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Travel Motivation, Destination Image, and Stage of Intention to Visit Anak Krakatau Mount: a Study of Volcano Tourism in Indonesia

Motivação de Viagem, Imagem de Destino e Estágio de Intenção para Visitar o Monte Anak Krakatau: um Estudo do Turismo de Vulcão na Indonésia

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Abstract

This study aims to measure the impact of travel motivation and destination image on stage of intention to visit a volcano site, particularly *Anak Krakatau.* "Anak" means "child". This mount is a volcano created by the deadly eruption of the Krakatau volcano which killed 36,417 people in 1883 and had a wide-ranging impact on some of the world's ecosystems. This mountain is located on a small island between two large islands of Sumatra and Java, Indonesia. Anak Krakatau is more popular among domestic tourists. Data were collected using an online questionnaire platform and the study used a convenience sample of 250 participants. Data were analysed using exploratory and confirmatory factor analyses, as well as structural equation model. Stage intention consisted of visit intention in the period of one, three, and five years and each of them were treated as individual variable unless for visit intention in a year due to insignificance. As a result, travel motivation had a significant impact on destination image and destination image significantly affects stage of intention.

Keywords: Geotourism; Geotourist; Destination management

Resumo

Este estudo visa medir o impacto da motivação da viagem e da imagem de destino no estágio de intenção de visitar um local de vulcão, particularmente Anak Krakatau. "Anak" significa "criança". Este monte é um vulcão criado pela erupção mortal do vulcão Krakatau que matou 36.417 pessoas em 1883 e teve um amplo impacto em alguns dos ecossistemas do mundo. Esta montanha está localizada em uma pequena ilha entre duas grandes ilhas de Sumatra e Java, Indonésia. Anak Krakatau é mais popular entre os turistas domésticos. Os dados foram coletados usando uma plataforma de questionário online e o estudo utilizou uma amostra de conveniência de 250 participantes. Os dados foram analisados utilizando análises exploratórias e confirmatórias de fatores, bem como modelo de equação estrutural. A intenção de etapa consistia na intenção de visita no período de um, três e cinco anos e cada um deles foi tratado como variável individual a menos que para intenção de visita em um ano devido à insignificância. Como resultado, a motivação da viagem teve um impacto significativo na imagem do destino e a imagem do destino afeta significativamente o estágio de intenção.

Palavras-chave: Geotourismo; Geotourista; Gestão de destino

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1 Introduction

According to Erfurt-Cooper and Cooper (2010), more than 1300 active volcanoes potentially attract tourists across the globe. It has been dozens and even hundreds of years ago, people came to climb volcanoes and visit geothermal sites. Tourists visit volcanoes both for physical activities and spiritual activities (Choe & Hitchcock 2018; Erfurt-Cooper & Cooper 2010), and in some countries, volcanoes are offered as a tourism destination that can increase income for the community and local government.

Volcano tourism has intrigued scholars from various countries. Their studies also show that there are volcanoes or volcanic-related activities in places where research takes place. For example, there is the New Kanawinka geopark of Victoria and South Australia in Australia (Joyce 2010). In Canary Islands, there is Mount Teide (Dóniz-Páez 2014) and in China there is Arxan-Chaihe (Wang et al. 2014). Furthermore, there is Mount Poas in Costa Rica (González 2011), Mount Erta Ale in Ethiopia (Edelmann & Roscoe 2010) and volcanoes Santorini, Methana, Mílos, Nisyros, Yali and Kos in Greece (Gaki-Papanastassiou & Papanastassiou, 2014). Besides, there are volcanoes of Hekla, Eldgjá, Eldfell, and Laki, in Iceland (Dowling 2010) and Mount Sahand in Iran (Ghazi et al. 2012). Some other studies present that there is Mount Etna in Italy (Struck 2010) and cluster of volcanoes in Japan including Mount Unzen, Mount Sakurajika, Mount Kirishima, Mount Tsurami, Mount Kuju, Mount Aso, and Mount Kaimon-dake (Erfurt-Cooper 2010). Also, there is Mount Tongariro in New Zealand (Jolly et al. 2014). Additionally, there is Mount Pinatubo in the Philippines (Aquino 2015) and volcanoes like Ağrı, Süphan, and others in Turkey (Akbulut 2014). In addition, there is volcanic geopark of Krong No in Dak Nong, Vietnam (Phuc et al. 2018).

