

# Family resilience in adapting to the conditions post the natural disaster of mount Semeru eruption in Supiturang and Sumberwuluh Village, Lumajang

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**Abstract.** Family resilience is essential for an individual's adaptation to diverse conditions. The eruption of Mount Semeru has occurred since 2021 until now in Supiturang and Sumberwuluh Villages, Lumajang. The purpose of this study was to determine how family resilience in adapting to the post-eruption conditions of Mount Semeru in Supiturang and Sumberwuluh Villages, Lumajang. The research method uses a qualitative approach, with purposive sampling techniques, the criteria for informants for this research are (1) residents of Supiturang or Sumberwuluh village, (2) directly affected by the eruption, (3) loss of family members and property (4) not traumatized. There were eight respondents. Data were collected using semi-structured interviews. The collected data were analyzed using interpretive phenomenology. The results showed that the tremendous impact of the eruption left a deep impression on life experience. This leads to stress and crisis due to the various difficulties they face. Family resilience carried out: 1. Beliefs, which contain values direct how the family responds to difficulties that occur. 2. Manage the resources they have, both family members who can be involved, land that can still be cultivated and social support that supports each other. 3. Establish Communication with all family members in dealing with crisis situations.

## 1 Introduction

Indonesia is one of the countries that has heterogeneous landscapes, one of which dominates is the landform of volcanic process. Therefore, Indonesia is referred to as the Pacific circum. The Pacific circumference is a seismic belt where many tectonic plates meet. The Pacific circumference makes up about 75 percent of the world's volcanoes. Reporting from National Geographic, 90 percent of earthquakes in the world originate from the Pacific Circumference. Thus, the territory of Indonesia is vulnerable to earthquakes, volcanoes, and other natural disasters due to volcanic activity. Indonesia has 13% of the number of volcanoes in the world, namely as many as 129 mountains with active status and 500 inactive mountains (Gosal, et al., 2018). The existence of its mountains spread throughout Indonesia, except Kalimantan. Kalimantan is the only area that is not traversed by a volcanic belt, so the landscape in this region is dominated by structural processes. While the area dominated by volcanic processes, includes the islands of Sumatra, Java, and Nusa Tenggara. This has an impact on the number of volcanic eruption events that occur. However, what exactly are the impacts of volcanic eruptions?

In addition to having a positive impact, which has tourism potential, volcanic ash can also fertilize the soil. According to Shoji and Takahashi (2002) the volcanic material is a material rich in nutrients, so it can renew land resources. In addition, sand and rock materials can be used for building materials. According to Yuswanto and Pramudiyanto (2015), the addition of volcanic ash as much as 20% in making concrete will produce a fairly good product. In addition to positive impacts, mountain eruptions also have a negative impact, namely there are risks that must be borne by people close to the volcano. According to Tilling (2013), the more densely populated, especially those occupying the slopes of volcanoes, increases the risk of volcanic eruption disasters.

In 2021, Mount Semeru, which is located on the border of Lumajang-Malang regency, precisely December 4, 2021, its eruption has had an impact on casualties. At least 51 people were killed, 169 injured, and 22 missing. 45 people suffered burns. Mount Semeru until July 14, 2023 again experienced an eruption or eruption accompanied by avalanche hot clouds. Even a few days ago on October 1, 2023 the eruption was still happening, this eruption was recorded on a seismograph with a maximum amplitude of 22 mm and a duration of 127 seconds. The highest volcano on

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the island of Java is still on alert status or level III until now (Sholichah, 2023).

Head of the National Disaster Management Agency (BNPB) Suharyanto said the six villages were Sumberurip and Capiturang in Pronojowo District; Sumbersari Village in Rowokangkung District, Sumberwuluh Village and Penanggal Village in Candipuro District; and Pasirian Village in Pasirian District. (Maulana, 2022). While Resty (2022) stated that among the villages mentioned above, there are two villages that are most affected, namely Capiturang Village and Sumberwuluh. In this study, capiturang/supiturang and Sumberwuluh villages were chosen for research because they were the villages most affected by the eruption.

