

Disaster Education and Social Media Use Influence Disaster Preparedness in Coastal Communities

Falih Ijlal Septian^{1*}, Edwin Rizal², Ute Lies Siti Khadijah³, Rully Khairul Anwar⁴

^{1,2,3,4}Faculty of Communication Sciences, Padjadjaran University, Indonesia

*Corresponding Author E-mail: falih17001@mail.unpad.ac.id

Abstract

This study aims to examine the impact of disaster education and social media usage on disaster preparedness in coastal communities, focusing on Masawah Village in the Cimerak District, Pangandaran Regency. The research was conducted using a quantitative survey method with data collected from a sample of 100 respondents selected through probability sampling with a cluster sampling approach. Data were analysed using Partial Least Squares (PLS) with SmartPLS 3.0 software. The findings reveal that both disaster education and social media usage significantly influence individual intentions and actual disaster preparedness. Additionally, the mediating role of intention is identified, highlighting its importance in linking disaster education and social media usage to preparedness. These results suggest that disaster education should incorporate practical training and community participation, while social media campaigns should leverage popular platforms like WhatsApp and TikTok to engage wider audiences effectively. This study contributes to the literature by integrating the Theory of Planned Behavior (TPB) to explore the mediating effects of intention in disaster preparedness. It offers practical implications for policymakers and disaster management organisations to enhance community readiness. The originality of this research lies in its focus on a coastal community and its use of TPB as a theoretical framework, addressing gaps in previous studies that have not thoroughly investigated the role of social media in disaster preparedness.

Keywords: Divorce; disaster education, social media, disaster literacy, preparedness, coastal communities.

Abstrak

Penelitian ini bertujuan untuk mengkaji dampak pendidikan kebencanaan dan penggunaan media sosial terhadap kesiapsiagaan bencana di masyarakat pesisir, dengan fokus pada Desa Masawah di Kecamatan Cimerak, Kabupaten Pangandaran. Penelitian ini menggunakan metode survei kuantitatif dengan pengumpulan data dari 100 responden yang dipilih melalui teknik probability sampling dengan pendekatan cluster sampling. Data dianalisis menggunakan metode Partial Least Squares (PLS) dengan perangkat lunak SmartPLS 3.0. Hasil penelitian menunjukkan bahwa pendidikan kebencanaan dan penggunaan media sosial secara signifikan memengaruhi niat individu serta kesiapsiagaan bencana secara aktual. Selain itu, ditemukan peran mediasi niat yang penting dalam menghubungkan pendidikan kebencanaan dan penggunaan media sosial dengan kesiapsiagaan. Temuan ini menyarankan bahwa pendidikan kebencanaan perlu mencakup pelatihan praktis dan partisipasi komunitas, sementara kampanye media sosial sebaiknya memanfaatkan platform populer seperti WhatsApp dan TikTok untuk menjangkau audiens yang lebih luas secara efektif. Penelitian ini berkontribusi pada literatur dengan mengintegrasikan Teori Perilaku Terencana (TPB) untuk mengeksplorasi efek mediasi niat dalam kesiapsiagaan bencana. Penelitian ini juga memberikan implikasi praktis bagi pembuat kebijakan dan organisasi manajemen bencana untuk meningkatkan kesiapan masyarakat. Keaslian penelitian ini terletak pada fokusnya pada komunitas pesisir dan penggunaan TPB sebagai kerangka teoretis, yang menjawab kekurangan dalam penelitian sebelumnya yang belum secara menyeluruh mengkaji peran media sosial dalam kesiapsiagaan bencana.

Kata Kunci: pendidikan kebencanaan, media sosial, literasi bencana, kesiapsiagaan, masyarakat pesisir.

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INTRODUCTION

Indonesia, the largest archipelago globally, is situated at the convergence of three major tectonic plates: These include Indo-Australian plate, Pacific plate, and Eurasian plate. This geographical location put Indonesia very vulnerable to natural calamities including earthquakes, tsunami and volcanic eruption. Thus, more than 5000 natural disasters were recorded in 2021, and many of them left a significant number of victims and material losses (Badan Nasional Penanggulangan Bencana, 2022). These disasters are caused through geological, hydrological, meteorological, climatological and biology (Chaudhary & Piracha, 2021; Glossary, 2014). For instance, the geophysical disasters are the earthquakes, Volcanic eruptions on the other hand fall under the hydrological disasters are floods and landslides. Other threats that Indonesia faces are still heightened because of its location at the rim of a volcanic belt and the availability of geothermal energy (Pambudi, 2018).

About the quantity of the natural disasters in Indonesia, west java is ranked as one of the provinces of Indonesia with high risk of the natural disasters. It as pointed out by researchers numerous disasters such as; earthquakes, landslides, floods, tornadoes and so on has occurred in all the regions. The highest rate of natural disasters was recorded in 2021 from the West Java province followed by Central Java; the highest number of disasters were landslides. Research conducted by Suriadi et al. (2014) it shows that 21 percent of the total land in Ciamis Regency has a high susceptibility to landslides. The study area located in the northern area of Ciamis Regency has medium to high category of population density that is ranged from 500-1000 persons per square kilometer thus classified this area as highly vulnerable to threat of slope failure or landslides (M.Arsjad & Riadi, 2013). As cited on numerous calamity occurrences, it is therefore imperative for stakeholders to improve on disaster information given the populations' poor perception and understanding. This involves the knowledge of disaster causes, credibility of information, organization of information and dissemination of the same (Marlyono, Pasya, & Nandi, 2016). Disaster specific knowledge which includes the types of disasters, their causes, and prevention and control measures is vital in minimizing risks and their effects on the citizens (Prihantini, Rahmayanti, & Samadi, 2020).