Indonesia is situated on the ring of fire and therefore it is not surprising that it has 137 active volcanoes (Habibi, Lukihardianti & Ridwan 2019) and these attract scholars to study on including mount Sibayak in North Sumatra (Newsome, 2010), Semeru in Central Java (Suhud & Allan 2019), Bromo in East Java (Choe & Hitchcock 2018), Nglanggeran in Central Java (Rahayuningsih, Yuniarti & Priyambodo 2017), Merapi in Central Java (Sagala *et al.* 2012), Agung in Bali (Beirman 2017), Batur in Bali (Erfurt-Cooper 2014), Krakatau in Banten (Cooper 2010), and Slamet in Central Java (Mei et al. 2020).

Although research on volcano tourism has been done a lot, however, it is still very limited research that looks at the tourists' behavioural intentions to visit and revisit volcanic and geo-thermal sites. However, some national studies have been conducted by several scholars, for example, Agustina (2018) measured the impact of destination image on intention to visit Mount Batur in Bali. Suhud and Allan (2019) assessed factors to influence stage of readiness to visit Mount Semeru in the Province of Central Java by employing motivation to travel and constraints to travel as predictors. Comparing to this study, these two similar studies are far different. Besides, in this current study, the authors employed stage of travel intention that can bring an understanding the difference of visit intention in the next certain periods of time. Furthermore, this study focussed on visit intention to Mount Anak Krakatau (Krakatoa). Mount Anak Krakatau was created from the eruption of Mount Krakatau which erupted in 1883 and is in the Sunda Strait, between the islands of Sumatra and Java. This mount has a height of 813 meters above sea level and is about 158 kilometres from Jakarta, the capital.

2 Literature Review

2.1 Theoretical Framework

2.1.1. Travel motivation and destination image

Numerous studies had attempted to explain the nature and scope of travel motivations for tourists undertaking geotourism experiences in different contexts, settings and countries (Allan & Shavanddasht 2019; Cheung 2016; Chrobak et al. 2020; Dowling & Allan 2018; Grobbelaar, Bouwer & Hermann 2019; Hurtado, Dowling & Sanders 2014; Wang, Huang & Kim 2015). Chylińska (2019, p. 3) had reviewed several case studies on motivations for visiting geosites in different countries. She further indicated that it is possible that "geotourism is defined more by the motivation (and the type and strength of motivation) for travel rather than simply the geological or geomorphological nature of the destination".

It is acknowledged that exploring the motivations of volcano tourism participants is still very scant in the pertinent tourism literature. However, Aquino, Schänzel, and Hyde (2019) had applied push and pull theory to investigate travel motivations for tourists undertaking volcano tourism experience. More specifically, the main push motivations were escape and relaxation, novelty-seeking, volcano knowledge-seeking, and socialisation. Whilst pull motivation included disaster and cultural heritage-induced, and volcanic and geological attribute-driven. Suhud and Allan (2019) had used an array of motivations for the volcano tourism participants in Indonesia including physiological motivation, local immersion motivation, self-actualisation motivation, environmental motivation, and understanding motivation. Davis et al. (2013) indicated

that the prime motivation for a large portion of tourists visiting Hawaii Island was seeing the volcano.

Ernawati et al. (2018) measured factors to influence tourists' satisfaction relating to their visit to Pandul cave in the Province of Central Java, Indonesia, by employing travel motivation, tourist characteristics, and destination image. As a result, travel motivation significantly affects destination image. Furthermore, Khan, Chelliah, and Ahmed (2017) investigated visit intention of women travellers by employing travel motivation and destination image. In their study, they divided destination image into cognitive image and affective image. They claimed that travel motivation significantly influences both cognitive and affective images.

Guided by the studies discussed, this hypothesis has been formulated as follows.

H_1 – Travel motivation has a significant impact on destination image.

2.1.2. Destination image and stage of intention

Overall, destination image is generally defined as "the sum of beliefs, ideas and impressions that a person has of a destination" (Crompton, 1979, p. 18). Suhud and Willson (2018) indicated that destination image can interplay with tourists' attitude. To date, minimal studies have examined the construct of stage of intention in the tourism literature. However, Suhud (2014) measured intention of potential tourists and volunteers to be involved in volunteer tourism. He employed intention as three categorical period including intention in the next year, intention in the next three years, as well as intention in the next five years. In his study, he chose subjective norm, attitude, sensation seeking personality, past experience, and travel constraints to be linked to stage of intention. Though, in the current study, the authors select destination image as predictor variable. As there is a paucity of study measuring stage of intention as practiced by the current study, therefore, other studies examining visit intention are considered here to develop the theoretical framework.

