

Risk perception of educational communities in disaster-prone areas from the perspective of islamic educational psychology

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ABSTRACT

This study aims to analyze the risk perception of educational communities situated within the Disaster-Prone Areas (*Kawasan Rawan Bencana* or KRB) of Mount Merapi, viewed through the lens of Islamic Educational Psychology. Risk perception is conceptualized not merely as a cognitive and emotional response to disaster threats, but as a psycho-spiritual construct shaped by Islamic values within educational practices. Utilizing a qualitative approach, this research conducted in-depth interviews with educators and institutional administrators in the sub-districts of Musuk and Kemalang (Central Java), and Cangkringan (Special Region of Yogyakarta). Data analysis was performed thematically, employing four primary dimensions of risk perception; exposure, familiarity, preventability, and dread which were further elaborated through key concepts of Islamic Educational Psychology, namely *tazkiyat al-nafs* (purification of the soul) consisting of; *sabr* (patience), *tawakkal* (reliance on God), and *ikhtiar* (proactive effort). The findings indicate that the risk perception of these educational communities is both adaptive and contextual, where disaster experiences cultivate a balance between rational vigilance and spiritual tranquillity. Furthermore, Islamic educational psychology values serve as psychological resources that bolster mental resilience, mitigate traumatic impacts, and foster educational practices more responsive to the psychosocial needs of students in disaster-prone regions. These findings underscore the critical importance of integrating Islamic Educational Psychology into the development of disaster education as a strategic framework for strengthening the resilience of educational communities.

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Introduction

Disaster-prone areas in Indonesia present multidimensional challenges to the continuity of education, particularly for educational communities living and operating

directly within high-risk zones. Geographically, Indonesia is situated on the Pacific Ring of Fire, a position that renders the archipelago highly vulnerable to geological hazards, particularly volcanic eruptions (Kusky, 2003), (Setiawan et al., 2021), (Siagian et al., 2014). Among these, Mount Merapi stands as one of the most active volcanoes in the world, characterized by a relatively short eruption cycle that results in recurring and sustained disaster threats (Wijayanti et al., 2025), (Chan et al., 2021), (Wigati et al., 2023). The impact of such eruptions extends beyond physical destruction and material loss, it profoundly affects the psychological well-being of both educators and students, manifesting in fear, anxiety, trauma, and a pervasive sense of uncertainty in conducting educational activities (Gissurardóttir et al., 2019), (Mendoza et al., 2024), (Hlodversdottir et al., 2018).

Within the context of disaster management, risk perception is conceptualized as a psychological construct that influences how individuals and groups evaluate the severity of hazards, the likelihood of impacts, and the efficacy of both personal and environmental capacities in mitigating risks (Wusana & Hidayat, 2017), (Gendeshmin et al., 2025). Numerous studies demonstrate that variances in risk perception contribute significantly to the diverse levels of preparedness, decision-making processes, and adaptive strategies adopted by communities in disaster-prone areas (Slovic, 2016). Individuals possessing an adaptive risk perception tend to exhibit rational vigilance and proactive mitigative behaviours, conversely low or distorted risk perceptions often culminate in negligence or a fatalistic attitude toward disaster threats.

Nevertheless, the majority of research on risk perception remains situated within the frameworks of general psychology and disaster science, with a dominant emphasis on cognitive and affective dimensions such as risk knowledge, past experiences, and emotional responses. Such approaches have yet to fully elucidate the role of religious values and spiritual dimensions in shaping risk perception, particularly within educational communities embedded in Islamic educational ecosystems. In the context of religious societies, religion functions as a fundamental meaning system that dictates how individuals interpret threats, uncertainty, and suffering (Sherry & Curtis, 2017).

Islamic educational psychology offers a more holistic perspective in understanding risk perception by viewing the individual as an integrated unity of cognitive, emotional, and spiritual dimensions. The concept of *tazkiyat al-nafs* emphasizes the process of soul purification and management in confronting fear and anxiety, thereby preventing individuals from succumbing to destructive panic. Furthermore, the value of *sabr* (patience) functions as a mechanism to bolster psychological resilience during trials, while *tawakkal* (reliance on God) and *ikhtiar* (proactive effort) establish a vital equilibrium between the acceptance of Divine decree and rational endeavours to minimize risk (HAMKA, 1989), (Al Jazairiy, 2017). Within an educational context, these values are not merely taught normatively, they are internalized through lived experiences, including the collective experience of navigating disasters.

Despite these conceptual foundations, empirical studies specifically analyzing the risk perception of educational communities in disaster-prone areas through the lens of Islamic educational psychology remain relatively scarce. Existing disaster research often fails to systematically integrate spiritual dimensions into psychological analysis. Conversely, studies in Islamic education tend to treat religious values at a purely conceptual level, lacking empirical exploration within the contexts of crisis and disaster.

This research gap underscores the necessity for an integrative approach that synthesizes risk perception theory with Islamic educational psychology to gain a more profound understanding of the psychological dynamics within educational communities in high-risk zones. Consequently, this study aims to analyze the risk perception of educational

communities in the Mount Merapi Disaster Prone Area from an Islamic educational psychology perspective, while examining its implications for developing disaster education oriented toward strengthening the psychological and spiritual resilience of educational communities.