When mentioning disaster literacy, which can be defined as the level of preparedness of the population to address various emergencies, there are two aspects that can be noted: disaster education and the use of media, including social networks. Therefore, disaster education can be described as an effective way of combating the effects of natural disasters. This has major importance in the growth of knowledge and understanding of natural disasters that in turn heightens the community preparedness and decreases the negative repercussions of natural disasters occurrences. Thus, the education on natural disasters should be incorporated into the encompassing as well as the sustainable disaster risk management strategy. (Ihsan et al., 2023). In line with disaster education, improving disaster mitigation literacy plays an important role in reducing community vulnerability to natural disasters. Based on the data (Badan Pusat Statistik, 2018) only 2.39% of households participated in natural disaster simulation and rescue training in 2017. This figure shows that a very small percentage of households participated in the training. However, it is important to note that this low participation does not necessarily reflect a low level of disaster mitigation literacy.

Based on the nature and scope, media especially in Indonesia is considered as an important entity incapable of being detached from the society; it manifests in traditional or conventional media; mass media – traditional and the electronic; as well as new media (Lestari, Ramadhaniyanto, & Wardyaningrum, 2018). This “mediated society” has caused the essence of media to become interwoven in to the every day life. Since the media disseminates such a vast amount of news, it has the responsibility to bear the

consequences of the information provided to the public. To be specific, social media is highly effective in disaster communication, collaboration, and response across and through various stages (Safianu & Van Belle, 2023). For example, BPBD Binjai City employs counseling and mass media to provide disaster information systematically (Tobing, 2022). As for the social media usage in Bali, they revealed that social media is their major source of disaster information (Gelgel, 2020). Nonetheless, prior studies have not comprehensively investigated the discussion about how social media can bolster community preparedness. , based on Safianu & Van Belle (2023), state that although social media is efficient within the context of crisis communication, the general evolvement of the reactions and behaviours of the community requires extensive examinations.

However, prior studies have not extensively examined how the use of social media can improve the community preparedness level. Safianu & Van Belle (2023) point out that crisis communication through SM is proficient, nonetheless, further research needs to be conducted on the growth of community tenor and behaviors. To provide a structured analysis, previous research can be categorized into three primary areas: theoretical assumptions and fundamental research methodologies, and the themes and topics of study. Research has used TPB to determine disaster preparedness behaviors among people Some of the studies that have used the theory include Najafi et al. (2017) and Wang & Tsai (2022) apply TPB as a theoretical framework that relates to psychological factors that affect people's decision-making processes in preparedness for disasters by focusing on attitude, subjective norms, and perceived behavior control.

However, other papers use the Affordances Theory in what they can try to attempt at explaining the use of social media within the disaster response. Another approach employed by Safianu & Van Belle (2023) is a systematic literature review (SLR) as well as meta-analysis to determine the positive correlation of social media on emergency response bearing in mind that they provide timely as well as accurate information at the stages of disaster. In relation to the particular methods applied for the research, there is also the divergence of the quantitative and qualitative methods. Regarding quantitative studies, Wiwik Astuti et al. (2021) attempt to determine the extent to which disaster education enhances teachers' knowledge, while Fauziah et al. (2022) seek to assess the level of students' preparedness as a result of disaster education. In contrast, Suarmika et al. (2022) use qualitative research to reveal the indigenous knowledge systems' aspect of disasters that is less represented in literature that presents ethnographic views of community-centered approaches to disaster resiliency.

With already an impressive number of natural disasters occurring with greater frequency and intensity at that, there is a heightened need to understand how communities can prepare to be hit by such disasters. However, despite prior contributions, the subject remains underexplored, with limited efforts to conduct the comprehensive analysis of community response to the use of social media platforms based on various theoretical and methodological grounds. This study seeks to address this aspect by case study approach that focuses on a village in the Cimerak District of the Pangandaran Regency known as Masawah Village investigating how social media impacts on preparedness and behavioural response to disaster leveraging on the Theory of Planned Behavior (TPB).

The theory used in this study uses the *Theory of Planned Behavior* (TPB) which is the development of the *Theory of Reasoned Action* (TRA) introduced by Ajzen (1991). According to Ajzen (2002) the creation of behavioral intentions is influenced by a combination of attitudes towards behavior, subjective norms, and perceived behavioral control. This paper argued that these perspectives need to be considered in order to build a comprehensive about disaster education and understanding of social media's management during and after disasters. In addition to the above, this study will also provide tangible

recommendations for the use of social media platforms in enhancing disaster communication paradigms, towards enhancing preparedness and build a resilient society.