Disasters can occur at any time, and maybe not only in Lumajang, because Indonesia is a volcanic mountain plate path, similar disasters can occur in any area traversed by the route. Every disaster event always has an impact, both positively and negatively. Therefore, every individual needs to have resilience. Individual resilience affects his life experience (Perlman, et al, 2017). In Finklestein's research, et al (2022) suggest that adolescents who believe their families are resilient are also more resilient individually and less anxious about facing tensions or unsafe situations. The level of family resilience and perceptions of social support within the family can increase individual resilience (Chen, et al, 2021).

As individuals directly affected by the eruption, it takes time to be able to accept and readjust to current conditions. An interview with one of the victims affected by the eruption revealed:

*"We felt very scared, scattered with the family, the rain of dust that suddenly darkened and the search for the family was no longer there, each person tried to save themselves"*

It takes individual resilience to be able to deal with crisis situations. The eruption of Semeru became a stressor for affected individuals. The family is expected to be a support system in individual life. In the research of Zhuo, et al, (2022) it was found that family resilience can predict mental health. Increased family resilience can improve an individual's meta-mood to alleviate mental health issues.

Family resilience is a construction based on interactive processes occurring within the family, allowing the family to effectively cope with everyday stressors, as well as developmental and unexpected crises. (Natalia, et al (2022). Family resilience is the capacity of a family to reduce the difficulty of using its resources, structure, and internal connections. (Yang, et al, 2021). The concept of Indonesian family resilience from Sunarti (2001) explains that family resilience involves the family's ability to manage the problems it faces based on the resources it has to meet the needs of its family. This is measured using a systems approach which includes input components (physical and non-physical resources), processes (family management, wrong family, coping mechanisms) outputs (fulfillment

of physical and psychosocial needs). Family resilience is a holistic concept that weaves the train of thought of a system, starting from the quality of resource resilience, coping strategies, and 'appraisal'. Family resilience is then seen as a process of adaptation to challenges to psychological well-being.

In a researcher interview with a family affected by the eruption, they said:

*"We don't have a whole family anymore, our livelihood is gone. But we returned to this village hoping that there was still land that we could improve to manage again, starting a new life instead of just relying on hoping for people's help. Some families returned to this village together to help each other and try to grow crops, repair our houses that were damaged and destroyed by the eruption"*

This condition illustrates that a family has a dynamic to be able to survive every difficulty faced. They try to adjust to current conditions by staying optimistic, hopeful and starting a new life.

Walsh (2003) in presenting his concept explained that there are 3 main elements in family resilience, namely: (1) Family Belief System; (2) Organizational Patterns; (3) Communication Process. The first aspect, the belief system, contains shared values and beliefs that will direct how the family responds to difficulties. For example, families who embrace the value that "after adversity, there must be ease" tend to feel optimistic and feel able to overcome crises. Certain other values that families have also allow them to interpret difficulties in a positive way. As from an interview with one of the affected families, they stated:

*"We believe that with God's help, usually after an eruption, the lands become fertile and communication with families is much better because of mutual understanding and fear of losing families again. Although at the beginning we often had economic difficulties and conflicts, we are now able to return to our village."*

The second aspect, namely organizational patterns, is related to how the family manages or manages the resources it has, the members in it and the social environment around it in dealing with difficult situations. After experiencing a series of crises, it is not easy for the family to immediately return to normal life as before. Families need to adapt again. deep. In this situation, each family member must support each other and work together to restore the post-crisis situation. The third aspect is the pattern of communication. When stressful crisis situations occur, communication and relationships between family members easily deteriorate. For example, when a family member intentionally hides information because they don't want to add to other members' anxiety, it can have an impact on their lack of each other because the information each member receives is not intact.

Furthermore, Yang, et al (2021) suggest that the level of family resilience varies, the more physical and financial capital they have, the more internal cooperation within the family. The more natural and traditional social capital a family has, the less internal cooperation within the family. The more resources a family has, the greater the resilience of the family it has. (Yang, et al, 2021).

Based on this research, it is known how important a family resilience is in increasing individual self-resilience. Therefore, the purpose of this study is to determine the resilience of families in adapting during the eruption of Mount Semeru in the villages of Supitrang and Sumberwuluh, Lumajang.