Theoretical Framework: Risk Perception and Islamic Educational Psychology

Risk Perception in Disaster Studies

Within the field of disaster studies, risk perception refers to the cognitive and affective processes through which individuals or groups evaluate the severity of hazards, the likelihood of impacts, and the perceived efficacy of both personal and environmental capacities to control or mitigate encountered risks (Trumbo et al., 2016). Risk perception is not always congruent with objective danger levels, instead it is shaped by past experiences, knowledge, emotions, social values, and cultural contexts (Slovic, 2016). Consequently, risk perception serves as a pivotal variable that explains why individuals or communities facing identical disaster threats may exhibit divergent responses, levels of preparedness, and adaptive strategies. In the specific context of Mount Merapi, this perception is further complicated by the interplay between scientific information and the local-religious belief systems held by the educational community.

One of the most widely utilized approaches in understanding risk perception is the psychometric paradigm, which posits that risk is perceived through a set of relatively consistent psychological dimensions (Alrawad et al., 2022). In the context of disaster studies, as explained by Rosenbaum and Culshaw (Wusana & Hidayat, 2017), risk perception can be explained through four main dimensions; exposure, familiarity, preventability, and dread. The exposure dimension refers to an individual’s understanding of the degree to which they are subjected to hazards, based on both geographical conditions and actual potential threats (Gendeshmin et al., 2025). Individuals residing in disaster-prone areas tend to develop a specific understanding regarding the level of risk that is deemed normal within their daily lives. For communities on the slopes of Merapi, exposure is no longer considered an anomaly, but rather part of their geographical identity.

The familiarity dimension pertains to the proximity of an individual’s emotional experience with disasters, encompassing both direct and indirect encounters (Alrawad et al., 2022), (Gendeshmin et al., 2025). Repeated exposure to disaster events may foster adaptive attitudes, and it also carries the potential for risk normalization which may paradoxically diminish vigilance. Meanwhile, preventability refers to an individual's belief in the capacity to predict, control, or minimize disaster impacts through technology, early warning systems, or mitigative actions (Gendeshmin et al., 2025). This dimension significantly influences the decision-making process regarding compliance or non-compliance with evacuation policies and disaster mitigation protocols. Lastly, dread represents the level of fear and the perceived magnitude of losses inflicted by a disaster, including threats to physical safety, economic deprivation, and long-term psychological impacts (Jenkins et al., 2024).

Table 1: Four Dimensions of Risk Perception

Dimension	Typical role in models
Exposure	Cognitive likelihood/impact
Familiarity	Experience/knowledge-related

Preventability	Control/controllability
Dread	Affective fear/catastrophic sense

These four dimensions demonstrate that risk perception is a complex and contextual psychological construct. Within the context of educational communities, risk perception does not merely influence individual responses, it also profoundly impacts institutional policies, the sustainability of the learning process, and psychosocial support for students residing in disaster-prone regions.

Islamic Educational Psychology in Understanding Risk and Disaster

From the perspective of Islamic educational psychology, an individual's perception of and response to risk are inextricably linked to spiritual dimensions and Islamic values, which shape their worldview regarding life, calamities (*musibah*), and uncertainty. Islamic educational psychology conceptualizes the human being as an integrated whole, comprising cognitive, emotional, social, and spiritual facets. Consequently, the response to a disaster is not understood merely as a psychological reaction, rather it is viewed as a profound process of religious meaning-making (Mu'ti et al., 2018), (Davis et al., 2019).

The concept of *tazkiyat al-nafs* serves as a foundational pillar in Islamic psychology, emphasizing the process of spiritual purification and the systematic management of the soul (Andrabi, 2025), (Aziz ur Rehman, 2025), (Zakia et al., 2024). In the context of disasters, *tazkiyat al-nafs* enables individuals to manage fear, anxiety, and trauma constructively, preventing these emotions from escalating into debilitating panic or despair that could otherwise impede educational functions. Furthermore, the value of *sabr* (patience) functions as a mechanism for strengthening psychological resilience when facing trials and calamities (*musibah*). It fosters an attitude of endurance, the acceptance of reality, and the commitment to fulfilling one's social responsibilities with accountability, even amidst adversity.

Meanwhile, the concepts of *tawakkal* (reliance on God) and *ikhtiar* (proactive effort) establish a vital equilibrium between the acceptance of Divine decree and rational human endeavors to minimize risk. Within the framework of Islamic educational psychology, *tawakkal* is not interpreted as a passive or fatalistic stance, rather it is understood as a tranquil inner orientation achieved after maximum effort (*ikhtiar*) has been exerted. This balance is crucial in fostering an adaptive risk perception, wherein individuals remain vigilant and compliant with disaster mitigation efforts without becoming paralyzed by excessive fear (Al-Ghazali, 1989), (HAMKA, 1989), (Mu'ti et al., 2018), (Al Jazairiy, 2017), (Hadiyatullah, 2025).

