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# The Effect of Disaster Management Preparedness and Risk Perception on Community Psychological Resilience with Stress Coping as a Mediating Variable

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### Abstract

Communities living in disaster-prone areas need not only structural preparedness but also a strong psychological capacity to survive and recover from disaster threats. This study examines the influence of Disaster Management Preparedness and Risk Perception on Community Psychological Resilience, with Stress Management as a mediating variable. Using a quantitative associative approach, data were collected from residents of disaster-prone areas in Banda Aceh City and Aceh Besar Regency, Indonesia, through structured questionnaires and analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM). The results show that disaster management preparedness and risk perception significantly influence stress management and psychological resilience. Stress management emerged as the strongest predictor of resilience and served as a significant mediator in the relationship between preparedness and resilience, as well as between risk perception and resilience. These results highlight that resilience is strengthened not only by knowledge and structural preparedness, but also by adaptive coping strategies such as problem-focused coping, emotion regulation, and religion-based coping. In the context of Aceh Province, where socio-cultural and religious values strongly shape individual responses to disaster threats, coping mechanisms act as important psychological pathways that transform preparedness and risk awareness into resilient behavior. This study provides practical implications for disaster management authorities to integrate psychosocial strengthening into preparedness programs, emphasizing community education, simulation activities, and culturally rooted psychosocial support to enhance community resilience. Further research is encouraged to adopt mixed methods and explore additional socio-cultural variables to deepen the understanding of resilience dynamics in disaster-prone communities.



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## 1. Introduction

Natural disasters constitute a persistent global challenge that threatens the social, economic, and psychological stability of communities [1–3]. Within the framework of modern disaster management, resilience is increasingly understood as a multidimensional construct that extends beyond physical infrastructure and institutional capacity [4, 5]. Scholars such as Paton [6] and Asyukri & Oktari [7] emphasize that community resilience is also shaped by the psychological ability of individuals to cope with, adapt to, and recover from highly stressful and disruptive events. In line with this perspective, international studies demonstrate that psychological resilience plays a critical role in enhancing disaster response effectiveness and accelerating post-disaster recovery, particularly as climate change intensifies the frequency and severity of natural hazards worldwide [8].

Against this global backdrop, Indonesia faces exceptionally complex challenges in disaster risk management [9]. As one of the most disaster-prone countries in the world, Indonesia is frequently affected by earthquakes, tsunamis, floods, and landslides, all of which demand strong preparedness at the community level [10–12]. Although the Indonesian government, through the National Disaster Management Agency (BNPB) and Regional Disaster Management Agencies (BPBD), has expanded disaster education, mitigation, and preparedness programs, empirical reports indicate that community preparedness often remains inadequate. Studies by Hu et al. [13] and Koca et al. [14] reveal that risk perception tends to decline over time and that coping strategies employed by communities are not always adaptive. These findings suggest that disaster management efforts in Indonesia require greater attention to psychosocial dimensions, particularly those related to stress management and psychological preparedness [8, 15].

The importance of psychosocial factors becomes even more evident in the context of Aceh Province, especially Banda Aceh City and Aceh Besar Regency. This region occupies a unique position in global disaster history due to the 2004 Indian Ocean tsunami, which caused profound psychological, social, and cultural disruption [7, 16]. While Aceh has since developed relatively advanced early warning systems and formal preparedness programs, recent field observations suggest a gradual decline in preparedness and risk perception among certain community groups [17]. Young people who weren't around for the 2004 tsunami tend to be less aware and less involved in disaster preparedness activities [18]. Moreover, participation in disaster simulations, training, and community-based disaster risk

reduction initiatives has weakened in recent years, highlighting a gap between policy objectives and actual community behavior [19, 20].

Beyond historical experience, the social and cultural context of Aceh further shapes community responses to disaster threats. The implementation of Islamic law and the strong influence of religious values introduce distinctive dynamics in how individuals perceive risk and manage stress [19, 21]. Strong religious values can play a positive role in improving coping strategies and psychological resilience, but they also have the potential to lower risk perception if the community leaves risk entirely to fate without making any adaptive efforts [22–24]. Excessive reliance on fatalistic interpretations may reduce risk perception and discourage proactive preparedness efforts. Consequently, understanding disaster resilience in Aceh requires integrating disaster management principles with religious and cultural foundations that influence community behavior [16].

