VOLCANO TOURISM IN VOLCANIC RISK AREAS: EXPLORATION OF THE HIGHER EXPERIENCE IN MOUNT SEMERU – INDONESIA

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Abstract: Volcano tourism is a part of ecotourism or geotourism in developed and developing countries. The visitors or tourists in this kind of tourism immerse themselves in the bodily enjoyment of feeling and sensing the volcano's high elevation instead of viewing its beauty. The present article aims to explore tourists’ subjective experiences of being at a high altitude by taking the case of Mount Semeru tourists. The tourist attraction of Mount Semeru as a volcanic mountain has a selling point and appeal for climbing but with threats and risks. This research explores and reveals the meaning of hiking trips and the manifestation of fear during trips in risky areas. The existential-phenomenological approach examines multifaceted phenomena from an individual’s point of view. Informants were determined by using a purposive sampling technique. In this phenomenological study, researchers look for information (individuals) who have the capability so they can articulate their life experiences related to the phenomenon under study. This study’s results describe the experience of climbers enjoying the journey through struggles and successes by interpreting the phenomena during the ascent and the anticipatory attitude of climbers toward facing the threats and risks of climbing Mount Semeru.

Key words: volcanic mountain tourism, meaning of climbing experience, risk tourism, Semeru mountain, higher experience

INTRODUCTION

The key objective of this paper is to explore the volcano tourists’ subjective experiences and investigate the social and cultural meaning of their mountaineering activities. Due to the fact that climbing volcanic areas could pose any risks to visitors or tourists, only people with sufficient risk-aversion training and mountaineering skills are capable of undertaking such a journey. The contribution of the present paper is to examine how such a fearless attitude can be nurtured among volcano tourists or visitors. Before moving further on, the contemporary progress of volcanic tourism in Indonesia is highlighted. Volcanic tourism has the potential to become popular in Indonesia, which would be beneficial for the country’s economy. Because of the collision of three major tectonic plates, Indonesia is home to 127 active volcanoes. These plates include the Indo-Australian Plate, the Pacific Plate, and the Eurasian Plate (Hidayat et al., 2020). Volcanoes have the potential to improve the visual appeal of a tourist location thanks to the iconic qualities they embody (Dehn and McNutt, 2015). Natural tourism attractions located in national parks, geoparks, and other types of protected areas can be found in volcanic landscapes. World Heritage Sites are another type of protected area (Erfurt, 2018). It is possible for the natural region and geological singularity of a volcano to entice tourists, who may then study biodiversity up close and enjoy the beautiful environment (Erfurt-Cooper and Lopes, 2015). Because of this, the location of the volcano is considered a strategic place; thus, it is an essential component of the tourism industry, which is one that is beneficial to the economy of the nation (Chakrabarty et al., 2018; Wibowo et al., 2021). The existence of volcanoes in Indonesia carries the potential of generating tourist attractions, such as mountain climbing trips, which can stimulate the country’s tourism industry.

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Ascending Mount Semeru is a popular climbing tour in Indonesia. Mount Semeru is the highest active volcano on the island of Java, with an altitude of 3,676 meters above sea level. Mount Semeru has a natural attraction that climbers can enjoy (Wiratama et al., 2014). Three lakes can be found during the ascent: Ranu Kumbolo, Ranu Pani, and Ranu Regulo (Wahyuningtyas et al., 2021). Ranu Kumbolo is a camping area for climbers before heading to the top of Mahameru. Ranu Kumbolo is a favorite area of climbers because of the beauty that can be enjoyed in the morning, afternoon, evening, and sunset (Nofiyanti et al., 2018). In addition, there are other natural uniquenesses, such as the incline of love behind Ranu Kumbolo and Oro-Oro Ombo, which is a wide, beautiful savanna.