The underlying assumption of this study is that individuals are rational beings capable of making decisions based on the information available to them. Within this context, intention emerges as a critical factor influencing behavior; the stronger the intention underlying a behavior, the higher the likelihood of the behavior occurring. Guided by this principle, this study hypothesizes that disaster education significantly influences the intention to prepare for disasters (H1), as it enhances individuals' understanding of risks and the importance of mitigation measures. Similarly, the study posits that social media usage significantly impacts intention (H2), as social media platforms serve as effective tools for disseminating timely and accessible disaster-related information, fostering heightened motivation for preparedness.

Furthermore, disaster education is hypothesized to have a direct effect on actual disaster preparedness (H3), equipping communities with the knowledge and skills needed to respond effectively. Social media usage is also expected to directly influence preparedness levels (H4) by facilitating rapid communication and knowledge sharing. Additionally, intention is proposed to play a pivotal role, both as a direct predictor of disaster preparedness (H5) and as a mediating factor in the relationship between disaster education (H6) and social media usage (H7) with preparedness. By verifying these hypotheses, this study seeks to provide a comprehensive understanding of how disaster education and social media can synergistically enhance community readiness, addressing gaps in prior research and offering practical insights for disaster management strategies. The relationships among disaster education, social media usage, intention, and disaster preparedness, as hypothesized in this study, are visually represented in Figure 1, with direct effects indicated by solid lines and mediating effects through intention depicted by dashed lines.

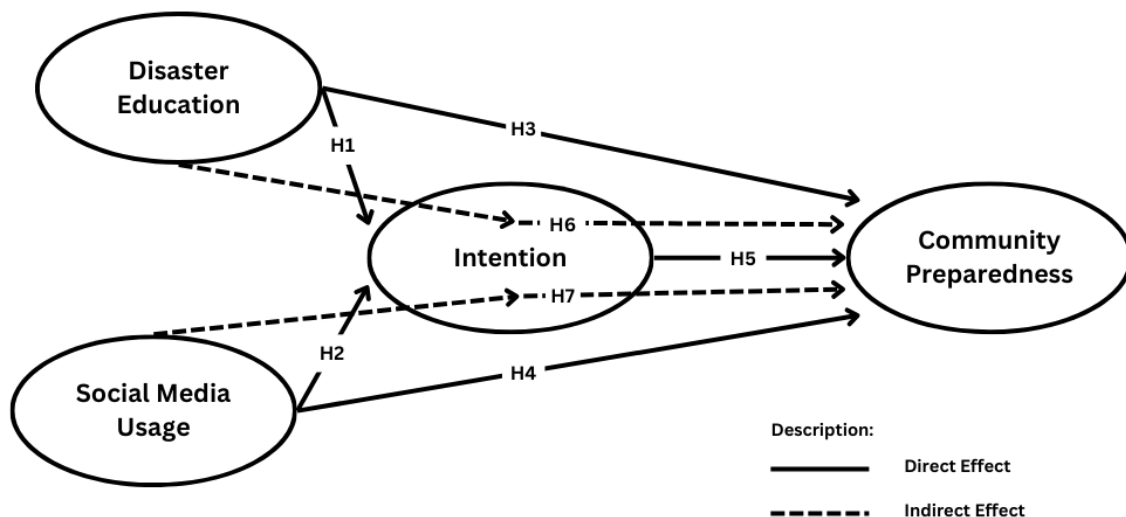


Figure 1. Research Model
 Source: Processed by Researcher (2024)

RESEARCH METHOD

This research uses a quantitative approach with a survey research type. And the analysis used is the Path Analysis technique using SmartPLS 3.0 software. In particular, this study uses the Partial Least Square (PLS) analysis method which offers various advantages over other methods. One important advantage is its ability to effectively analyze small sample sizes and various types of data scales. According to Sugiyono (2011) survey method is a research method that is often used to collect primary data from respondents by distributing structured questionnaires. The population in this study was the people of Masawah Village, Cimerak Subdistrict, Pangandaran Regency. Based on the data obtained, the total population in this study was 4449 people. For sampling techniques using probability sampling with sample types using cluster samples. From the results of calculations using the Slovin formula, a sample size of 100 people was obtained.

Partial Least Squares (PLS) analysis consists of two different components: the measurement model which also called the outer model and the structural model also called the inner model. Indeed, it conducts a Goodness of Fit test to determine if the specified model is appropriate for the collected data. The objective of carrying out fit model analysis is to confirm that the model applied in the study is suitably fitted with data already available so that the outcomes that have been determined can be relied upon.

There is an area known as the Masawah Village, located in Cimerak Sub-district, Pangandaran Regency, where disasters have happened extensively, so this place is ideal for primary research on the disaster situation. The area is known to be prone to flooding whose effect is akely felt in the agricultural segmeent, hence, such a research would be important to establish how the community can work towards enhancing its ability to mitigate the impact of flooding. This position also puts the area at the expense of other disasters including tsunamis and abrasion, which again call for a serious consideration of forms for mitigating the impacts of disasters.

Apart from that, the existing physical settings of rural areas particularly in Masawah Village which includes coastal areas, lowland areas and areas with hilly terrain also making the geographical setting of the area to be complex. Among the measures taken by the community and local government in disaster education and use of social media, the challenge shows a serious effort in preparing for disasters. To this end, these conditions have placed the Masawah Village beyond all other villages in the country as the right location where the impact of disaster education and communication on disaster preparedness can be assessed properly.

