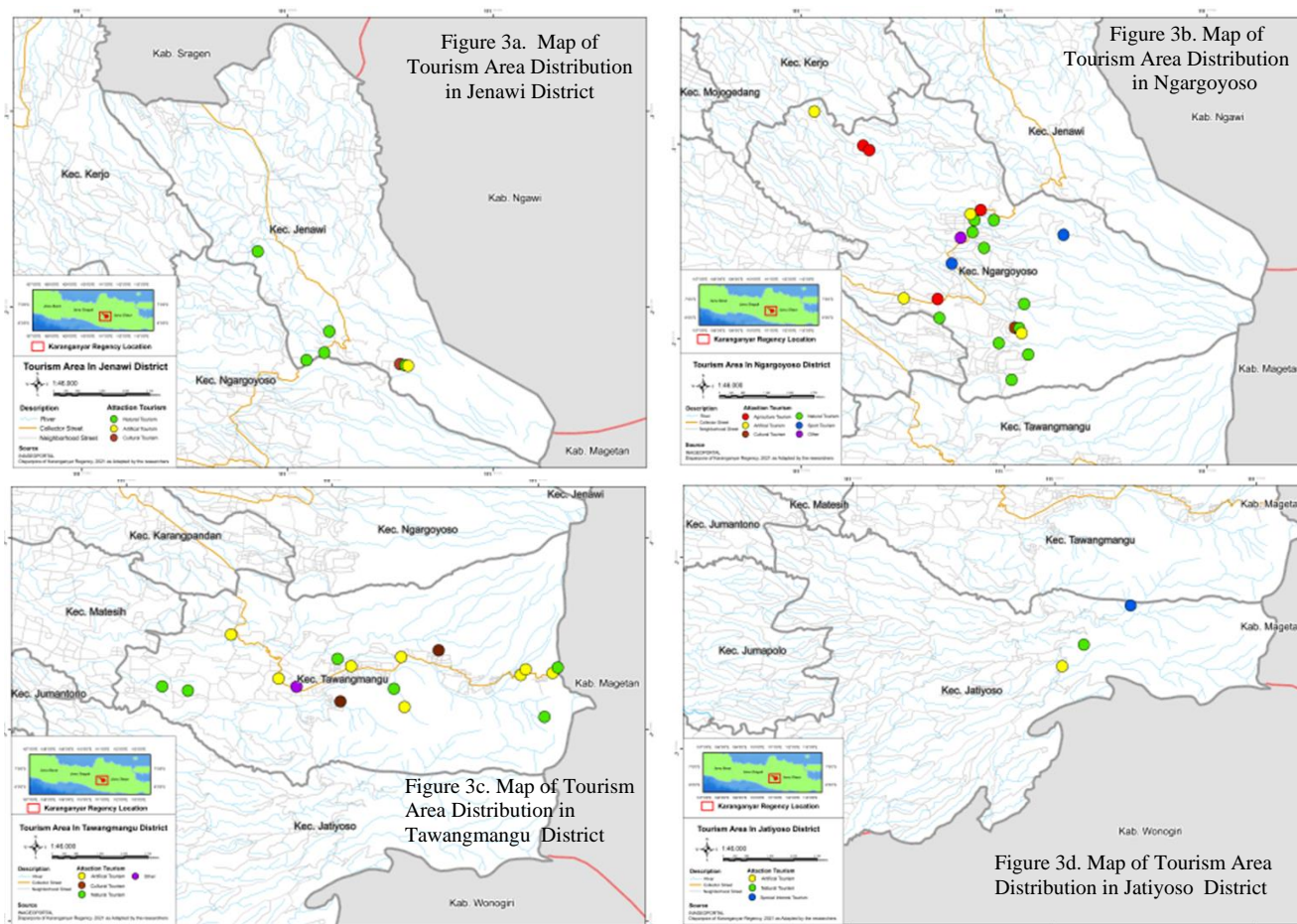


Figure 3. Map of Tourism Destination Distribution in sub-districts on the slopes of Mount Lawu, Karanganyar Regency

It is similar to Quintana (2017) and Ibarra (2006), who stated that the primary motivation of tourism to visit mountain areas is to carry out recreational activities in natural environments without changing their stability, promote the conservation of nature, undertake appreciation activities, and develop knowledge about nature through interaction. The motivation for tourism visits and security and safety are important considerations; as Ryglova et al. (2015) proposed, a sense of security is the most significant quality factor for a tourism destination. It includes security issues in a destination: local security situations, health risks, safe nature conditions, crime rates, and other factors. It is also emphasized by Zhou et al. (2015) that safety and security are essential elements in evaluating the competitiveness of tourism destinations.