In addition to Mount Semeru’s natural beauty, which is a tourist attraction, climbing Mount Semeru includes concerns that can threaten climbers’ safety. Climbers should be aware of these risks before attempting to scale Mount Semeru. Climbing is a physically demanding activity that calls for a high level of mental and physical preparedness (Zhou et al., 2020). Climbing to the summit of Mount Semeru is an activity that is fraught with danger due to the fact that the environment of Mount Semeru contains obstacles that climbers need to overcome in order to reach the summit (Barlow et al., 2013). Mount Semeru is a composite volcano that often experiences minor eruptions every three to four hours, releasing toxic gases and dust material from Jonggring Saloka Crater; thus, it poses a risk to the health of climbers (Iguchi et al., 2012). The temperature at the peak of Mahameru can reach 3°C, which can cause hypothermia and threaten the safety of climbers (Hakim, 2011). In addition, the danger of landslides from the volcanic material of Mount Semeru can be lethal to climbers (Meilani et al., 2018).

However, these risks do not affect the climbers of Mount Semeru. They choose to continue climbing despite an element of risk just to gain climbing experience (Marrosu et al., 2020). Experiences such as the sensation of enjoying the wealth and beauty of natural scenery and an atmosphere that cannot be found in other places can grow and strengthen the motivation of climbers (Segara and Basyari, 2021). In addition, climbers encounter Flow Experience, which is the sensation of feeling the balance between risk and the climber’s abilities (Mackenzie et al., 2018). Therefore, the natural beauty of Mount Semeru exceeds the risk of climbing, which can threaten the safety of climbers. Climbers who are not aware that the oxygen pressure will decrease, causing fatigue, with every increase in altitude (Gasser, 2022), can experience health problems (Luks et al., 2017). Climbing tourism cannot be equated with other tours; it is necessary to recognize the characteristics of the location, the level of climbing, physical and mental preparation, food management, and climbing attributes (Riungu et al., 2018).

This research was conducted with the goals of discovering and elucidating the significance of mountaineering expeditions in the hazardous volcanic region of Mount Semeru, as well as investigating the manifestations of fear that mountaineers experience while traveling in regions that are in danger from Mount Semeru.
The Mount Semeru hiking trail has a climbing track length of 18.3 km with varying slopes (Figure 1). The climbing route segmentation is as follows: (1) Ranu Pani (2,109 masl)-Ranu Kumbolo (2,382 masl) route ([x̄] slope 16.6 degrees, distance 10.6 km), (2) Ranu Kumbolo Line (2,382 masl)-Kalimati (2,672 masl) ([x] slope 13.1 degrees, distance 4.6 km), and (3) Kalimati Trail (2,700 masl)-Semeru Mountain Peak (3,676 masl) ([x] slope 43.7 degrees, distance 3.1 km).

The Phenomenological Approach

Phenomenology is philosophical research that deals with the meaning of phenomena experienced and felt by individuals. Individual feelings are constructed from knowledge and experience; thus, the interpretation of data provided by individuals is subjective (Mohajan, 2018). Phenomenology is studied in qualitative research as an approach that aims to interpret deep understanding based on the direct experiences of individuals (McLeod, 2019; Mohajan, 2018; Ziakas et al., 2014). Phenomenology in tourism studies has not been widely used, although it can be used as a significant analytical tool.
regarding the tourist experience (revealing the meaning of the experience) (Noy, 2008; Timothy, 2008; Hermanto, 2021). The research in this article uses an existential-phenomenological approach to the tourist experience of climbing Mount Semeru. This research has an important position because it explores a multifaceted phenomenon from an individual’s point of view. Dimensions for understanding the tourist experience can be understood from five types of experiences: recreational, diversionary, experiential, experimental, and existential. This type of experience proves that a comprehensive understanding of tourists is influenced by place (location) (Guachalla, 2018). This research focuses on revealing the importance of life experiences and the meaning of individuals (climb tourists) through phenomenological analysis.

The Semeru Active Volcano climbing tour was chosen as a case study for the following reasons: (1) Mount Semeru is a Strato volcano with a Vulcanian-strombolian eruption type with the epicenter of the eruption at the active crater “Jonggring Saloko,” with an internal structure dominated by sedimentary sandstone and rock with cavities and toxic gases (sulfur dioxide, carbon dioxide, and hydrogen sulfide) and (2) Mount Semeru is one of the highest mountains (3,676 meters above sea level) on the island of Java, Indonesia, and is a favorite mountain for local and foreign climbers because the hiking trail passes through Lake Ranu Kumbolo, Jambangan Grasslands (cypress, Mentigi, and Edelweiss plants), Savana Oro-Oro Ombo (Purple Verbena Flowers), and Cemoro Kandang Forest (*Casuarina junguhhmiana*).