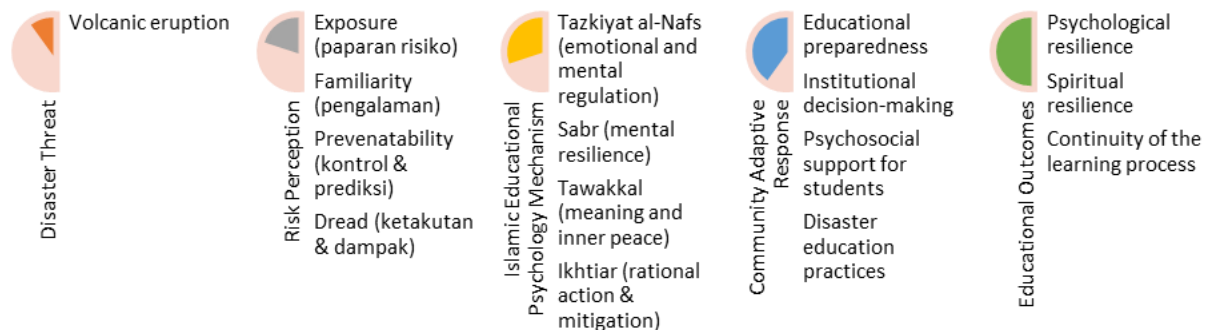
In conclusion, Islamic educational psychology provides a relevant conceptual framework for understanding how Islamic educational communities interpret disasters, not merely as threats, but as trials (*imtihan*), catalysts for character development, and momentum for strengthening both psychological and spiritual resilience. The integration of risk perception theory and Islamic educational psychology facilitates a more comprehensive analysis of the risk perception dynamics within educational communities in disaster-prone areas, specifically within the context of Islamic education.

Conceptual Research Model

The research model positions the volcanic disaster threat as the objective context that triggers the formation of risk perception within educational communities in disaster-prone areas. This risk perception is constructed through four primary dimensions; exposure,

familiarity, preventability, and dread, which collectively represent the mechanisms through which individuals and educational institutions understand the severity of hazards, emotional experiences, beliefs regarding risk control, and the intensity of fear toward disaster impacts.

Figure 1: Conceptual Research Model



Distinct from conventional disaster psychology approaches, this model positions Islamic educational psychology as a conceptual mediating mechanism that shapes and directs responses to risk. Within this framework, the value of *tazkiyat al-nafs* functions as an emotional regulation mechanism and a tool for anxiety management, *sabr* (patience) strengthens mental resilience in the face of uncertainty, *tawakkal* (reliance on God) provides a framework for meaning and inner tranquility, while *ikhtiar* (proactive effort) drives rational action and compliance with disaster mitigation efforts.

The interaction between risk perception and the mechanisms of Islamic educational psychology generates adaptive responses within the educational community, manifesting at both the individual and institutional levels. These responses are reflected in enhanced educational preparedness, more rational and composed decision-making processes, the development of psychosocial support systems for students, and the strategic integration of disaster education into pedagogical practices. Ultimately, this model facilitates the achievement of psychological and spiritual resilience within the educational community, ensuring the sustainability of the educational process in disaster-prone areas.

Method

This research employs a qualitative approach with a case study design to obtain a profound and contextual understanding of the risk perception held by educational communities in disaster-prone areas. The qualitative approach was selected because risk perception is a subjective construct shaped by experiences, emotions, values, and social meanings, elements that cannot be fully elucidated through quantitative measurements alone (Creswell & Creswell, 2018), (Sudjarwo & Basrowi, 2009). The case study design allows the researcher to explore the phenomenon holistically within its real-world context, particularly when the boundaries between the phenomenon and the context are not clearly evident (Gay et al., 2012), (Ary et al., 2010). The Mount Merapi region is an important case study, as it embodies a combination of high geological risk and deeply rooted local traditions.

The research sites encompass the sub-districts of Musuk and Kemalang (Central Java) and Cangkringan (Special Region of Yogyakarta), all of which are situated within the Mount Merapi Disaster-Prone Areas (KRB). These three regions were selected through purposive sampling due to their varying levels of disaster exposure and diverse eruption histories, thereby facilitating a contextual comparison of how educational communities interpret disaster risks. Such regional variation is critical in risk perception research, as direct

experience with disaster impacts has been empirically proven to influence the formation of attitudes, levels of preparedness, and societal adaptive strategies.

The research informants consist of educators, school/madrasah administrators, and Islamic educational community leaders from 10 Schools/madrasah. They selected through purposive sampling based on specific criteria; active involvement in educational activities and direct experience in facing Mount Merapi eruptions. This purposive sampling technique was employed to ensure that the informants possess the knowledge, experience, and reflections pertinent to the research focus (Sugiyono, 2013). The selection of the educational community is predicated on the consideration that educational institutions function not only as academic entities but also as spaces for the internalization of values, which significantly shape how individuals interpret risk and disaster.

Data collection was conducted through in-depth interviews and participant observation (Afifuddin & Saebani, 2012), (Sudarmanto, 2022). In-depth interviews were employed to explore the subjective experiences, perceptions, and meanings assigned by informants to disaster risks and the educational responses they developed. This approach enables the researcher to capture cognitive, emotional, and spiritual nuances that are not always apparent in surface-level data (Kvale & Brinkmann, 2015). Meanwhile, observation was utilized to validate and enrich the data through direct monitoring of interaction dynamics within the educational environment, as well as the tangible manifestations of safety procedures established in disaster-prone areas.