Chaulagain, Wiitala, and Fu (2019) predicted the impact of country image and destination image of Cuba on visit intention by involving a sample of US tourists. One of the findings of their study was that destination image had a significant influence on visit intention. Prayogo, Ketaren and Hati (2016) considered choosing Malioboro as a prominent street in Special Region of Yogyakarta, Indonesia, as their research object. They looked at predictors to affect domestic tourists' visit intention. They mentioned that destination image has a significant influence on visit intention.

Junaidi, Widjaya and Andajani (2017) measured the influence of destination image on the intention to visit Yogyakarta, a provincial city in Indonesia. In their research, destination image had four dimensions including infrastructure, attractions, value of money, and enjoyment. They stated that these four dimensions significantly influenced the intention to visit Yogyakarta.

In the light of the mentioned studies, the second hypothesis is formulated as follows.

H_2 – Destination image will have a significant effect on visit intention.

2.2 The Proposed Research Framework

Figure 1 shows the proposed research framework to be tested. In this model, travel motivation is linked to destination image, and destination image is linked to visit intention. Visit intention will be split into three individual variables as the nature of the indicators which is looking at the three different periods of time. Therefore, there will three models or less depending on the results of confirmatory factor analysis (CFA) or structural equation model (SEM) analysis: a proposed model with visit intention in the next year, with visit intention in the next three years, and with visit intention in the next five years. Table 1 presents stage of intention in square instead. There will also another three model or less (depending on the results of CFA and SEM analysis). These models will employ dimensions of travel motivation. Number and names of dimensions would be depending on the results of exploratory factor analysis (EFA).

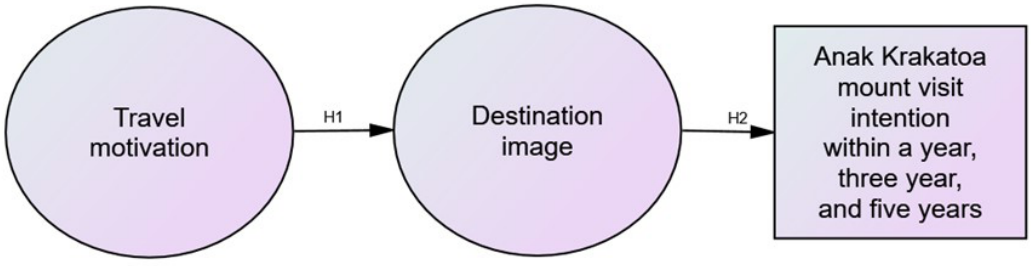

Figure 1 The proposed model to test Mount Anak Krakatau visit Intention.

3 Methods

3.1 Sample

In total, 250 participants involved in the current study. There were selected using a convenient sampling method. There are no specific criteria to applied in selecting the research cohort as the dependent variable was visit intention. Participants were asked using an online communication platform to be involved in an online survey.

3.2 Measures

Indicators to measure travel motivation and stage of intention were adapted from the study of Suhud (2014). Destination image was measured using indicators adapting from Echtner and Ritchie (1993) and Tsiotsou et al. (2010).

3.3 Data Analysis Method

The authors analysed the quantitative data in four phases. The first phase was to validate data using exploratory factor analysis (EFA). The second phase to test the reliability data. The third phase was confirmatory factor analysis (CFA). However, results of the third phase were not presented here. It was used to trim the data before conducting the fourth phase. In the third phase, structural equation model (SEM) was employed to measure the proposed research model. There were criteria chosen to state a fitted model including probability, CMIN/DF, CFI, and RMSEA.

4 Results

4.1 Participants

Table 1 shows the profile of participants. This study attracted 250 participants consisting of 109 males (43.6%) and 141 females (56.4%). Furthermore, 33 of the participants were visited a volcano. In addition, 31 participants claimed that they have visited Anak Krakatau. Twenty-one participants have visited it once, 13 participants have visited it twice, and three participants have visited it three times. With regard to age, the largest age group of participants was between 18 to 23 years consisting of 184 participants (73.6%). Followed by an age group of less than 18 years consisting of 24 participants (9.6%). Furthermore, 174 participants (69.9%) hold a high school diploma, followed by those who hold a diploma consisting of 43 participants (17.2). The majority of participants were unmarried, which was 242 participants (96.8%) and the majority of them were not working, i.e. 199 participants (79.6%).