RESULTS AND DISCUSSION

Demographic Structure and Social Media Preferences

Masawah is a village in Cimerak Subdistrict, Pangandaran Regency, West Java Province, Indonesia. The village is located at coordinates 7°45'22"N and 108°30'20"E, with an area of approximately 18.479 km². Masawah Village has a topography of plains and hills with an average altitude of 0 - 95 meters above sea level. The morphological shape of the village in the eastern part is in the form of coastal plains, lowlands and increasingly to the west is undulating plains and hills. The boundaries of Masawah Village are: north bordering Batukaras Village, Cijulang Sub-district; east bordering the Indonesian Ocean; south bordering Batumalang Village and Legokjawa Village; west bordering Batumalang Village and Cimerak Village. One of the famous beaches is Madasari Beach.



Figure 2. Madasari Beach

Source: Researcher Documentation, 2024

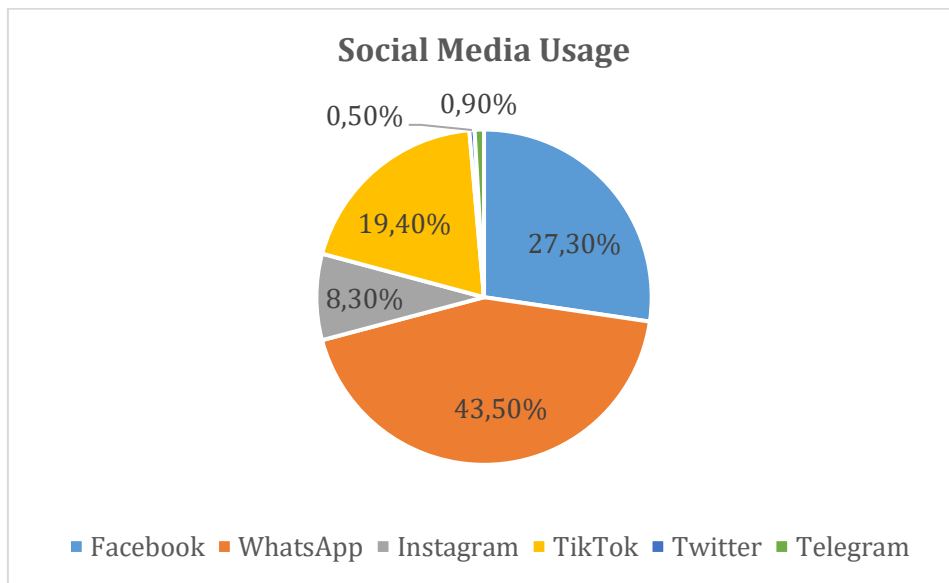


Figure 3. Social Media Usage in Masawah Village

Source: Processed by Researcher, 2024

Based on the results of data processing, it is known that seen from the gender of the respondents, out of 100 respondents, most of the respondents or 53 people (53%) were female and the remaining 47 people (47%) were male. Meanwhile, judging from their age, most respondents are aged 21 years to 45 years. Regarding the use of social media, it is known that WhatsApp is the social media platform most widely used by respondents in Masawah Village (43,50%), followed by Facebook (27,3%), TikTok (29,4%), Instagram (8,3%), Telegram (0,92%), and Twitter (0,5%).

The fact that members of the community opt to use social media such as WhatsApp, Facebook, and TikTok affects the communication tactics for disaster education. Since the use of these social media platforms is high, disaster education programs should incorporate these platforms to cover a wider population proficiently. For example, the disaster management organizations can develop a number of community groups through which users of the application can be notified on time and informed or even engaged in a discussion, regarding disaster management. This can improve the level of participation within a community, and ensure that any important information gets out to the public in a short span of time.

With the popularity of the applications like Facebook and TikTok, liked by millions of users and supporting multimedia opportunities, it is possible to develop meaningful content of videos, infographics, live with tips on the preparation for and coping with disasters. These platforms are most suitable for influencing young people since the latter are most active in receiving information through the social networks. The use of influencers and local leaders on these platforms is also effective in spreading the message to other people within the community and also increase their trust in the message being passed.

Since most of the networks preferred for the posting of disaster education are social, it indicates that, disaster education should be fun, creativity and full of images to keep people engaged. It can assist in avoiding factors that hinder people's participation and guarantee optimal information on events affecting the masses in case of a disaster.