Data analysis was performed using thematic analysis, comprising the stages of data reduction, categorization, and meaning interpretation. Thematic analysis was selected due to its flexibility and suitability for identifying patterns of meaning within qualitative data related to perceptions, experiences, and values (Ary et al., 2010). The analytical process commenced with the initial coding of interview transcripts, which were subsequently developed into themes representing the dimensions of risk perception: *exposure*, *familiarity*, *preventability*, and *dread*. These themes were then elaborated upon and interpreted through the lens of Islamic educational psychology, specifically the concepts of *tazkiyat al-nafs*; *sabar*, *tawakkal*, and *ikhtiar* to understand how Islamic values shape the educational community's perceptions and responses to disaster risks.

This analytical approach enables the study to transcend a mere description of risk perception, uncovering the underlying psychological and spiritual meaning-making processes that drive the adaptive responses of educational communities in disaster-prone areas. Consequently, this research method aligns with the study's objective, which is oriented toward achieving a profound and contextual understanding of the dynamics of risk perception from the perspective of Islamic educational psychology.

Result

The research findings indicate that within the exposure dimension, the educational community is acutely aware of the potential hazards of Merapi's eruptions. This awareness is accompanied by a religious outlook that views risk as part of Divine decree (*qadar*), to be met with both preparedness and faith. Regarding the familiarity dimension, repeated emotional encounters with disasters have fostered adaptive attitudes, where fear is transformed into heightened vigilance and more mature preparedness.

The preventability dimension reveals a combination of trust in government warning systems and religious conviction, manifested through the balance between *ikhtiar* (proactive effort) and *tawakkal* (reliance on God). Meanwhile, in the dread dimension, the level of fear

varies according to the magnitude of past impacts, particularly in areas previously affected by pyroclastic flows (*wedhus gembel*).

1. Exposure

Regarding the exposure aspect, the majority of informants demonstrated an understanding that residing in a disaster-prone area inherently carries risks, however these risks are not always perceived as a constant, looming threat. Several respondents assessed that Mount Merapi does not erupt incessantly and that living on its slopes necessitates an adaptive posture toward potential disasters. Sriyanto revealed that while concern exists, it tends to diminish over time and through experiences with disasters that resulted in minimal impact. He stated: *"The concern is there, but because we live near Merapi, that worry gradually fades, especially when past disasters have passed and only caused minor losses."*

A similar perspective was shared by Joko, who expressed a sense of security due to the presence of other mountains believed to act as a physical buffer against Merapi's eruptions. Meanwhile, Wiwin highlighted a shift in risk perception, moving from high levels of fear to a more stable sense of security following the implementation of early warning systems. She remarked, *"There was fear living in a disaster-prone area, but now it's not so much because... there are now warnings issued before an eruption of Mount Merapi occurs. Moreover, disasters are not confined to specific locations or caused solely by volcanic activity, they may occur in various places and take different forms or factors. While fortune and misfortune are ultimately part of Divine decree, human beings are nevertheless obliged to make every effort (ikhtiar) to safeguard themselves and their families."*

2. Familiarity

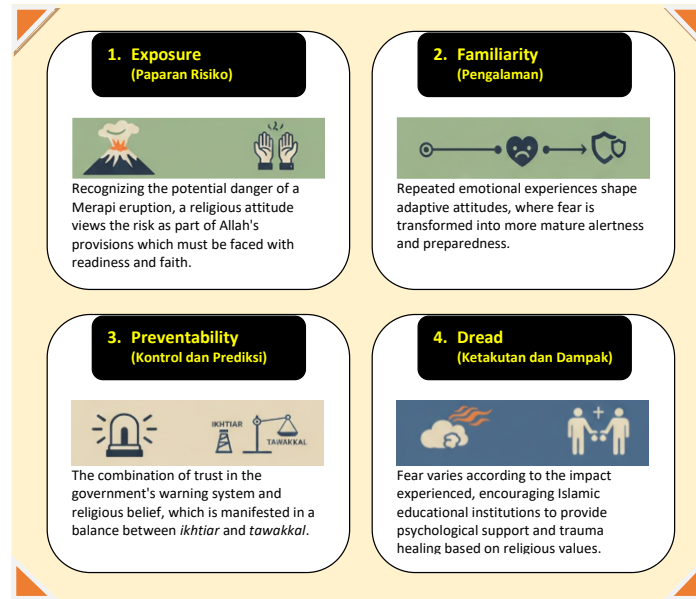
The familiarity aspect indicates that post-disaster emotional experiences play a significant role in shaping community attitudes toward risk. Several informants expressed a desire to relocate from disaster-prone areas. However, economic and social factors along with a deep-rooted attachment to their environment serve as primary obstacles.

Eka explained that the desire to move is often thwarted by resource constraints and the difficulties of adapting to a new environment. He stated, *"I once had the desire to move elsewhere, but moving requires adjusting to a new environment... whereas living in the village, the land is vast, and one can even engage in farming."* Suprapti added that although the government has provided temporary and permanent housing (*huntap*), many residents chose to return to their original villages because they felt more at peace living in their ancestral environment. Conversely, Widjokongko revealed that severe trauma actually compelled his family to relocate to an area perceived to be safer. This was their proactive effort (*ikhtiar*) to minimize the threat of disaster.