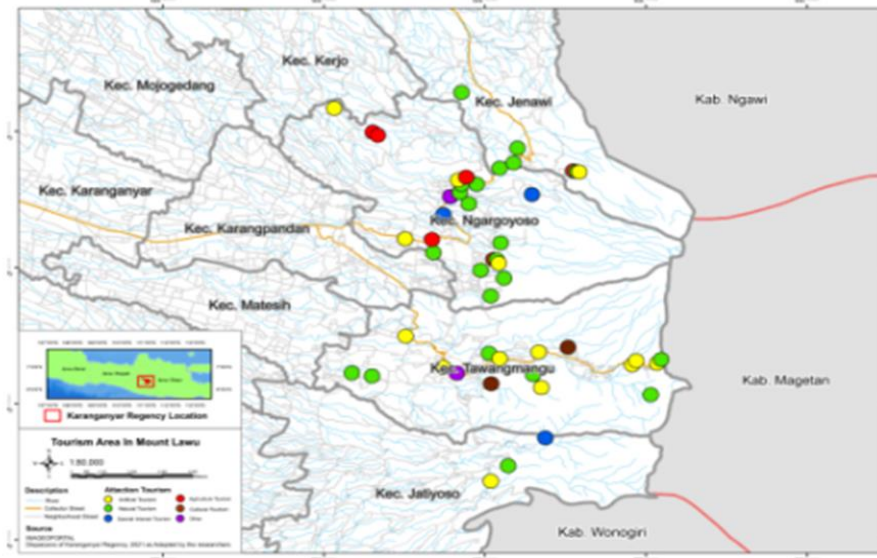


Figure 4. Map of Tourism Distribution in all Tourism Areas of the Mount Lawu, Karanganyar Regency (Source: The researchers, 2021)

**B. Identification and Typology of Tourism Visit Number in Mount Lawu Area**

Some aspects are considered in tourists’ satisfaction, and nature has a huge impact (Sepideh et al., 2015). Climate conditions strongly influences most tourists’ decisions. The influence of weather variables on the environment is manifested in warmer weather, heatwave, frequency changes, and extreme weather such as severe storms and hurricanes, floods, and the rise of sea level (Méndez et al., 2014). The result revealed by Ritchie (2009) indicates that the increasing number of disasters and crises has considerably influenced the tourism industry. It is regarded as interfering with the development of tourism industries and the stability of tourist flows. In addition, the multiplier effect of disasters occurring highly influences tourism industries, especially attractions of tourism destinations, the number of tourism visits, and other sectors supporting tourism will also get the impact of these disasters (Brent, 2009). The weather condition informed in real-time can also influence the tourists’ behavior in selecting a destination and making travel plans (Morgan et al., 2000). Most of the tourists come to enjoy shopping, nightlife, and outdoor activities in the context of pleasant climate (Terrasa, 2012).

Based on the identification and classification of tourism visit numbers for each type of tourism area in 2018, 2019, 2020, and 2021, the study obtains the typologies as presented in Figure 5.