Table 1 Profile of participants.

Profile		Frequency	Percent
Sex	Male	109	43.6
	Female	141	56.4
Age	< 18	24	9.6
	18 – 23	184	73.6
	24 – 29	40	16.0
	42 – 47	2	0.8
Education level has been completed	Less than high school	24	9.6
	High school	174	69.6
	Diploma	6	2.4
	Under-graduate	43	17.2
	Post-graduate	3	1.2
Marital status	Unmarried	242	96.8
	Married	8	3.2
Occupational status	Employed	18	7.2
	Self-employed	3	1.2
	Unemployed	199	79.6
	Working while studying	30	12.0

4.2 Data Validation and Reliability Tests

Table 2 indicates results of data validation and reliability tests. There were four variables tested including travel motivation, destination image, and stage of intention. Based on the calculation, travel motivation consisted three dimensions including understanding motivation, escape motivation, and physiological motivation. Understanding motivation survived 11 indicators with a Cronbach's alpha score of 0.943. Escape motivation contained seven indicators with a Cronbach's alpha score of 0.892. Physiological motivation consisted of seven indicators with a Cronbach's alpha score of 0.892. Furthermore, destination image had nine indicators with a Cronbach's alpha score of 0.945. Moreover, destination image kept nine indicators with a Cronbach's alpha score of 0.945 while stage of intention owning a Cronbach's alpha score of 0.788 with three indicators.

In conducting exploratory factor analysis, indicators with a factor loadings of 0.4 or larger were considered valid (Hair et al. 2019). The score of 0.4 associated with the number of participants. Besides, according to (Hair et al. 2019), data are considered reliable if they have a Cronbach's alpha scores of 0.7 or larger. In this case, all constructs had a Cronbach's alpha greater than 2.0.

Table 2 Result of data validation and reliability tests.

Variables and indicators	Factors loadings	Cronbach's alpha
Understanding motivation		**0.943**
M28 To seek adventure	0.888	
M22 To be close to nature	0.886	
M30 To experience something different	0.851	
M21 To learn more about the natural environment around Anak Krakatau	0.803	
M27 To find exciting stuff around Anak Krakatau	0.775	
M23 To better understand me	0.774	
M29 To get a feeling of accomplishing something	0.751	
M1 To have fun	0.661	
M4 To feel good things about yourself	0.658	
M10 Holiday to Anak Krakatau can recharge the mind	0.549	
M25 To see things I do not normally see	0.547	
Escape motivation		**0.892**
M9 To be far from the usual demands of life faced every day	0.899	
M7 To stay away from the daily physical stress	0.811	
M8 To be away from the daily psychic pressure	0.762	
M6 To be away from home	0.735	
M5 To get away from the crowd	0.704	
M24 To escape from the pressures of everyday life	0.642	
M2 To do things according to my own way	0.468	
Physiological motivation		**0.892**
M17 Hiking Anak Krakatau is a comfortable holiday	0.864	
M16 Climbing Anak Krakatau is a cheap holiday	0.817	
M15 Anak Krakatau provides excitement	0.743	
M14 Anak Krakatau offers physical exercise	0.743	
M13 Anak Krakatau has dramatic scenery	0.657	
M20 I once heard about Anak Krakatau and wanted to see it for myself	0.533	
M12 Anak Krakatau has good air quality	0.410	
Destination image		**0.945**
IM3 Everything I encounter at Anak Krakatau would be different and interesting	0.824	
IM4 In general, Anak Krakatau is a safe place to visit	0.808	
IM11 Anak Krakatau is the best place to selfie	0.792	
IM5 Anak Krakatau is visitors friendly	0.792	
IM9 Anak Krakatau has a photogenic landscape	0.768	
IM10 Many interesting spots within Anak Krakatau can be visited	0.767	
IM6 Lodging around Anak Krakatau is easy to find	0.752	
IM1 The air in Anak Krakatau is fun	0.745	
IM8 Anak Krakatau is a suitable place to rest and relax to visit	0.719	
IM2 Tariff goes to Anak Krakatau is affordable	0.655	
IM7 Hiking Anak Krakatau is truly an adventure	0.355	
Stage of intention		**0.788**
In3 I will visit Mount Anak Krakatau in the next three years.	0.946	
In5 I will visit Mount Anak Krakatau in the next five years.	0.814	
In1 I will visit Mount Anak Krakatau in the next year.	0.774	

4.3 Hypotheses Test

Before conducting structural equation model, we calculated confirmatory factor analysis. During the calculation, indicator of travel intention in the next year has been dropped during the validation test. To test the research model, stage of intention was treated as two different variables and therefore, there were two models examined. The first model was with travel intention in the three years and the second model was with travel intention in the five years. This approach adopted the study of Suhud (2014).