3. Preventability

Regarding the preventability aspect, the research findings reveal a divergence in the sources of public trust concerning the prediction and management of disaster risks. The majority of informants place their trust in government warning systems, viewing them as effective tools for minimizing disaster impacts. However, a segment of the community continues to rely more heavily on natural signs or spiritual cues (*wangsit*) as the basis for decision-making. Joko illustrated this phenomenon by quoting a common local expression: *"Essentially, I will not evacuate if I have not yet received a spiritual sign (wangsit)."* This highlights a dualism in knowledge systems, where a tension exists between scientific approaches and deeply ingrained local beliefs.

**Figure 2: Infographic on Community Risk Perception
in Merapi Disaster-Prone Areas**



4. Dread (Tingkat Ketakutan dan Dampak Kerugian)

The dread aspect reveals variations in the levels of fear and loss experienced by the community, categorized by the specific impacts in each affected region. In Musuk sub-district, the impact of eruptions primarily manifested as volcanic ash, which was relatively manageable for residential areas, although the agricultural sector suffered significant losses. Suyanto stated: *"For housing, it's just a matter of cleaning it up... but for clove farmers, the losses can be immense due to total harvest failure."*

In Kemalang, the disaster impacts were not limited to volcanic ash but also included cold lava flows (*lahar*). Interestingly, these former lava streams have been repurposed as economic resources through sand mining activities. The most severe impacts were experienced by the community in Cangkringan, particularly in Disaster-Prone Area III (KRB III), which was exposed to pyroclastic flows (*awan panas*). Despite these devastating experiences, informants remained patient (*sabr*) and consistently emphasized the importance of coexisting with nature and trusting in Allah (*tawakkal*) as well as maintaining a high level of preparedness for future disasters.

Discussion

The findings of this study demonstrate that Islamic educational psychology plays a pivotal role in shaping adaptive and constructive risk perceptions within educational communities. Values such as *sabar* (patience), *tawakkal* (reliance on God), and *ikhtiar* (proactive effort) function as psychological resources that bolster the resilience of both individuals and educational institutions in the face of disaster. Critically, a religiously-framed risk perception does not lead to a fatalistic attitude, instead, it fosters enhanced preparedness and social solidarity. This suggests that Islamic education possesses strategic potential as a medium for integrating disaster education, character development, and the mental health support of teacher and students within disaster-prone regions.

The findings of this study confirm that the risk perception of educational communities in the Mount Merapi disaster-prone areas is shaped by a complex interaction of cognitive,

affective, social, and religious factors. This is consistent with Slovic's risk perception framework (Slovic, 2016), (Slovic & Peters, 2006), which posits that risk perception is not merely objective but is constructed through experiences, emotions, and the belief systems of individuals and groups. In this context, disaster risk is understood not only as a physical threat but also as a social reality normalized through daily lived experiences in high-risk zones.

Regarding the exposure aspect, the tendency for fear to diminish despite residing in high-risk areas indicates a process of risk normalization. According to Slovic, repeated exposure to risk without extreme consequences can reduce an individual's sensitivity to hazards, leading to the perception of risk as controllable. This condition carries ambivalent implications for disaster education in schools and madrasahs. On one hand, risk normalization can enhance the psychological tranquillity of the school community, on the other hand, it potentially undermines vigilance and preparedness if not balanced with adequate disaster literacy. Therefore, disaster education policies must be designed to maintain an equilibrium between psychological security and risk awareness based on scientific knowledge.

Furthermore, the familiarity aspect demonstrates that post-disaster emotional experiences and place attachment play a pivotal role in the decision to remain in disaster-prone areas. Within the perspective of Protection Motivation Theory (PMT), this can be explained through the interaction between *threat appraisal* and *coping appraisal* (Hedayati et al., 2023), (Lin et al., 2022), (Mou et al., 2022), (Bubeck et al., 2018), (Bamberg et al., 2017). Individuals who have experienced disasters but adapted successfully tend to assess the threat as manageable (low perceived vulnerability) and feel they possess the capacity to endure (high self-efficacy). The implication for schools and madrasahs is the necessity of strengthening the *coping appraisal* of both students and educators through disaster education that emphasizes practical skills, evacuation simulations, and the systematic habituation of emergency procedures.

Regarding the preventability aspect, the findings reveal a dualism in belief systems between scientific approaches (government early warning systems) and local-spiritual knowledge. Within the Protection Motivation Theory (PMT) framework, this divergence influences response efficacy (the perceived effectiveness of a protective action) (Shillair, 2020), (Bubeck et al., 2023), (Lahiri et al., 2021). When official warnings are not fully trusted, the protective motivation to evacuate or engage in mitigation may diminish. In this context, the integration of Islamic concepts becomes profoundly relevant, *ikhtiar* as the human obligation to exert maximum effort, *tawakkal* as the spiritual surrender following that effort, and *sabr* as psychological endurance in the face of calamity. Such an approach allows disaster education in schools/madrasahs to be positioned not as a contradiction to religious values, but rather as a direct manifestation of Islamic teachings themselves.