Informants were determined by using a purposive sampling technique. In this phenomenological study, researchers look for information (individuals) who have the capability so they can articulate their life experiences related to the phenomenon under study. Therefore, researchers conducted in-depth unstructured interviews with more than 18 climbers but provided detailed information on only ten climbers of Mount Semeru in April 2021. The number of respondents was deemed sufficient to conduct phenomenological interviews (Groenewald, 2004; Wimpenny and Gass, 2000), considering the data is getting saturated. Each respondent interview took two to three hours. The purpose of the in-depth interviews was to understand the phenomena used (terms) by the respondents (Deterding and Waters, 2021). Interviews are the basis for an exchange of perspectives between respondents and researchers (McGrath et al., 2019), where researchers try to understand phenomena from the respondent’s point of view to reveal the meaning of their experiences (Mohajan, 2018).

Unstructured and open interviews are important keys to building respondents' social interactions (McGrath et al., 2019) in gathering information. This form of interview allows researchers to follow the respondents' interests, feelings, and thoughts (Mohajan, 2018). The following are basic questions that focus on experiences, feelings, beliefs, and convictions about climbing in the risky area of Mount Semeru: (1) How was your climb in the risky area of Mount Semeru? (2) What do you like about climbing Mount Semeru? (3) How do you feel when you climb Mount Semeru? (4) What is your impression of climbing Mount Semeru when compared to other mountains in Indonesia? and (5) What experience did you get from climbing Mount Semeru? The basic questions in the study of phenomenology are deliberately generalized (Levitt, 2021) and aim to make it easier for tourists to describe and interpret the presence of
tourists on a hike. Researchers invite respondents to describe life experiences in chronological order of climbing activities and to describe whether certain events have a positive or negative impact on their experiences. Interview results were recorded and transcribed, then exploited to extract the meaning. The validity of the examination results is addressed to the respondent in a summary of the interview to confirm whether the essence of the experience and its meaning is correct. To understand the perception of risk, it is necessary to go through and share the experiences and emotions of the respondents; thus, the researchers conducted participatory observations.

**RESULTS**

**Enjoy Climbing, Learn to Control Fear**

Climbing Mount Semeru in April 2021 leaves an everlasting impression and experience for climbers. The most memorable thing is the thrill felt during the ascent due to the rising status of Mount Semeru to level II “Alert.” This status means an increase in volcanic activity and eruptions can occur; thus, climbers are recommended not to carry out activities around the crater (Davis et al., 2013). Baidori, Al-Hadi, and Yustina said that they enjoyed climbing, even when the threat status of Mount Semeru increased:

[…] I was given information by the porter if the status of Mount Semeru was increasing, but my adrenaline was challenged by that information because it was an opportunity for me to enjoy and look for moments of Semeru volcanic activity for my photography and videography content. […] I built a tent in Kalimati at an altitude of 2,700 meters above sea level, enjoyed the sunrise, and looked up at the peak of Semeru while drinking coffee, a beautiful tourist attraction, seeing gas coming out of the crater, even though the status of the mountain was increasing. […] I enjoyed this hike, the tiredness of track was paid for by the natural beauty of Semeru, drinking water from very natural sources, and chatting with outdoor activists at the camping site before the summit attack to Mahameru Peak, a beautiful day.

The hiking trail from Kalimati to the top of Mount Semeru (3676 masl) is 2.8 km long, with an average slope angle of 45° and travel time of five hours by walking along steep volcanic cliffs and mountain materials in the form of stones, gravel, ash, and sand. Fernanda and Yustina shared their experiences; every challenge must be enjoyed with good climbing knowledge and management:

[…] taking the risk of climbing is a decision, identifying and climbing the best route will reduce the risk of injury and more, enjoying the struggle and celebrating the suffering on the trail is fantastic. […] don’t negatively assume the risk of danger, I will continue to climb at the highest level and believe in going home safely because the main purpose of climbing is to return home. […] My and my lover’s hiking trip was not without a plan, all with good and proper management.