Figure 2 presents a structural model of hypotheses testing with visit intention in the next three years. This model achieved a fitness with probability score of 0.064, CMIN/DF score of 1.425, CFI score of 0.988, and RMSEA score of 0.041. A fitted model should have a probability score of 0.05 (Schermelleh-Engel, Moosbrugger & Müller 2003) and CMIN/DF score of ≤ 2 (Tabachnick, Fidell & Ullman 2007). Besides, it must have a CFI score of ≥ 0.97 (Hu & Bentler 1995) and RMSEA score of ≤ 0.05 (Hu & Bentler 1999).

Figure 3 indicates travel motivation was linked to destination image and destination image was linked to travel intention in the next five years. The model was fitted with a probability score of 0.155 and CMIN/DF score of 1.264. additionally, the model had a CFI score of 0.992 and RMSEA score of 0.033.

Table 3 presents the results of the hypotheses testing. Both tested models resulted a C.R. score greater than 2.0 showing a significance.

After observing the two structural models above, we realise that the models of the two fit models are not ideal. Mainly because the standard errors of each dimension of travel motivation were intercorrelated, therefore, there were two choices we can make. The first option is to remove the escape motivation from the model. The second option is to modify the model so that the three dimensions of travel motivation become three independent variables. So, this second choice that we chose. Figure 3 and Figure 4 are the results of the modification of the tested model.

Figure 4 shows three dimensions of travel motivation were linked to destination image and destination image was linked to travel intention in the next three years. This fitted model had probability, CMIN/DF, CFI, and RMSEA scores of 0.155, 1.264, 0.992, and 0.033, respectively.

Figure 5 indicates the structural model with travel intention in the next five years. This model had a fitness with probability, CMIN/DF, CFI, and RMSEA scores of 0.155, 1.264, 0.992, and 0.033, respectively.

Table 4 shows the results of the two modification models tested. The effects of the modification of the first model with 'travel intention the next three years', escape motivation has a value of C.R. equal to -1,744, which indicates that this path is not significant. This result also applied to the modification of the second model with 'travel intention in the next five years' which has a value of C.R. amounting to -1,847. In contrast to the two results, physiological motivation and understanding motivation significantly influenced the destination image, and this applied in both models. Also, destination image has a significant impact on the stage of travel intention. An effect of a variable on other variables is said to be significant if the value of C.R. greater than 0.05.