The dread aspect demonstrates that the level of fear and perceived loss is heavily influenced by the social meanings attached to the disaster. Past research emphasizes that risks associated with catastrophic impacts and high uncertainty evoke greater levels of dread (Shen et al., 2020), (Peng et al., 2019), (Bronfman et al., 2020), (Jaspal & Breakwell, 2025), (Millroth & Frey, 2021), (Huang & Yang, 2020), (Wise et al., 2023), (Tull et al., 2020). However, the findings of this study show that a portion of the community is able to reinterpret disasters as a source of learning and even post-disaster economic opportunity. In Islamic psychology, this reframing aligns with the concepts of *ibtildā'* (divine trial) and *hikmah* (wisdom), which function as adaptive coping mechanisms that strengthen the resilience of the educational community.

Based on these findings, policy implications for disaster education in schools and madrasahs should be directed toward an integrative approach:

1. First, the disaster curriculum needs to synthesize science-based risk literacy with Islamic values, ensuring that students not only understand technical mitigation procedures but also possess spiritual resilience.
2. Second, schools and madrasahs in disaster-prone areas must institutionalize trauma healing programs and psychological resilience-building, particularly for children vulnerable to post-disaster emotional impacts.
3. Third, training policies for teachers and educational staff should emphasize their roles as risk communicators capable of bridging the gap between scientific knowledge, local wisdom, and religious values.

Consequently, effective disaster education relies not merely on the dissemination of risk information, but on the cultivation of risk perceptions that are balanced, adaptive, and meaningful. The integration of Risk Perception Theory, Protection Motivation Theory (PMT), and Islamic Psychology provides a robust conceptual foundation for developing disaster education policies that are contextual, sustainable, and highly relevant to the unique characteristics of educational institutions in disaster-prone regions.

Conclusion

This study concludes that risk perception within the educational community in the Mount Merapi Disaster-Prone Area is not merely a technical-cognitive construct, but a multidimensional phenomenon born from the interaction between empirical disaster experience, risk literacy, and the internalization of Islamic educational values. The integration of spiritual dimensions, specifically *sabr* (patience), *tawakkal* (reliance on God), and *ikhtiar* (proactive effort) in psychological mechanisms enables both individuals and institutions to transform anxiety into measured adaptive responses.

The resulting mental and institutional resilience is not merely a survival strategy but a manifestation of religious meaning-making toward the reality of disasters. Consequently, this research advocates for a reorientation of disaster education policies in schools and madrasahs through the systematic integration of Islamic educational psychology. This approach is critical for establishing a sustainable resilience model, where technical preparedness is reinforced by a robust spiritual foundation, thereby ensuring the continuity of the educational process amidst persistent disaster threats.

References

- Afifuddin, & Saebani, B. A. (2012). *Metode Penelitian Kualitatif*. CV. Pustaka Setia.
- Al Jazairiy, A. B. J. (2017). *Minhajul Muslim, Kitab 'Aqaid, wa Adaab, wa Akhlaq, wa 'Ibadaat, wa Mu'amalat* (5th ed.). Maktabah Al 'Ulum wal Hikam.
- Al-Ghazali, A. H. M. (1989). *Ihya' 'Ulum Al-Dīn* (IV). Dar al-Fikr.
- Alrawad, M., Lutfi, A., Alyatama, S., Elshaer, I. A., & Almaiah, M. A. (2022). Perception of Occupational and Environmental Risks and Hazards among Mineworkers: A Psychometric Paradigm Approach. *International Journal of Environmental Research and Public Health*, 19(6), 3371. <https://doi.org/10.3390/ijerph19063371>
- Andrabi, A. (2025). Human Psychology and Spiritual Development: An Islamic Perspective. *International Journal For Multidisciplinary Research*, 7(3). <https://doi.org/10.36948/ijfmr.2025.v07i03.47906>
- Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to Research in Education Eighth Edition*. Wadsworth Cengage Learning.