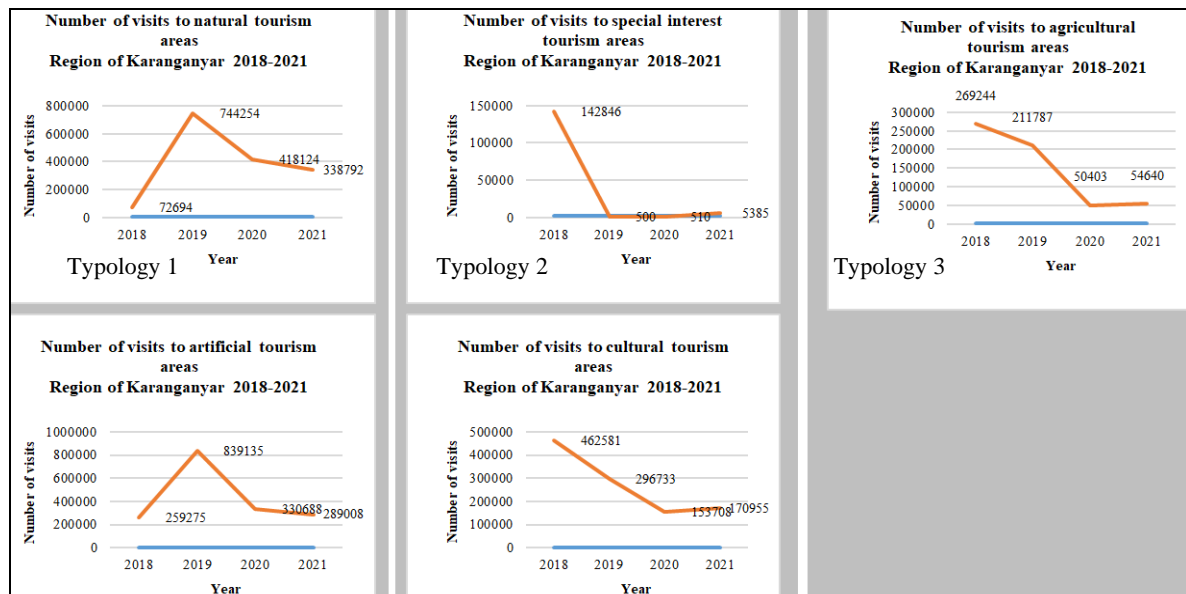


Figure 5. Typologies of Decreased Number of Visits in Tourism Destination Area

Typology 1 (Figure 5a) indicates the high increase in 2019 and the higher number of visits in 2020 and 2021 compared to 2018. However, the types of natural and artificial tourism destinations still survive. It contrasts with Zhou et al. (2015), who stated the importance of safety and security regarding tourism competitiveness. Moreover, it contradicts Ryglova et al. (2015), who claimed the significance of a sense of security for a tourism destination. Based on Figure 5b typology 2 shows that special interest tourism and cultural tourism gradually decrease during 2018, 2019, and 2020. However, in 2021 they ran into an increase, but the number of visits is still not higher than the number in 2018. The decrease in visit numbers is affected by weather conditions informed in real-time, so it influences the tourists' behavior in selecting a destination and trip plan (Morgan et al., 2000). Typology 3 (Figure 5c) indicates that agriculture tourism experienced a significant decrease in 2020 and 2021. They are affected by the community's activities in farming. In rural areas, communities cannot carry out activities collectively during the pandemic. It is similar to Caputo et al., (2005) that agriculture tourism has a close relationship with local communities' activities, is organized collectively and plays a participatory role in the development, management, and control, natural environment and socio-culture conservation.

### C. Mapping Tourism Destination Distribution based on Topography in the Mount Lawu Area, Karanganyar Regency

The Mount Lawu area topographically has diversity. The study obtains the result as presented in Figure 6a. The distribution of tourism area to the condition of the Mount Lawu slope is portrayed in Figure 6b. Figure 6b shows that the area with the high topography has 49 tourism areas, or 62.8% of the 78 areas in Mount Lawu.