Likewise, David and Fahmi expressed positive feelings about climbing Mount Semeru:

[…] when I decided to go on a hike, my goal was not to seek fame through photos uploaded on social media, I have to admit that I wanted solitude, serenity, adrenaline, and the smell of Ranu Kumbolo grass. […] I said to myself, maybe every climbing trip, I will never come back again (lost/died), I try to control what I can. […] I observed many climbers here, in a hurry, lack of logistical preparation and not paying attention to climbing management, I thought how I could enjoy the climbing trip.

Overall, climbers who have good climbing knowledge and management enjoy climbing Mount Semeru. Tourists feel positive things by appreciating the experience gained while climbing, which encourages and motivates climbers to revisit Mount Semeru because, for them, the hardest thing is not conquering the peak of Mahameru but conquering the ego within themselves.

**The Threat of Asking Mount Semeru**

Climbing Mount Semeru is recommended by tour managers only up to the Kalimati Post. The Kalimati route to the summit of Mount Semeru is highly risky because the hiking trail is a bundle of volcanic material avalanches, so the condition of the path is unstable and prone to landslides and rock falls. Fernanda, Al-hadi, and Azizah expressed a fear of heights when first climbing and were worried about threats during the hiking trail:

[…] A few days before I climbed Mount Semeru, it was raining quite heavily, as far as I know, if it rains, there is a potential for landslides and trees to fall due to the fragile soil bonds, this worries me but I remain calm. […] before climbing, all climbers were briefed by the manager of the Mount Semeru climbing tour (Saverindo), regarding the risks of climbing on the Kalini-Peak Mount Semeru route. If a climber sees a rock of eruptive material falling from above, he must shout “beware of falling rock” thus other climbers know it.

On this route, climbers pass many “inscriptions of dead climbers.” Dhimas, Baidori, David, and Fahmi have one perception of this inscription:

[…] The inscription reminds me as a climber never to be arrogant and arrogant toward nature because nature can punish me at any time. […] this climber died from many factors, teaching me that climb management is important to reduce the risk of death or accident. […] we all have to learn from the climbers who died here, that don’t underestimate/underestimate the preparation during climbing tours, I always recognize internal and external factors when I want to climb to a place, without that I don’t go. […] I looked at the inscriptions, there are some inscriptions consisting of more than one person, I think that the risk and management of individual climbing by climbing as a team are different, this is often not realized by other climbers.

In addition, the threat of hypothermia must be considered. Ridwan, Yustina, and Wiksono describe their experiences while on this route:

[…] I feel nervous and I am careful to avoid falling rocks, my friends always remind me to always regulate my breath and body temperature to avoid hypothermia, […] during the first climb, I observed another group of climbers climbing in
wet clothes, pants and shoes due to the rain, 2 of them had hypothermia, they were careless and endangered themselves. […] I saw another climber was suffering from hypothermia, his body was shivering, he was weak, had difficulty speaking and lost his balance, this made me nervous and worried. […] When I meet a hypothermic climber, I suggest warming the body with a jacket or sleeping bag, giving warm water, and palm sugar or warm milk, if there is an emergency blanket with aluminum foil. If in this position, stay calm and don’t be nervous, knowing this is important for every climber.

In the same discussion, Dhimas and Baidori stated that the threat is not only hypothermia but also toxic gases:

[…] Even though I’ve climbed Mount Semeru 3 times, I’m always worried when I reach the Kalini tracking route to the summit of Semeru. On the last hike, I was late to the summit (at 09.15 am), the wind had changed to the hiking trail, unfortunately, it was carrying poison gas. […] when I was hit by this gas, I felt short of breath like poisoning, I immediately ran downstairs while wetting the buff and gloves with water to cover my nose. […] My Garmin GPS records the average temperature at the peak of around 4 – 8 degrees Celsius, for Indonesians like me, who live in a tropical climate, are not used to cold temperatures.