- Aziz ur Rehman. (2025). قرآن کا تصورِ نفس اور جدید سائیکالوجی کا تقابل: قرآن اور نفسیاتی صحت. *Al-Aasar*, 2(3), 441–461. <https://doi.org/10.63878/aaj629>
- Bamberg, S., Masson, T., Brewitt, K., & Nemetschek, N. (2017). Threat, coping and flood prevention – A meta-analysis. *Journal of Environmental Psychology*, 54, 116–126. <https://doi.org/10.1016/j.jenvp.2017.08.001>
- Bronfman, N. C., Cisternas, P. C., Repetto, P. B., Castañeda, J. V., & Guic, E. (2020). Understanding the Relationship Between Direct Experience and Risk Perception of Natural Hazards. *Risk Analysis*, 40(10), 2057–2070. <https://doi.org/10.1111/risa.13526>
- Bubeck, P., Osberghaus, D., & Thieken, A. H. (2023). Explaining Changes in Threat Appraisal, Coping Appraisal, and Flood Risk-Reducing Behavior Using Panel Data From a Nation-Wide Survey in Germany. *Environment and Behavior*, 55(4), 211–235. <https://doi.org/10.1177/00139165231176069>
- Bubeck, P., Wouter Botzen, W. J., Laudan, J., Aerts, J. C. J. H., & Thieken, A. H. (2018). Insights into Flood-Coping Appraisals of Protection Motivation Theory: Empirical Evidence from Germany and France. *Risk Analysis*, 38(6), 1239–1257. <https://doi.org/10.1111/risa.12938>
- Chan, H.-P., Konstantinou, K. I., & Blackett, M. (2021). Spatio-temporal surface temperature variations detected by satellite thermal infrared images at Merapi volcano, Indonesia. *Journal of Volcanology and Geothermal Research*, 420, 107405. <https://doi.org/10.1016/j.jvolgeores.2021.107405>
- Creswell, J. W., & Creswell, J. D. (2018). *Research Design, Qualitative, Quantitative, and Mixed Methods Approaches* (Fifth). SAGE Publications, Inc.
- Davis, E. B., Kimball, C. N., Aten, J. D., Andrews, B., Van Tongeren, D. R., Hook, J. N., Davis, D. E., Granqvist, P., & Park, C. L. (2019). Religious meaning making and attachment in a disaster context: A longitudinal qualitative study of flood survivors. *The Journal of Positive Psychology*, 14(5), 659–671. <https://doi.org/10.1080/17439760.2018.1519592>
- Gay, L. R., Mills, G. E., & Airasian, P. (2012). *Educational Research, Competencies for Analysis and Application* (10th ed.). Pearson Education, Inc.
- Gendeshmin, S. B., Rostamzadeh, S., & Dowlati, M. (2025). Evaluation of disaster risk perception and influencing factors among hospital personnel using structural equation modeling. *Scientific Reports*, 15(1), 12780. <https://doi.org/10.1038/s41598-025-97747-0>
- Gissurardóttir, Ó. S., Hlodversdóttir, H., Thordardóttir, E. B., Pétursdóttir, G., & Hauksdóttir, A. (2019). Mental health effects following the eruption in Eyjafjallajökull volcano in Iceland: A population-based study. *Scandinavian Journal of Public Health*, 47(2), 251–259. <https://doi.org/10.1177/1403494817751327>
- Hadiyatullah, Z. R. (2025). Optimizing Individual Resilience Through The Tazkiyatun Nafs Method: Implications For Islamic Education At The Al-Mu'min Rehabilitation Foundation In Malang. *JURNAL PENELITIAN*, 19(1), 1. <https://doi.org/10.21043/jp.v19i1.27058>
- HAMKA, A. A. A. (1989). *Tafsir Al-Azhar: Vol. Jilid 1*. Pustaka Nasional PTE. LTD.
- Hedayati, S., Damghanian, H., Farhadinejad, M., & Rastgar, A. A. (2023). Meta-analysis on application of Protection Motivation Theory in preventive behaviors against COVID-19. *International Journal of Disaster Risk Reduction*, 94, 103758. <https://doi.org/10.1016/j.ijdrr.2023.103758>
- Hlodversdottir, H., Thorsteinsdottir, H., Thordardottir, E. B., Njardvik, U., Petursdottir, G., & Hauksdottir, A. (2018). Long-term health of children following the Eyjafjallajökull volcanic eruption: a prospective cohort study. *European Journal of Psychotraumatology*, 9(sup2). <https://doi.org/10.1080/20008198.2018.1442601>
- Huang, Y., & Yang, C. (2020). A Metacognitive Approach to Reconsidering Risk Perceptions and Uncertainty: Understand Information Seeking During COVID-19. *Science Communication*, 42(5), 616–642. <https://doi.org/10.1177/1075547020959818>