## 2 Methods

The approach in this study uses qualitative phenomenology. According to Parker (in Kahija, 2017) phenomenology is reflective research about the essence (core) of consciousness experienced from a first-person perspective. Meanwhile, according to Smith and Flowers (in Kahija, 2017) phenomenology is a philosophical approach to research on experience where the basic principle of phenomenological research is that experience must be examined by paying attention to how the experience occurs (in a person's life) and (discussed) terms that are not separated from the experience.

Research subjects were selected based on purposive sampling techniques, namely sampling techniques as a source of data with certain considerations, with criteria according to the research objectives. The criteria for informants for this study are (1) residents of Supitrang Village or Sumberwuluh, (2) directly affected by the eruption, (3) loss of family members and property (4) not traumatized, so as to be able to retell all the experiences of Mount Semeru eruption. Based on these criteria, eight informants were determined who could provide the best, relevant and most in-depth information (Njie & Asimiran, 2014). The data collection technique uses semi-structured interviews. According to Sugiyono (2016) this type of interview includes indept interviews, which in their implementation are freer when compared to structured interviews. The secondary data in this study are volunteers who at the time of the eruption were directly involved in helping the affected community, and were willing to be involved as informants in this research. The unit of analysis in this study is a form of family resilience in adapting to the post-disaster conditions of the eruption of Mount Semeru.

Here are the informant data in this study:

In this study, data was collected through in-depth interviews using interview guidelines that are in accordance with the needs of the analysis (semi-structured interview). In semi-structured interviews, the number of questions is no longer important, because questions can be developed again during the data collection process. Qualitative data has been analyzed using interpretative Phenomenological Analysis (IPA) by running three research pillars, namely

phenomenology, hermeneutics, and idiography. With the following steps: 1. Read many times, 2. Initial noting, 3. Make emergency friends, 4. Create subordinate themes, 5. Look for patterns, 6. Structuring the entire superordinate theme. Strengthening research credibility using data source triangulation techniques. Data were obtained through interviews from secondary participants.

**Table 1.** Research participants.

Partisipant	Living Family Members	Family Members who died/affected	Affected Property
Family 1	Informan S	- Child - Wife	- Heavily damaged house - Farm animals
Family 2	Informan D Wife	- Child	- Heavily damaged house - Farmland - Hewan ternak
Family 3	Informan B	- Husband	- Heavily damaged house - Farm animals
Family 4	Informan P	- Separated from wife and children	- Farm animals
Family 5	Informan N Wife	- Child 1 (from 4 children)	- Heavily damaged house - Farmland
Family 6	Informan M Husband	- Parent	- Heavily damaged house - Farmland
Family 7	Informan A Wife	- Child and wife (meet rescued volunteers)	- Heavily damaged house - Farmland
Family 8	Informan Y	- Separated from wife and children	- Heavily damaged house - Farmland

## 3 Result

The impact of the eruption of Mount Semeru is still felt in the next life after it happened. All those affected perceive the eruption event as a calamity from a natural disaster beyond human control. Within their limitations they are in a realization that everything that happens to them is already divine will. Therefore, the belief in the strength above them makes them surrender by persisting in the difficulties faced, but there is a belief that they will be able to go through all these processes and optimistically be able to face them. The following data supports:

*'We're still on standby and not really sleeping well at night, fearing there's another eruption'*

*'We have no possessions other than here, so we come back here hoping to grow crops again while repairing the house to live in again'*

*'The loss of a family member is a deep sadness and is not as happy as it used to be'*

The following is the narrative given by informants about how their families resilience after the Merapi eruption disaster:

*'Resigned and feeling helpless but confident in God's help'*

*'Discussions with family to continue living, in the past the wife often misresponded so that in the end she quarreled because of stress there was no cooking, no money, just making food difficult'*

*'The wife's son helped clean up the dust and wooden ruins supporting the house....repairing makeshift houses, replacing broken tiles, looking for houses that were no longer lived'*

*'Growing vegetables for food, rice given by volunteers, there is also government assistance'*