The respondents in this study were receptive to the researcher’s questions. This is good for describing the experiences of respondents in a more varied and holistic way. Hikers with more climbing experience appear to be more experienced and have better climbing management. The experience is constructed from knowledge from previous visits or climbing; the experience leads them to prepare for a better climbing tour.

DISCUSSION

Hiker’s Experience in Enjoying Risky Climbing Tour

It is noteworthy that the selling point of volcanic tourism is the element of fear in itself. The visitors often search for a sense of fear and edging throughout the trip. In the findings, the tourists uncover these experiences. In more detail, the edging experiences conveyed by tourists climbing Mount Semeru in this study described their feelings about how to deal with dangers and risks while climbing. Their perspectives on danger and risk are highly dependent on knowledge and preparedness (Siegrist, 2021) before embarking on a climbing trip. The main source of knowledge cannot be separated from how an individual can feel and observe with his or her senses (Xiong et al., 2021). If climbers are knowledgeable about risks and hazards, this will lead to a positive attitude toward climbing (Huang et al., 2020). Through the logical placement of knowledge and experience, climbers will turn fear into a sense of enjoyment (Singleton, 2019); the more tourists know about climbing conditions, the more they will be able to minimize the risks that could occur (Apollo and Rettinger, 2019). Experience indirectly organizes one’s actions to be better at making wise decisions.

The results of the interview show that climbers have experience in activities on volcanoes (risky). Hikers are well acquainted with the situation of the hiking trail, its risks, and consequences (Littlefield and Siudzinski, 2012; Ritter et al., 2012), thus preparing for the climb well despite feelings of fear and anxiety along the way. The sense of beauty of the interviewee has a different experience and serenity. When a climber enjoys his climbing journey, happiness arises. Happiness does not start with “pleasure” but departs from “serenity”. This is in line with the respondents’ climbing goals: they climb to find peace, unwind from work and thoughts, and enjoy the scent of the morning dew of the wild. Peace of mind relieves anxiety from the negative effects of climbing (Oh et al., 2020). Happiness results from individual struggles and successes in interpreting life. Traveling happiness is subjective; therefore, it is interpreted differently by each person (Gao et al., 2018; McCabe and Johnson, 2013). Happiness is the result of construction that refers to different levels, mental states, and psychological concepts. Meanwhile, interpreting one’s life depends on the background experience that has passed (Mohajan, 2018). Climbers interpret the climb positively because of the belief that challenges and obstacles exist but can be passed wisely. The meaning of life also comes from pleasant and unpleasant conditions (suffering) faced by individuals (Bueno-Gómez, 2017). Happiness is perceived as an indicator of subjective well-being and refers to experiencing joy and rarely emotions the effect of vacation trips for climbing affects psychological conditions.

Vacation trips provided a beneficial experience for the climbers in this study, and experiences were gained, such as new knowledge, pleasure, mental health, satisfaction, and happiness (enjoyment). Tourists associate happiness with the quality of life. This is in line with the study of Lohmann and De Bloom (2017) in their book Happiness in a Tourism Context, which describes emotions as “golden moments,” pleasant experiences, and subjective values that are not followed by positive effects on other dimensions depending on the stimulus and factor situational context (e.g., physical, social); this creates a more lasting effect. Thus, happiness is one of the deciding factors in determining tourist destinations.

Experience of Climbers in Facing Threats from Ascent Risk

Even though mountain climbing is considered risk, it is full of fun for specific group of people, including the volcano tourists. This ‘dealing with risk’ attitude has been the commercial branding for volcanic tourism. Climbers state that safety and fear are important factors in climbing tourism. This supports similar previous research Dunets et al., 2019; Kessler, 2019; Kozak et al., 2007; Monasterio, 2015). The tracking path on climbing Mount Semeru is high risk (Meilani et al., 2018). Climbers show concern and fear but have an anticipatory attitude. Anticipatory attitudes toward the dangers of traveling in risky areas arise from previous experience or information from others. Anticipatory attitudes are individual beliefs that respond to negative things during tourist trips (Bergs et al., 2020; Nawijn and Biran, 2019). This attitude also reflects the desire to avoid the repetition of negative things and lessen worry (Luo and Lam, 2020).