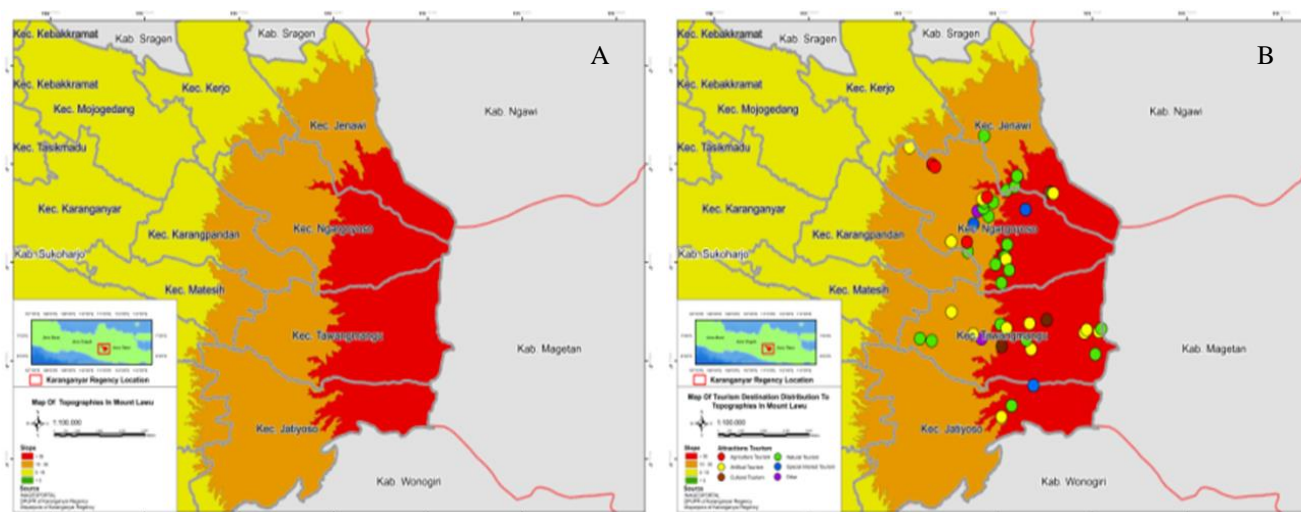


Figure 6. Map of Topography (A) and Tourism Destination Distribution (B) in Mount Lawu Area, Karanganyar Regency

Based on the mapping result, there are 78 tourism destinations distributed in three topographies. The high topography has 49 tourism destinations or 62.8% of 78 locations in the Mount Lawu area. Meanwhile, the medium one is indicated in 16 destinations or 20.5%, and the low one is distributed in 13 destinations or 16.7%. This shows that the high topography dominates the tourism locations. However, the number of visits shows different tendencies. The tourism destinations with a visit number of 50,000-100,000 and more than 100,000 per year are on high and medium topographies. However, the visit numbers of special interest, natural, and cultural tourism areas are not affected by the high topography, even the difficult access to the high topography. This is because tourism tracts to reach destinations with high topography have beautiful views.

### D. Typology Study of Tourism Visits on Tourism Area Types Based on Topography Level

The distribution of tourism destinations in the Mount Lawu area of Karanganyar Regency is mainly located on the high and medium topographies. The existence of tourism destinations on the high and medium topographies gives a cool atmosphere and beautiful views. The analysis result of tourism destination distribution based on topography levels in the Mount Lawu area of Karanganyar Regency suggests that the position of high topography does not influence tourists' interest in visiting tourism destinations. The distribution of tourism destinations to topography reflects 49 locations or 62.8% of the 78 tourism destinations in Mount Lawu. It is stressed by Quintana, 2017; Ibarra, (2006) that the principal motivation of tourism in mountain areas is to do recreation in the natural environment without changing its balance, promote conservation of nature, carry out appreciation, and develop knowledge about nature through interaction (Quintana, 2017; Ibarra, 2006). The result of tourism destinations as classified by topographies of tourism destination types and visit numbers in 2018, 2019, 2020, and 2021 shows three typologies of tourism visits based on tourism destinations of slope levels. Typology 1 points out that artificial tourism destinations on the low slope have a high number of visits in 2019. Still, the number significantly decreased in 2020 as the pandemic occurred, which also hit other tourism. Cultural tourism considerably increased in 2021, or the end of the pandemic. Typology 2 suggests that cultural tourism destinations on the medium slope had a high number of visits in 2018. Still, their number decreases in the next year until the end of the pandemic in 2021. Typology 3 indicates that natural tourism destinations on the high slope have the highest number of visits compared to other destinations. The highest number of visits was in 2019. Meanwhile, the number decreased during the pandemic but remained the highest compared to the others. Figure 8 shows the



complete picture of all slope levels, destination types, and tourism visit numbers. Figure 8 shows that the tourists' interest in tourism destinations on the high slope is not highly influenced by pandemic conditions or health but by weather conditions. Thus, most tourism destinations with high slopes strongly attract tourists, whether normal or under pandemic conditions.