Based on the results of interviews from informants, emergency themes and superordinate themes were obtained as follows:

**Table 2.** Emergent themes and superordinate themes.

Informan	Emergent Themes	Superordinate Themes
S	The first eruption lost its only child and property, the second eruption lost property, such as houses, cattle and goats and a month later lost his wife. If there is another eruption, we will surrender and surrender to Allah. At first it was not able to accept the situation caused by this eruption, but now it is starting to accept that this calamity is a reminder of all sinful sins and believes in every trial there must be wisdom even though it is still hard to accept it.	<ul style="list-style-type: none"> <li>- Loss of family members, property and farm animals.</li> <li>- Resignation and surrender</li> <li>- Already able to accept the disaster even though it still feels heavy.</li> </ul>
D	The eruption affected farmland and some of its livestock buried in Semeru's overflow sand, damaged houses and slowly now repaired and re-lived. Feeling that his family is not as happy as before. Separated by distance from children who currently live in temporary housing, closeness with children is getting farther because children rarely visit. If there is a conflict with the wife, it is left to go to the rice field to avoid quarrels.	<ul style="list-style-type: none"> <li>- Loss of property and farm animals.</li> <li>- Feeling like your family isn't as happy as it used to be</li> <li>- Frequent conflicts with wives</li> </ul>
B	Living alone, her husband died and her son rarely visited her, it became more difficult to find sustenance, especially after the bridge broke. Feeling sad and lonely because her children care less, but also feeling grateful that there are still neighbors who care about giving food. Feel happy when there is a village event such as a recitation or association because you can meet many people.	<ul style="list-style-type: none"> <li>- Scattered families</li> <li>- Economic hardship</li> <li>- Feeling sad and lonely</li> <li>- Be grateful for the care of neighbors</li> <li>- Need social support</li> </ul>
P	As a result of the eruption, the house was damaged. Returning to the location because of farming livelihood and returning to the village of supiturang again, repairing the house gradually, but far away from the wife who chose to live with the child. The wife only comes back to the village if P is sick, usually with the neighbor calling her to take care of her. Communication in the family is not open, when there is a conflict due to a dispute or incompatibility, choose to silence each other. However, current conditions have more often exchanged stories about each other's conditions.	<ul style="list-style-type: none"> <li>- Scattered families</li> <li>- Loss of livelihood, difficult economy</li> <li>- Communication with family is difficult and not open</li> </ul>
N	lost 1 child out of 4 children. The 2nd eruption was hit by pieces of wood supporting collapsed houses. To make a living by farming. Can only surrender and not communicate too much with his children, feeling that he does not want to burden his children who already have a family. When feeling lonely, more often go to the nearest neighbor and exchange stories.	<ul style="list-style-type: none"> <li>- Loss of family members, property</li> <li>- Survive by Farming</li> <li>- Need support from their social environment</li> </ul>
M	Losing both parents and two nephews to the volcanic ash of the eruption, it is very sad to lose many of his family. Currently only living with my husband, returning to the village to take care of the land to grow crops again and slowly repair damaged houses, had stress because the conditions were very difficult after the eruption. Stay afloat and neighbors around him support each other in the face of difficult situations. Together with my husband work together to make a living in farming. There is a feeling of fear of loss but the relationship with the husband is getting better, communication is getting more open.	<ul style="list-style-type: none"> <li>- Loss of a family member</li> <li>- Sad</li> <li>- Survive by working with your husband to grow crops</li> <li>- Support each other's neighbors in dealing with difficult situations</li> </ul>
A	During the eruption the hampie lost his wife's children, but tried to find them again. houses are damaged, property is all gone, rice fields and crops are damaged, return to	<ul style="list-style-type: none"> <li>- Loss of family members, property,</li> </ul>