As many as 31 climbers died on this route, while 23 climbers had been injured in the last ten years. Anxiety arises from feelings of fear and alertness to threats or unpleasant things (Milyavskaya et al., 2018). Anxiety is a response to certain situations and is a normal thing that accompanies development (Campbell et al., 2020) and changes in new
experiences that have never been done to form self-identity and give meaning to life (Crone, 2021). Anxiety helps individuals be alert to take steps to prevent harm and or minimize the impact of harm (Zsido et al., 2020). The fear that arises from the climbers is caused by seeing directly and clearly the heights that threaten the climbing route.

During the journey, climbers express fear and worry not to fellow climbers but rather about natural threats. This is in contrast to most fears and concerns of female climbers, who are concerned about harassment, actual violence, and difficulty mingling with other climbers (Osman et al., 2020; Wilson and Little, 2008). This study makes it clear that on a tourist trip (climbing), there is intimacy, solidarity, concern, and togetherness (Beedie and Hudson, 2015). There is clear evidence that travel is also meant to strengthen, cooperate, and maintain the same goal, namely enjoying the peak of Mahameru. The meaning that has been successfully revealed is that climbing is not to prove strength but to suppress, recognize, and be aware of one’s weaknesses, following the research findings of Janowski et al. (2021), and Lötter and Welthagen (2020). The climbers’ experience of Mount Semeru in this study reflects learning as a form of expressing a constructive impression. Climbing tourism is a special interest tour; it has a different purpose from other tours.

The climbing trip fosters a sense of courage and self-confidence (Kangas et al., 2018), so it is necessary to prepare for the worst that will happen. A climber is faced with independence and responsibility (individual and group responsibility). Strength and emotional control are the keys to happiness in climbing (Lötter and Welthagen, 2020) because of the extraction from a struggle in the face of challenges and difficulties: the courage to take responsibility, courage to manage emotions in the face of physiological stress, dehydration due to long journeys, phobia of heights, and all that makes human performance decline. Thus, the risk of fatigue, serious injury, and mental error increases the higher a climber goes (Blakely et al., 2021; Osborne, 2021; Raue et al., 2018). The probability of reaching the peak is inversely proportional to the risk of death (the higher the risk of traveling, the higher the risk of death).

CONCLUSION

This paper has unfolded a variety of social meanings of climbing for different respondents. At the individual level, this activity is undertaken to vent out inner voices and self-evidence that the fear of heights is just imagination. Secondly, for some respondents, being at a high altitude allows them to make sense of solidarity and sustain nature engagements. Thirdly, this activity helps them to identify and evaluate the critical points of being in high altitudes and the possible risks involved. The ascent of Mount Semeru is considered to be one of the most hazardous activities available to tourists due to the presence of a treacherous ascent route, the risk of hypothermia, the presence of toxic gases, and the possibility that Mount Semeru will erupt. In spite of the potential for life-threatening volcanic eruptions, it is safe to say that the mountaineers who attempt to scale Mount Semeru have a tremendous amount of courage. This courage arises because climbers want to enjoy tourist attractions or the beauty of natural scenery and gain valuable experiences.

Climbers experience a variety of threats and fears along the climb, all of which must be effectively managed in order to fully appreciate the stunning natural splendor of Mount Semeru. Not only that, the climbers of Mount Semeru consider the journey to the summit as risky as an adrenaline-pumping challenge, although the feeling of worry and fear of threats or accidents persists. The climbers are able to control the sensation of anxiety they have while on the journey by mastering their feelings to maintain composure and continually think positively. The Mount Semeru climbing trip provides moral and spiritual values manifested by several behaviors, such as increasing awareness of the threat of disaster, being careful during the trip, not being underestimated, and not feeling arrogant in all conditions. The climbers realized that there were many threats during the journey to the summit; fear, anxiety, and worry were countered to reach Mount Semeru.

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