Effectiveness of Disaster Education

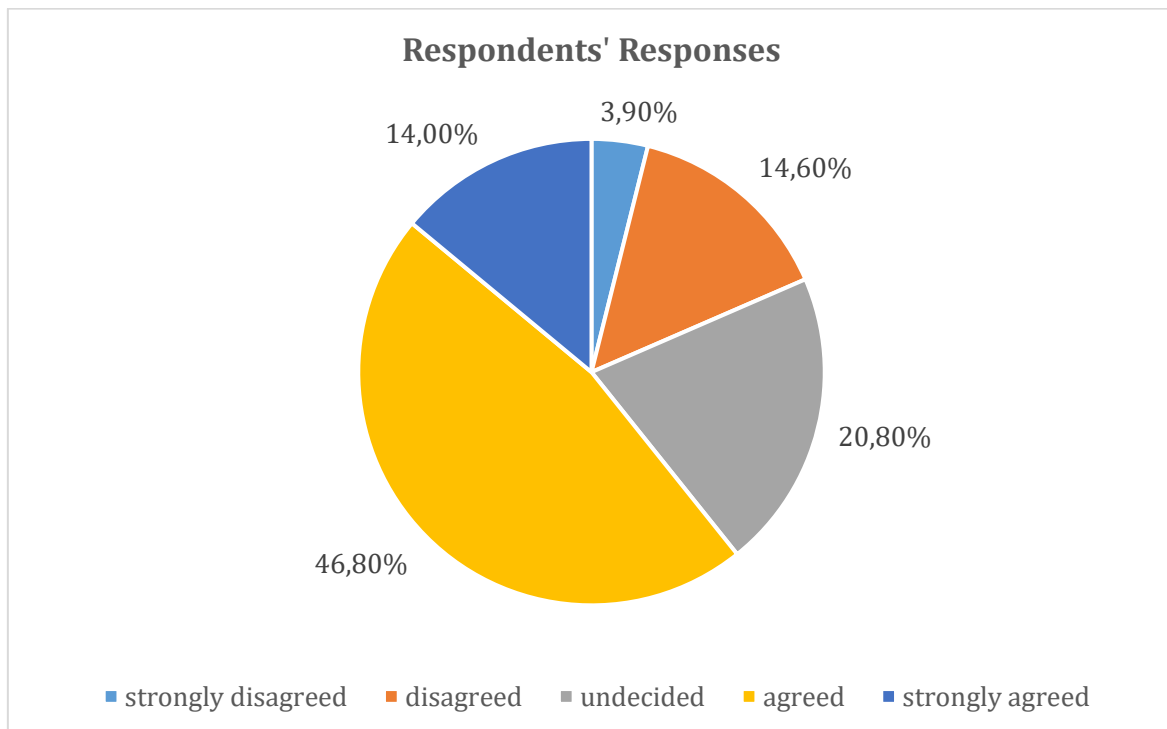


Figure 4. Respondents's Responses to Disaster Education Effectiveness

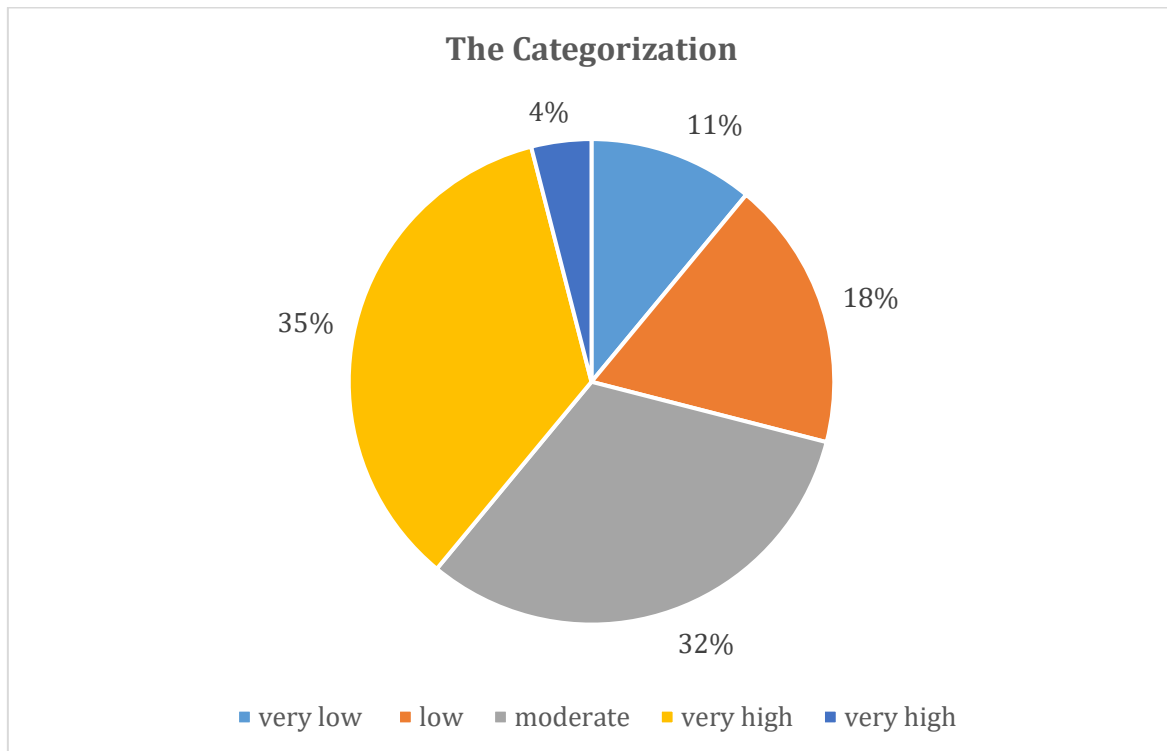


Figure 5. The Categorization of Disaster Education Responses

Source: Processed by Researcher, 2024

The analysis of respondents' perceptions regarding disaster education effectiveness is presented in Figure 4, which shows that the majority of respondents either agreed (46.8%) or strongly agreed (14.0%) that disaster education was effective. Conversely, a smaller proportion expressed disagreement, with 3.9% strongly disagreeing and 14.6% disagreeing. A significant portion, 20.8%, remained undecided. Further categorization of these responses into broader levels of perception, as shown in Figure 5, reveals that most respondents rated disaster education in the moderate (32%) to high (35%) categories, while a smaller percentage placed it in the very high (4%), low (18%), or very low (11%) categories. These findings suggest a generally positive reception of disaster education among the community, although some skepticism persists, warranting targeted improvements in program delivery and content.