- Jaspal, R., & Breakwell, G. M. (2025). Fear during crises: the roles of perceived risk, appraisal support and identity resilience. *Journal of Risk Research*, 28(1), 17–31. <https://doi.org/10.1080/13669877.2025.2485048>
- Jenkins, S. C., Lachlan, R. F., & Osman, M. (2024). An integrative framework for mapping the psychological landscape of risk perception. *Scientific Reports*, 14(1), 10989. <https://doi.org/10.1038/s41598-024-59189-y>
- Kusky, T. (2003). *Geological Hazards: A Sourcebook*. Greenwood Publishing Group.
- Lahiri, A., Jha, S. S., Chakraborty, A., Dobe, M., & Dey, A. (2021). Role of Threat and Coping Appraisal in Protection Motivation for Adoption of Preventive Behavior During COVID-19 Pandemic. *Frontiers in Public Health*, 9. <https://doi.org/10.3389/fpubh.2021.678566>
- Lin, H., Chen, M., Yun, Q., Zhang, L., & Chang, C. (2022). Protection motivation theory and smoking quitting intention: findings based on structural equation modelling and mediation analysis. *BMC Public Health*, 22(1), 838. <https://doi.org/10.1186/s12889-022-13263-0>
- Mendoza, D. A., Reales, J. M., & Ballesteros, S. (2024). Effects of volcanic eruptions on the mental health of exposed populations: a systematic review. *Frontiers in Public Health*, 12. <https://doi.org/10.3389/fpubh.2024.1475459>
- Millroth, P., & Frey, R. (2021). Fear and anxiety in the face of COVID-19: Negative dispositions towards risk and uncertainty as vulnerability factors. *Journal of Anxiety Disorders*, 83, 102454. <https://doi.org/10.1016/j.janxdis.2021.102454>
- Mou, J., Cohen, J., Bhattacharjee, A., & Kim, J. (2022). A Test of Protection Motivation Theory in the Information Security Literature: A Meta-Analytic Structural Equation Modeling Approach in Search Advertising. *Journal of the Association for Information Systems*, 23(1), 196–236. <https://doi.org/10.17705/1jais.00723>
- Mu'ti, A., Danarto, A., Kahmad, D., Rais, A. D., Ilyas, Y., & Ali, M. (2018). *Fikih Kebencanaan dan Tuntunan Shalat, Berita Resmi Muhammadiyah*. Pimpinan Pusat Muhammadiyah.
- Peng, L., Tan, J., Lin, L., & Xu, D. (2019). Understanding sustainable disaster mitigation of stakeholder engagement: Risk perception, trust in public institutions, and disaster insurance. *Sustainable Development*, 27(5), 885–897. <https://doi.org/10.1002/sd.1948>
- Setiawan, T., Fatkhan, & Cysela, R. Y. (2021). Landslide Monitoring using Inclinator with Micro Electromechanical System (MEMS). *IOP Conference Series: Earth and Environmental Science*, 873(1), 012024. <https://doi.org/10.1088/1755-1315/873/1/012024>
- Shen, Y., Lou, S., Zhao, X., Ip, K. P., Xu, H., & Zhang, J. (2020). Factors Impacting Risk Perception under Typhoon Disaster in Macao SAR, China. *International Journal of Environmental Research and Public Health*, 17(20), 7357. <https://doi.org/10.3390/ijerph17207357>
- Sherry, J., & Curtis, A. (2017). At the intersection of disaster risk and religion: interpretations and responses to the threat of Tsho Rolpa glacial lake. *Environmental Hazards*, 16(4), 314–329. <https://doi.org/10.1080/17477891.2017.1298983>
- Shillair, R. (2020). Protection Motivation Theory. In *The International Encyclopedia of Media Psychology* (pp. 1–3). Wiley. <https://doi.org/10.1002/9781119011071.iemp0188>
- Siagian, T. H., Purhadi, P., Suhartono, S., & Ritonga, H. (2014). Social vulnerability to natural hazards in Indonesia: driving factors and policy implications. *Natural Hazards*, 70(2), 1603–1617. <https://doi.org/10.1007/s11069-013-0888-3>
- Slovic, P. (2016). Understanding Perceived Risk: 1978–2015. *Environment: Science and Policy for Sustainable Development*, 58(1), 25–29. <https://doi.org/10.1080/00139157.2016.1112169>
- Slovic, P., & Peters, E. (2006). Risk Perception and Affect. *Current Directions in Psychological Science*, 15(6), 322–325. <https://doi.org/10.1111/j.1467-8721.2006.00461.x>
- Sudarmanto, E. dkk,. (2022). *Metode Riset Kuantitatif dan Kualitatif*. Yayasan Kita Menulis.
- Sudjarwo, & Basrowi. (2009). *Manajemen Penelitian Sosial*. CV. Mandar Maju.
- Sugiyono. (2013). *Metode Penelitian Pendidikan, Pendekatan Kuantitatif, Kualitatif, dan R&D*. Alfabeta.

- Trumbo, C. W., Peek, L., Meyer, M. A., Marlatt, H. L., Gruntfest, E., McNoldy, B. D., & Schubert, W. H. (2016). A Cognitive-Affective Scale for Hurricane Risk Perception. *Risk Analysis*, 36(12), 2233–2246. <https://doi.org/10.1111/risa.12575>
- Tull, M. T., Barbano, A. C., Scamaldo, K. M., Richmond, J. R., Edmonds, K. A., Rose, J. P., & Gratz, K. L. (2020). The prospective influence of COVID-19 affective risk assessments and intolerance of uncertainty on later dimensions of health anxiety. *Journal of Anxiety Disorders*, 75, 102290. <https://doi.org/10.1016/j.janxdis.2020.102290>
- Wigati, S. S., Sopha, B. M., Asih, A. M. S., & Sutanta, H. (2023). Geographic Information System Based Suitable Temporary Shelter Location for Mount Merapi Eruption. *Sustainability*, 15(3), 2073. <https://doi.org/10.3390/su15032073>
- Wijayanti, P., Noviani, R., Koesuma, S., Wibowo, Y. A., Nirwansyah, A. W., Wardhani, P. I., Hafida, S. H., Sriyanto, S., Andriani, A., & Muzaqi, F. (2025). Evaluating hazard, vulnerability, and capacity through local knowledge for volcano risk reduction. *Jàmbá: Journal of Disaster Risk Studies*, 17(1). <https://doi.org/10.4102/jamba.v17i1.1876>
- Wise, T., Zbozinek, T. D., Charpentier, C. J., Michelini, G., Hagan, C. C., & Mobbs, D. (2023). Computationally-defined markers of uncertainty aversion predict emotional responses during a global pandemic. *Emotion*, 23(3), 722–736. <https://doi.org/10.1037/emo0001088>
- Wusana, S. W., & Hidayat, R. (2017). Persepsi Resiko Bencana Alam Ditinjau dari Sentralitas Jaringan Informasi Kebencanaan. *Jurnal Ilmu Perilaku*, 1(2), 68–80.
- Zakia, A. Z., Maryatul kibtiyah, Hilma Nadia Faylasufa, Abdullah Nur, & Ahmad Zidni Ilman. (2024). APLIKASI TAZKIYATUN NAFS DALAM PSIKOTERAPI ISLAM. *Hisbah: Jurnal Bimbingan Konseling Dan Dakwah Islam*, 21(2), 109–131. <https://doi.org/10.14421/hisbah.2024.212-07>