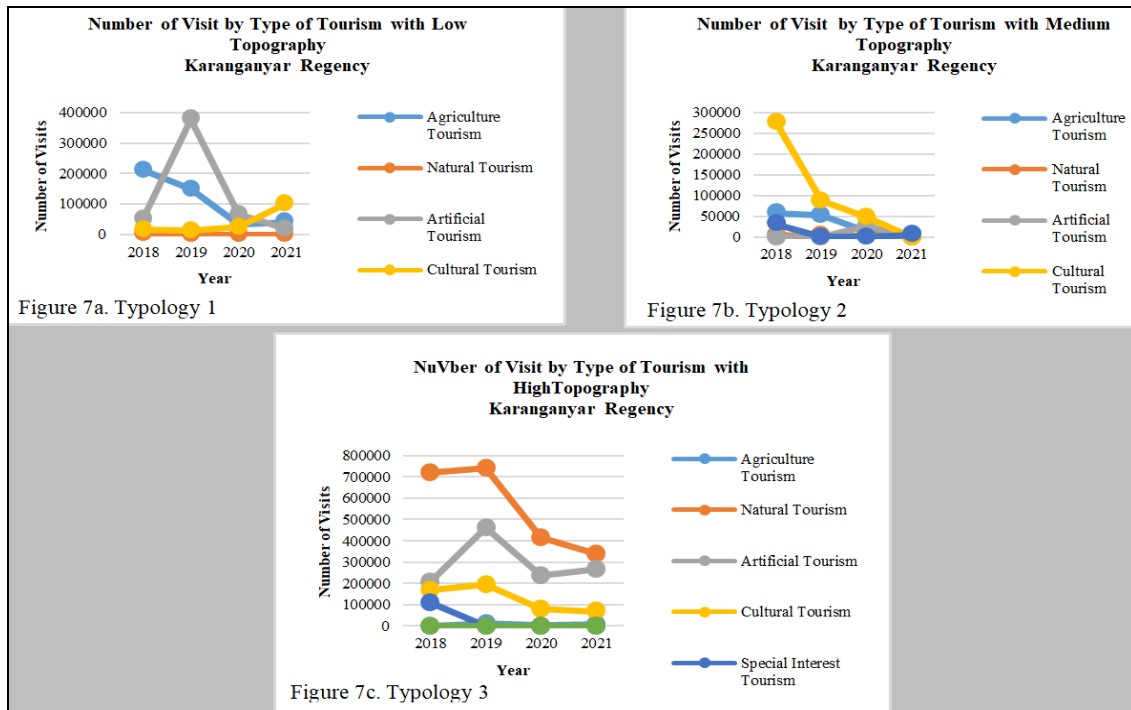


Figure 7. Typologies of Tourism Visits based on Tourism Destinations of Slope Levels

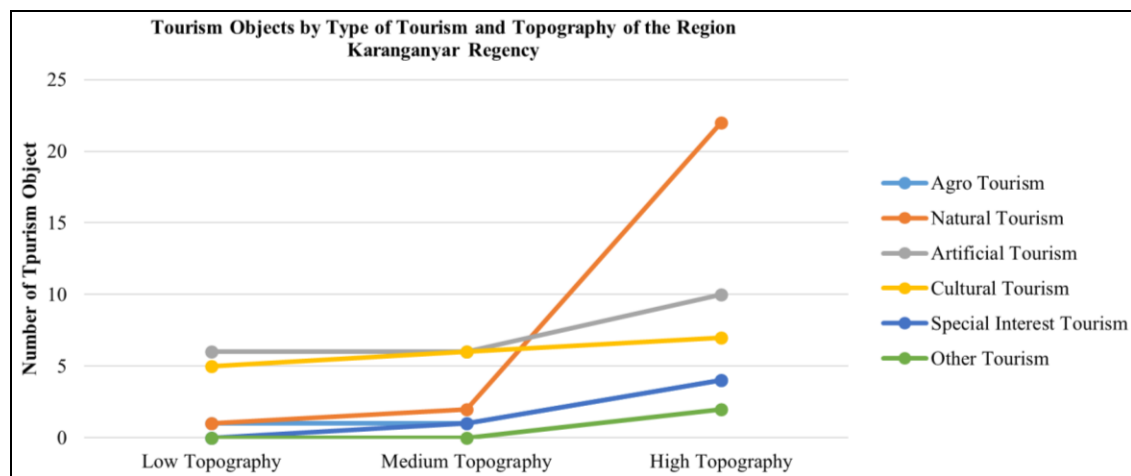


Figure 8. Classification of Topographies and Visit Numbers on each Tourism Destination Types