From the demographic standpoint, these differences might reflect age, gender, and the preferences concerning the utilization of social networks. For instance, disaster education that is disseminated through the newly emerging technologies such as the social networks could be perceived as easier and more appropriate by the youngsters compared to the older persons who may prefer the more conventional methods. The disparities in the preparedness and response to disasters on gender basis can also be viewed whereby men and women are likely to have a different thought process of the competence of education programs.

The high acceptance rates demonstrated by the community regarding disaster education shows that such programs are important for increasing the level of disaster preparedness. The respondents' positive response suggests that these programmes might meet essential concerns and are communicated in a way that is understandable by the community. To enhance the efficiency of disaster education, more

focus should be placed on the opinions of people who are skeptical about it. Implementing more specific measures regarding the concerns and the leaning preferences of the targeted demographic groups may be useful in attaining more thorough disaster preparedness education.

Therefore, it can be concluded that the overall response to the scale of disaster education is positive but there is a need for improvement by stressing on the perceived efficacy. More emphasis should be placed on identifying and trying to correct the sources of the perceived lack of trust in questionnaires. As a result, the contents and the effectiveness of disaster education programs can be improved that would make everyone in the community prepared and ready to face any disaster that might occur.

Structural Relationship Analysis

In testing the hypothesis, researchers used structural model evaluation. This model is used to ensure a causal relationship between latent variables by testing the relationship between latent constructs using bootstrapping in Partial Least Squares (PLS) analysis as below:

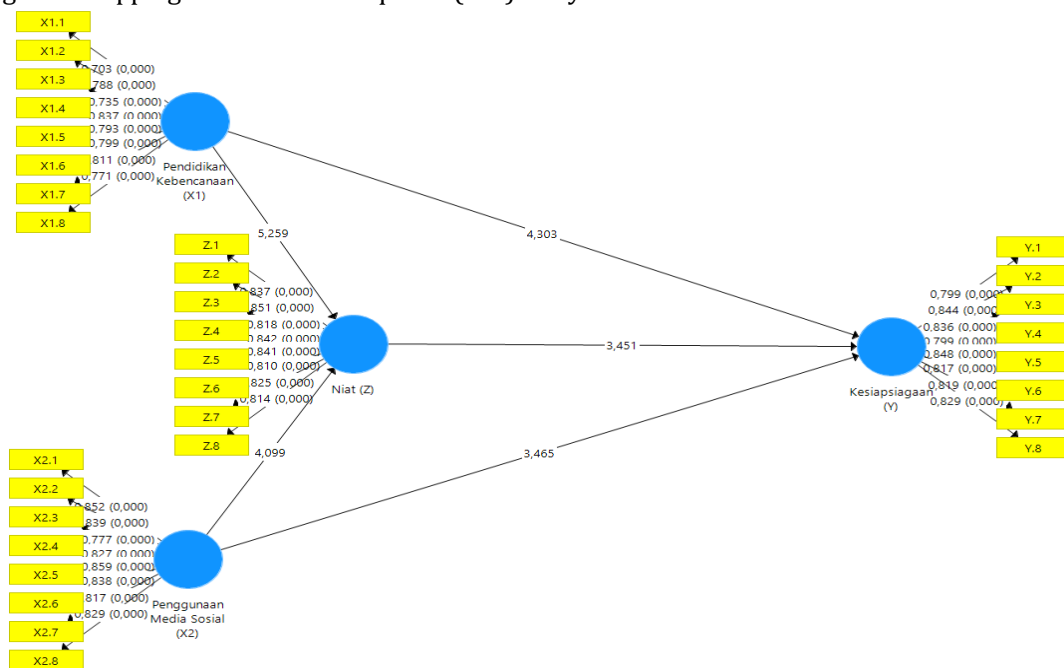


Figure 6. Inner model test using Bootstrapping

Source: Processed by Researcher, 2024

The evaluation of this structural model consists of three stages, which are: The initial phase involves assessing the presence of multicollinearity among variables using the Inner Variance Inflated Factor (VIF) measure. If the Inner VIF value is less than (<5), then indicates the lack of multicollinearity among variables. In the second stage, hypothesis testing is performed to examine the relationship between variables. This is done by looking at the t statistical value or p-value depending on the nature of the experimental design. In conclusion, if the calculated t statistical value is greater than the identified t value in the t table or if the p-value specified is greater to 0.05 is also considered as a significant level of impact between the variables. In addition, one needs to report the obtained significance and 95% CI for the computed path coefficient parameters. On the last stage, we should consider such heuristic tools as f square that is used to determine the influence of direct variables at the structural level. Regarding this

value, priority is determined in accordance with such criteria as 0.02 for the low impact and 0.10 and 0.35 for moderate impact respectively and 0 for no impact on patients. Furthermore, the f^2 statistic also called the f square of the mediation effect should also be investigated. This statistic is arrived at by squaring the mediation coefficient and its assessment is done using the following criteria of 0.01 for low mediation effect, 0.075 for moderate mediation effect and "0" for no mediation effect. The standardized coefficients of high mediation were independently rated at the mean of 175.