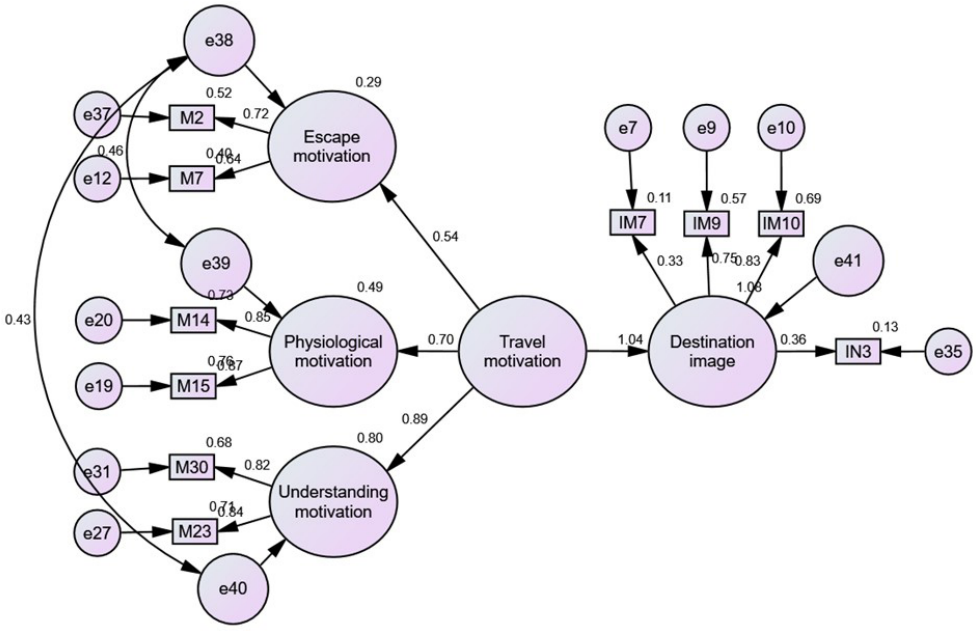

Figure 2 Structural model of hypotheses test with visit intention in the next three years.

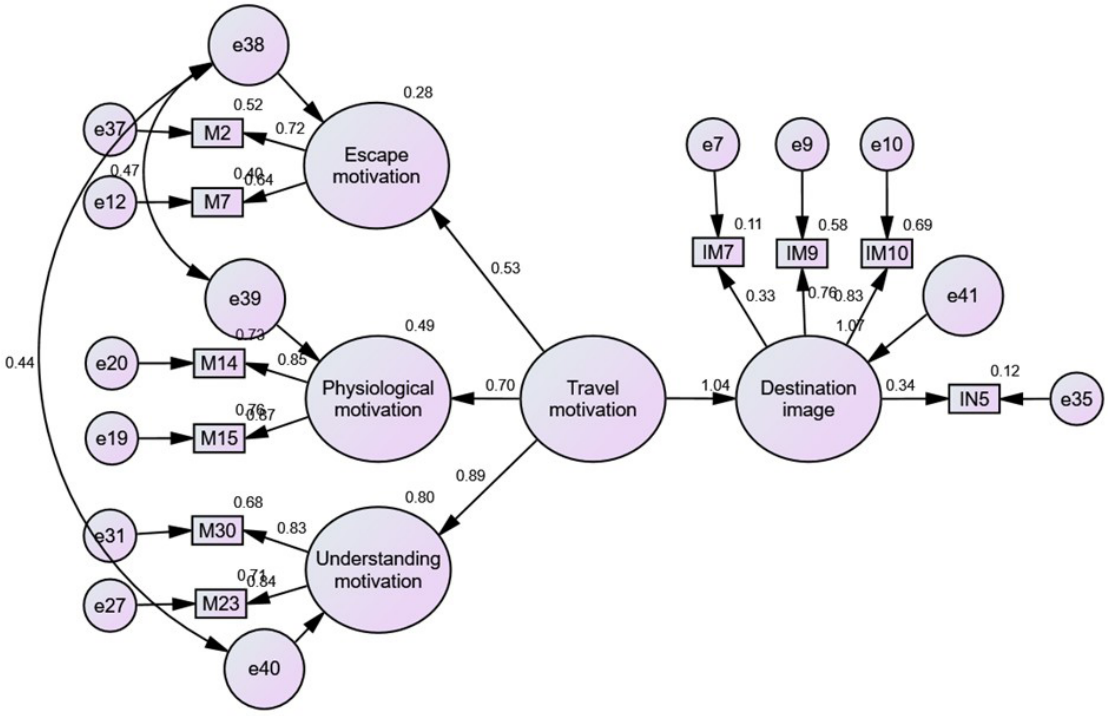

Figure 3 Structural model of hypothesis testing with travel intention in the next five years.

Table 3 Results of hypotheses testing.

Paths				In the next three years			In the next five years		
				Estimate	C.R.	P	Estimate	C.R.	P
H_1	Travel motivation	➔	Destination image	1.584	4.634	***	1.550	4.561	***
H_2	Destination image	➔	Travel intention	0.403	3.845	***	0.445	3.724	***