Informan	Emergent Themes	Superordinate Themes
	the village to cultivate land as a livelihood field, improve relationships with family, surrender more to God, believe all events from God and help also from God.	<ul style="list-style-type: none"> <li>- Improve land by growing crops to sustain life</li> <li>- Resignation to God, believing in all events and help from God</li> </ul>
Y	Homes, property and farmland were damaged by volcanic ash from the eruption. Early life became very difficult. But thankful for the many help and volunteers who helped. After experiencing a series of crises, it is not easy for the family to immediately return to normal life as before. Communication and relationships with family members deteriorated due to economic difficulties. In need of adapting again, each family member supports each other and works together to restore the situation.	<ul style="list-style-type: none"> <li>- Loss of property</li> <li>- Hard life</li> <li>- Grateful for a lot of support</li> <li>- Communication with family deteriorates due to economic difficulties</li> <li>- It takes effort to support each other and work together with the family</li> </ul>

The next step is to create a pattern of the superordinate theme of each participant, as follows:

**Table 3.** Impact of Eruption and Forms of Family Resilience.

No	Main Themes	Superordinate Themes
1	Impact of the eruption	<ul style="list-style-type: none"> <li>- Loss of family members, and family disintegrated</li> <li>- Loss of property</li> <li>- Loss of livelihood (farm animals, farmland)</li> <li>- Stress and crisis due to various difficulties, not as happy as before.</li> </ul>
2	Forms of Family Resilience	<ul style="list-style-type: none"> <li>- Resign and confident in God's help</li> <li>- Re-manage property that can still be functioned such as agricultural land</li> <li>- Engaging family members to seek livelihood</li> <li>- Need social support</li> <li>- Communication with family</li> </ul>

## 4 Discussion

The results showed that the tremendous impact of the eruption left a deep impression on the experience of life, especially those who experienced pain and sudden loss or death of family members. This caused stress and crisis due to the various difficulties they faced as a result of the eruption. They believe that they will be able to get through all these conditions, and try to adapt to the current circumstances. Forms of family resilience carried out: 1. Beliefs, which contain shared values and beliefs direct how the family responds to difficulties that occur. 2. Manage the resources they have, both family members who can be involved, land that can still be cultivated for them to survive and the surrounding social environment that supports each other in facing difficult situations. After experiencing a series of crises, it is not easy for the family to immediately return to normal life as before. Families need to adapt again, in this situation, each family member must support each other and work together to recover from the post-crisis. 3. Communication. When stressful crisis situations occur, communication and relationships between family

members easily deteriorate. Therefore, build open communication with all family members.

This result is in line with the opinion of Walsh (2003) who explained that there are 3 main elements in family resilience, namely: (1) Family Belief System; (2) Organizational Patterns; (3) Communication Process. The first aspect, the belief system, contains shared values and beliefs that will direct how the family responds to difficulties. For example, families who embrace the value that "after adversity, there must be ease" tend to feel optimistic and feel able to overcome crises. Certain other values that families have also allow them to interpret difficulties with a positive framework. For example, difficulties as a means to strengthen family ties. The second aspect, namely organizational patterns, is related to how the family manages or manages the resources it has, members in it and the surrounding social environment in dealing with difficult situations. After experiencing a series of crises, it is not easy for the family to immediately return to normal life as before. Families need to adapt again. In this situation, each family member must support each other and work together to restore the post-crisis situation. The third aspect is the pattern of communication. When stressful crisis situations occur, communication and relationships between family members easily deteriorate. For example, when a family member intentionally hides information because they don't want to add to other members' anxiety, it can have an impact on their lack of each other because the information each member receives is not intact.

## 5 Conclusion

The tremendous impact of the eruption left a deep impression on the experience of life. This causes stress and crisis because of the various difficulties they face. Family resilience carried out: 1. Beliefs, which contain shared values and beliefs direct how the family responds to difficulties that occur. 2. Manage the resources they have, both family members who can be involved, land that can still be cultivated for them to survive and the surrounding social environment that supports each other in facing difficult situations. 3. Open communication

with all family members in dealing with crisis situations full of stressors.

This study has limitations that do not involve all family members who are still there to complete data or information. Secondary data is only taken from volunteers who helped during the eruption and afterwards until now from donors who care economically for victims.

Suggestions and recommendations for scientific development both from a theoretical and practical side are further research that can explore family empowerment that contributes to family welfare. Practically can develop community service programs based on family resilience assistance.

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