Table 1. Results of Inner Variance Inflated Factor (VIF) Value

| | Preparedness (Y) | Intention (Z) |
|-------------------------|------------------|---------------|
| Preparedness (Y) | | |
| Intention (Z) | 2,069 | |
| Disaster Education (X1) | 2,069 | 1,743 |
| Social Media Usage (X2) | 2,065 | 1,743 |

Source: Researcher processing results, 2024

Regarding the calculation of the Inner Variance Inflated Factor (VIF) value, it is found that the value is less than five. According to the guidelines, if the Inner VIF value is below 5, it indicates the absence of multicollinearity between variables. This suggests that the parameter estimation results in SEM PLS are robust and unbiased.

The second step in testing the direct effect hypothesis. Based on the calculation results, the following results are obtained:

Table 2. Hypothesis Testing Results of Direct Influence

| Hypothesis | Path Coefficients | P Values | 95% Confidence Interval | | F Square |
|--|-------------------|--------------|-------------------------|-------------|--------------|
| | | | Lower Limit | Upper Limit | |
| H1 : Disaster Education (X1) -> Intention (Z) | 0,397 | 0,000 | 0,272 | 0,562 | 0,187 |
| H2 : Social Media Usage (X2) -> Intention (Z) | 0,394 | 0,000 | 0,178 | 0,563 | 0,184 |
| H3 : Disaster Education (X1) -> Preparedness (Y) | 0,380 | 0,000 | 0,189 | 0,551 | 0,239 |
| H4: Social Media Usage (X2) -> Preparedness (Y) | 0,278 | 0,000 | 0,121 | 0,420 | 0,129 |
| H5 : Intention (Z) -> Preparedness (Y) | 0,301 | 0,001 | 0,150 | 0,509 | 0,150 |

Source: Researcher processing results, 2024

Based on the results of hypothesis testing shown in Table 2, disaster education (H1) has a significant impact on intention, with a path coefficient of 0.397 and a p-value of 0.000, indicating statistical significance at a 95% confidence level. The estimated effect of disaster education on intention ranges from

0.272 to 0.562, with a moderate structural impact (f square = 0.187). These findings suggest that improving disaster education—through practical training, simulated scenarios, and active community participation—can significantly enhance individuals' intentions to prepare for disasters. Similarly, the use of social media (H2) also significantly influences intention, with a path coefficient of 0.394 and a p-value of 0.000, and an effect range from 0.178 to 0.563. Although the structural impact is relatively minor (f square = 0.184), social media campaigns, especially those involving influencers and community leaders, can effectively motivate communities to take proactive disaster preparedness measures.

Furthermore, disaster education (H3) demonstrates a significant direct effect on actual preparedness, with a path coefficient of 0.380 and a confidence interval ranging from 0.189 to 0.551. The structural impact is moderate (f square = 0.239), highlighting the importance of integrating disaster education into school curricula and conducting regular simulations within communities to improve readiness. Similarly, social media usage (H4) significantly influences preparedness, with a path coefficient of 0.278 and a confidence interval between 0.121 and 0.420. Although the structural impact is moderate (f square = 0.129), effective use of social media can support timely information dissemination and education on disaster management. Developing engaging and informative content strategies, along with proactive audience engagement, is essential for maximizing the impact of social media on preparedness.

Finally, intention (H5) has a significant direct effect on disaster preparedness, with a path coefficient of 0.301 and a p-value of 0.001. The estimated effect ranges from 0.150 to 0.509, with a minor structural impact (f square = 0.150). This highlights the critical role of individual determination in enhancing preparedness levels. To maximize the impact of intention, efforts should focus on raising community awareness and fostering a deeper understanding of disaster preparedness through targeted educational campaigns, comprehensive training programs, and active community participation in disaster mitigation initiatives. These results collectively underscore the interconnected roles of disaster education, social media usage, and intention in building community resilience against disasters.

Table 3. Hypothesis Testing Results of Mediation Effect

| Hypothesis | Path Coefficients | P Values | 95% Confidence Interval Path Coefficient | | Upsilon v |
|--|-------------------|--------------|--|-------------|-----------|
| | | | Lower Limit | Upper Limit | |
| H6. Disaster Education (X1) -> Intention (Z) -> Preparedness (Y) | 0,119 | 0,003 | 0,051 | 0,209 | 0,0143 |
| H7. Social Media Usage (X2) -> Intention (Z) -> Preparedness (Y) | 0,119 | 0,036 | 0,030 | 0,243 | 0,0141 |

Source: Researcher processing results, 2024

The results of the hypothesis testing for the mediating effects, as shown in Table 3, indicate that hypothesis H6 is supported. Intention plays a significant mediating role in the relationship between disaster education and disaster preparedness, with a mediation path coefficient of 0.119 and a p-value of 0.003, which is below the 0.05 significance threshold. This suggests that disaster education indirectly influences preparedness by shaping individuals' intentions. However, the structural mediation effect is

minimal, as reflected in the ϵ value of 0.0143. Within the 95% confidence interval, the mediating effect is projected to grow to 0.209 if the quality of disaster education is improved. Based on the Theory of Planned Behavior (TPB), intention serves as a critical determinant of behavior, influenced by attitudes toward action, subjective norms, and perceived control. In this context, disaster education positively impacts attitudes toward preparedness, promotes supportive social norms, and enhances individuals' perceived ability to manage disaster-related experiences, ultimately bolstering community readiness.