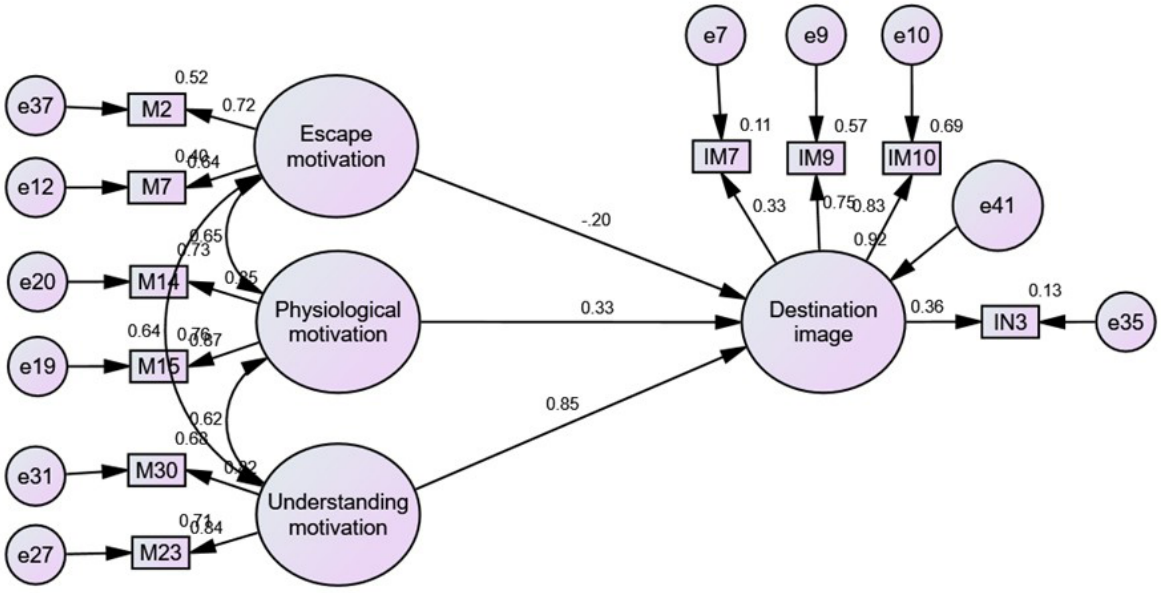

Figure 4 Structural alternative model with visit intention in the next three years.

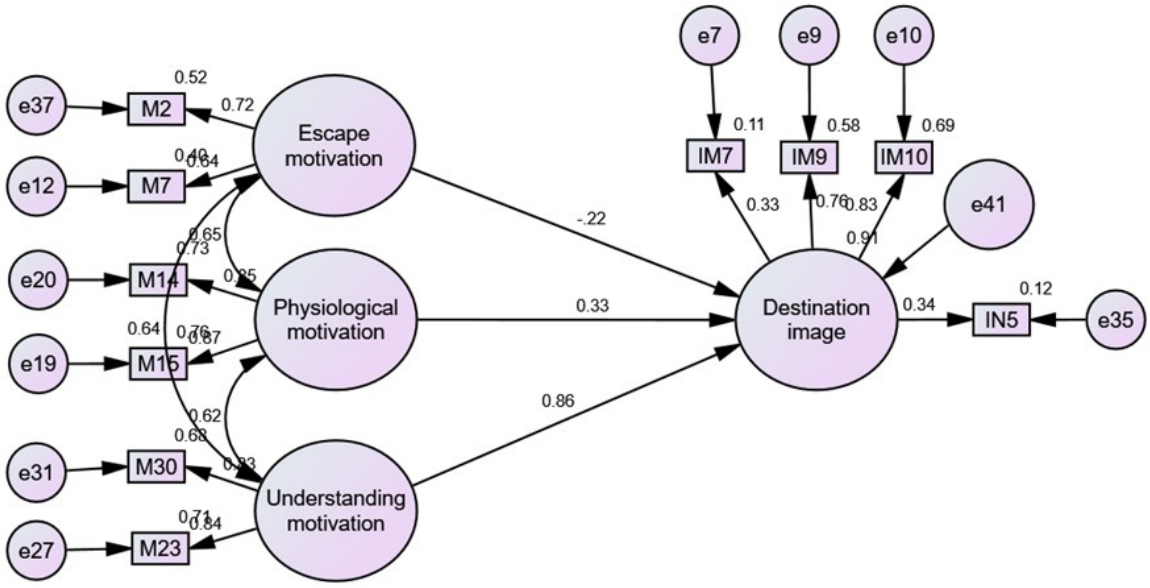

Figure 5 Structural alternative model with visit intention in the next five years.

Table 4 Results of the modification models.