**E. Efforts for Development and Disaster Mitigation of the Mount Lawu Area**

Based on the analysis result, the consideration as the basis of selecting tourism destinations is weather conditions. It is in line with oleh Méndez-Lázaro et al. (2014), who claimed that the close relationship between tourism activities and weather conditions made the weather one of many variables tourists consider. The weather conditions are very burdensome for most tourists' decisions (Méndez et al., 2014). The conducive climate leads most visitors to enjoy shopping, nightlife, and outdoor activities (Terrasa, 2012). Various sustainable development models of tourism destinations are often applied through the management and promotion of natural, cultural, and heritage resources sustainably. It is done with the aim to improve the socio-economic development of local communities in tourism destinations and natural resource conservation (Mestanza and Jiménez, 2021). The development and disaster mitigation of mountain areas are carried out through four practical applications emphasizing the relationship between conservation and the local community population (Barrera and Bahamondes, 2012). The first model is “for” people’s welfare. The second relates to the development and disaster mitigation of mountain areas “with” communities, that is, the participation of indigenous communities and communities considered as the subject of the development and disaster mitigation of mountain areas but not the primary decision maker. The third model connects to the development and disaster mitigation of mountain areas “by” people. It considers local communities as a determinative factor for development and mitigation. It is assumed that long-term development only occurs if the organized local communities take over and build their own regulatory mechanism (García et al., 2021; Muñoz, 2017; Floris et al., 2020).

The fourth model is carried out “with” communities. The communities directly initiate and participate in the efforts to keep the sustainability of the local economy. However, the development and disaster mitigation of tourism areas involving most rural communities possibly integrate tourism activities into social, productivity, and economic dynamics as an alternative to fight poverty and to merge communities of local and mestizo (Mosquera et al., 2019; Castillo et al., 2021; Andries et al., 2021; Xiang et al., 2020). This allows presenting a pleasant and profitable experience as well as a reciprocal relationship between local community and tourists (visitors) (Xiang et al., 2020; Fun et al., 2014; Zielinski et al., 2020). This segment of tourism will increasingly create greater economic benefits for local communities, portray as an easy and fast strategy for development and poverty fight, and conserve biodiversity, landscape, and culture (Maldonado et al., 2020; Cucari et al., 2019).

The effort for the development and disaster mitigation of tourism destinations needs not only communities’ participation but also the government’s support and a conducive political climate. As a consequence, they become the expected standards for tourists in regard to their experiences and must become the government’s priority to ensure safety and security for all of them (Briedenhann and Wickens, 2004). Success and failure in a tourism destination depend on the ability to provide a safe and secure environment for visitors (Ahmed et al., 2010).

## CONCLUSION

Tourism destinations are equally distributed in three districts and reach the areas close to the top of Mount Lawu. The major motivation of tourism in mountain areas is to conduct recreational activities in natural environments without changing their balance, to promote nature conservation, to carry out appreciation activities, and to develop knowledge about nature through interaction. Motivation, safety, and security become important considerations in tourism. Besides, a sense of security is a significant quality factor of a destination. Based on the classification of tourism visits on each type of tourism destination, the study reveals three typologies of tourism visits. In 2021, natural tourism experiences a considerable increase and reaches the highest number compared to other tourism as many as 338,792 visits. It is due to the fact that communities need recreation by visiting natural tourism to feel rejoice, far from human interaction, and in the open nature. The classification of topographies based on tourism destination types and visits in 2018, 2019, 2020, and 2020 shows three typologies. Tourists’ interest in tourism destinations with high slopes is not considered by pandemic conditions or health but by weather conditions. Thus, the type of tourism destination on the high topography mostly has a characteristic of natural tourism and becomes a strong attraction for tourists to visit the destinations whether normal or under pandemic conditions. Therefore, the development and disaster mitigation of tourism destinations in mountainous areas are probably conducted through four practical applications that emphasize the relationship between nature conditions and local community populations. They are the development and disaster mitigation “for”, “with”, “by”, and “from” communities. The success of development and disaster mitigation efforts is affected by the government’s support and conducive political climate situation.

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