Similarly, hypothesis H7 is also confirmed, indicating that intention mediates the relationship between social media usage and disaster preparedness. The mediation path coefficient is 0.119, with a p -value of 0.036, further supporting the hypothesis. Although the structural mediation effect is moderate ($\epsilon = 0.0141$), the 95% confidence interval (0.030–0.243) highlights the potential for social media campaigns to significantly enhance preparedness through intention. According to TPB, information disseminated through social media strengthens individuals' positive attitudes toward disaster preparedness, fosters supportive subjective norms, and enhances perceived control over disaster-related behavior. This underscores the importance of utilizing social media as an effective tool for disaster education, as it can provide timely, accurate information while increasing the community's intention to take proactive measures. These findings align with TPB's assertion that individuals are more likely to engage in structured preparedness behaviors when motivated by strong personal convictions shaped by reliable information and social support. According to Ajzen (1991) the theory of planned and organized behavior suggests that people are highly likely to initiate structured behaviors only if they are strong with personal conviction, which depends on the information and support from such sites.

To determine the extent of the impact of the disaster education and the use of social media on the community preparedness, the researcher applied the Goodness of Fit, of the evaluation of the fit model:

Table 4. Results of R Square and Q Square

| | R Square | Q Square |
|------------------|----------|----------|
| Preparedness (Y) | 0,709 | 0,476 |
| Intention (Z) | 0,517 | 0,349 |

Source: Researcher processing results, 2024

In table 4 there are results regarding the R Square and Q Square values. R square indicates the extent to which the residuals of the endogenous variables are explained by other exogenous/endogenous variables in the model. According to Chin (1998), the qualitative interpretation value of R square is as follows: 0.19 means low priority level, 0.33 means medium influence, and 0.66 means high influence. Q square is thus a metric that measures the level of predictive accuracy with respect to the ability of changes in exogenous and endogenous factors to explain endogenous variables. In the Q square evaluation method, it measures predictability by ascertaining the range of ability of changes in variables to predict variables. Basically, this measure tests the predictive relevance value of PLS and confirms the extent to which the model should be used. In Hair et al. (2019) study, If the Q square value is more than 0, then it indicates that the model in question is a predictive model. Categorized as 0 for low influence, 0.25 for moderate influence, and 0.50 for great effect

According to the calculated data, it is also established that the total effect of disaster education and use of social media in preparedness levels is 70.9% which shows that there is a good influence. This shows that incorporating disaster education and the use of social media is very effective in enhancing community Preparedness for disasters. Going by the R square of 0.709 it can be inferred that this model adequately

describes variability of preparation. However, the Q square value of the preparedness variable is 0.476, which in fact signifies that the degree of accuracy of the prediction is almost high. The size of this relationship implies that the model used has a high degree of prediction accuracy in the identification of the community's level of disaster preparedness. Additionally, the Q Square value implies that the combination of integrating disaster education with social media usage is highly efficient in predicting community readiness as well.

From the developed research study, it is evident that disaster education may contribute positively towards improving the desire of a person in contributing towards disaster preparedness. Thus, incorporating social media into the information gathering process will be helpful to the community to improve its disaster preparedness. This is founded on a study by Anwar & Rizal (2018) indicating that socialization of disaster mitigation via education in schools is particularly effective in enhancing children's disaster readiness. For this reason, the method of socialization applied in this study that involves the children is one that is interactive and participatory and therefore more effective in the creation of an appreciation for the need for disaster preparedness in the children. As well as others like the study by Damayani et al. (2022) also affirmed that there is the enhancement of disaster mitigation literacy based on the local wisdom using social media. This was proven by the positive results concerning the effectiveness of delivering disaster mitigation information when combining modern technology with indigenous peoples' knowledge.

CONCLUSION

These findings reveal that disaster education and utilization of the social networks help in improving the readiness of the coastal people. Education enhances the communities' awareness and capacity to deal with different disaster situations. In the same way, social media is efficient in spreading current data and raising public awareness during crisis situations. Thus, increasing the level of education and the amount of time spent on social networks both have a positive effect on the intention to prepare and the level of disaster preparedness, which confirms the mediating role of intention in this context, emphasizing the significance of the concept of behavioral intentions for disaster preparedness. That is why, the results are consistent with the Theory of Planned Behavior that emphasizes the influence of attitude towards the behavior, subjective norms, and perceived behavioral control on the disaster preparedness behaviour.

To the best of the author's knowledge, this research fills a gap in the literature by outlining a theoretical model for teaching and using social media for disasters with specific reference to culture. Nevertheless, the study is confined on one village hence, the results might not represent other villages in general. The upcoming studies should involve samples with more participants and, preferably, of a diverse population to corroborate the findings and investigate how constant further education and utilizing social media platforms affect the disaster readiness. Also, if other factors such as the economic background of the area and the availability of some things were involved then it would widen the comprehension of disaster preparedness in various areas.

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