Paths				Travel intention in the next three years			Travel intention in the next five years		
				Estimate	C.R.	P	Estimate	C.R.	P
H	Escape motivation	➔	Destination image	-0.260	-1.744	0.081	-0.277	-1.847	0.065
H	Physiological motivation	➔	Destination image	0.346	3.077	0.002	0.347	3.078	0.002
H	Understanding motivation	➔	Destination image	1.064	4.536	***	1.045	4.465	***
H	Destination image	➔	Travel intention	0.403	3.845	***	0.445	3.724	***

5 Discussion

Tourists visiting a volcano site are motivated by push or pull motivational factors (Aquino, Schänzel & Hyde 2019) or other factors, such as physiological, local immersion, and environmental motivation (Suhud & Allan 2019). However, in this current study, motivation consisted of three-dimensional factors including understanding, escaping, and physiological motivation. This variable significantly affected tourists' perception toward destination image. This finding in line with previous studies (Chaulagain, Wiitala & Fu 2019; Junaidi, Widjaja & Andajani 2017; Prayogo, Ketaren & Hati 2016). A tourist's perception of a destination is influenced by their travel motivation. The better their perception, the better their motivation to visit volcanoes, especially Mount Anak Krakatau. The tourists perceive Mount Anak Krakatau's image as an adventurous, photogenic destination, and has many interesting spots. These things seem to be the attraction of this mountain for tourists.

In examining the proposed model, the authors had two option methods, whether following the work of Suhud (2014) to put all three periods in models tested or another way differently. However, in this study, two indicators of intention were treated as two different variables. By considering the findings of the two models tested, it was seen that both visit intention variables: in a three-year period and in a five-year period, the participants had the intention to visit a volcano, especially Anak Krakatau. Of the two, a Critical Ratio score that exceeds 2.0 can be obtained, which indicates a significance. Previously, the intention to visit in one year had fallen in the calculation of the structural equation model. This can show several issues, for example, that a trip to visit a Merapi volcano,

especially Anak Krakatau, requires adequate preparation. It could be, in addition to the need for strong motivation, it also reduces obstacles (Suhud & Allan 2019). Another thing, this finding shows that visiting a volcano can be a serious leisure, as well as adventure sport and volunteer tourism (Green & Jones 2005; Lee, Bentley & Hsu 2017; Suhud 2014). However, in general, this study supports previous studies (Chaulagain, Wiitala & Fu 2019; Prayogo, Ketaren & Hati 2016) which showed that destination image significantly influences the intention to visit a destination, especially in this case is Anak Krakatau.

6 Conclusion

This study aimed to examine the impact of travel motivation and destination image on the stage of intention to visit Anak Krakatau Mount in Indonesia. However, stage intention in this study is referred to intention in the next three different periods, including one, three, and five years. However, intention in the next a year was dropped due to insignificance in measuring the structural model. This study found a significant effect of travel motivation on destination image, and the significant effect of destination image on the stage of intention both in the next three and five years.

This research reveals that the volcano tourism experience could be a leisure series that requires careful preparation for the tourists. The proof, tourists cannot have the intention to visit in the next the next year. Based upon the findings of this study, volcano tourism managers, planners, marketers and policy makers should pay much attention to these following issues. First, promotion to invite tourists to come next year must be done this year. Or, secondly, promote relaxed and friendly destination image for volcano destinations. Besides, this research is useful for the managers of volcanoes, especially for the managers of Mount Anak Krakatau that destination image is significant for tourists. Tourists perceive destination images for their experiences of visiting or seeing volcanoes, the information they read, hear, and watch, including advertisements. But in general, volcano managers in Indonesia have never carried out massive marketing activities to attract tourists. In some previous studies, destination image can also influence the motivation of tourists to visit.

A limitation of this study is that participants have too broad a background. Another limitation of this study lies in the use of a convenience sample in this study; this has affected the generalisability of the research findings. In addition, we found that the models tested were fitted, however, there were over-fitted. We found that in the model with travel intention in the next three years, the path of travel motivation and destination image had a regression weight score of 1.584. In addition, the path of destination image and visit intention in the next three years had a regression weight score of 0.403. In the model with travel intention in the next five years, the path of travel motivation and destination image gained a regression weight of 1.550 and the path of destination image and travel intention possessed a regression weight of 0.044. the models with a regression weight over 1.0 should be followed up by employing Heywood case testing. However, for this case, we leave the results as they are.

Future research can focus on those who have visited the volcano at least once or select participants who are enthusiastic about adventure so they can better understand the segmentation of tourists or potential tourists.

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Usep Suhud: conceptualization; formal analysis; methodology; validation; writing- original draft; supervision. **Mamoon Allan:** writing – review and editing; visualization.

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