From a theoretical standpoint, this study conceptualizes psychological resilience using the framework proposed by Bonanno and operationalized through the Connor-Davidson model, which highlights emotional regulation, optimism, cognitive flexibility, self-efficacy, and social support as core components of resilience [11, 25]. Disaster management preparedness is grounded in the UNDRR Sendai Framework, encompassing risk knowledge, emergency response planning, early warning systems, and community participation [25]. Risk perception is informed by Slovic's theory, which explains how individuals cognitively and emotionally evaluate the likelihood and severity of threats [26]. Meanwhile, stress coping is framed through Lazarus and Folkman's stress and coping theory, complemented by religious coping perspectives that emphasize cognitive and behavioral strategies for managing disaster-related stress [27], which includes cognitive and behavioral strategies for managing stress caused by disaster threats [22, 24].

Building on these conceptual foundations, the present study is situated within the broader disaster resilience literature. Prior research consistently highlights the importance of preparedness, risk perception, and coping strategies in shaping psychological resilience [26, 28]. However, as noted by Park & Bae [29], the mechanisms through which these variables interact remain insufficiently understood, particularly in societies with strong cultural and religious identities. This limitation suggests that findings from one socio-cultural context may not be fully transferable to others [11, 25].

Empirical studies further reveal mixed results. Wu et al. [30] demonstrate that preparedness and risk perception

enhance adaptive coping strategies and, in turn, strengthen psychological resilience. Conversely, Dhar et al. [31] and Roudini et al. [32] report that risk perception does not always lead to higher resilience, especially when communities experience disaster fatigue or lack adequate coping resources. Moreover, Ni et al. [33] emphasize that much of the existing literature is dominated by Western perspectives, leaving the cultural and religious contexts of regions such as Aceh underexplored.

This gap underscores the need for empirical research that incorporates psychological, cultural, religious, and historical dimensions of disaster experience within Aceh society [16, 34]. Accordingly, this study aims to examine the influence of disaster management preparedness and risk perception on community psychological resilience in Banda Aceh and Aceh Besar, with stress coping functioning as a mediating variable [14]. By integrating psychosocial, cultural, and religious perspectives, this study is expected to contribute theoretically to the disaster resilience literature and practically to the development of more effective and culturally grounded disaster management strategies for disaster-prone regions [14, 27].

## 2. Materials and Methods

### 2.1. Data Collection

This study employed a quantitative associative research design to examine the relationships between Disaster Management Preparedness (DMP), Risk Perception (RP), Stress Coping (SC), and Community Psychological Resilience (CPR). Data were collected from communities residing in disaster-prone areas of Banda Aceh City and Aceh Besar Regency between December 1 and 7, 2025 [30, 35].

The research population consisted of people living in disaster-prone areas in Banda Aceh City and Aceh Besar Regency, with a total combined population of 761,614 people, including Banda Aceh City (267,736 people) [36] and Aceh Besar Regency (493,878 people for 2025) [37]. The sample was selected using the Slovin formula with a 95 percent confidence level and a 10 percent margin of error, resulting in a minimum required sample of 100 respondents. Before filling out the questionnaire, respondents were given an explanation of the research objectives and assurances of data confidentiality. All data were analyzed using the Partial Least Squares-based Structural Equation Modeling (SEM-PLS) method with the help of SmartPLS software.

Primary data were obtained through structured questionnaires using a 4-point Likert scale (1 = Strongly

Disagree to 4 = Strongly Agree). Prior to data collection, respondents were informed about the research objectives and assured of confidentiality and anonymity [38].

### 2.2. Measurement of Variables

DMP was measured through indicators related to disaster risk knowledge, emergency response planning, early warning system readiness, and community participation. RP reflects individuals' assessments of disaster likelihood, potential impact, perceived control, and level of concern. SC includes problem-focused coping, emotion regulation, and religion-based coping strategies. CPR was measured through adaptability, mental endurance, self-efficacy, and the ability to utilize social support [8, 35].

### 2.3. Analytical Procedure and Study

To ensure analytical rigor and methodological transparency, this study followed a structured analytical procedure commonly applied in SEM-PLS research. The process began with the development of a structured questionnaire based on validated theoretical constructs related to disaster management preparedness, risk perception, stress coping, and psychological resilience [6, 38]. The questionnaire was administered to respondents living in disaster-prone communities in Banda Aceh and Aceh Besar. After data collection, the dataset was screened to identify incomplete responses and ensure data suitability, followed by descriptive statistical analysis to summarize respondent characteristics and data distribution [39].

Subsequently, the measurement model (outer model) was evaluated to assess construct validity and reliability through convergent validity, discriminant validity, and composite reliability, following established SEM-PLS guidelines. After the measurement model was confirmed, the structural model (inner model) was assessed by estimating path coefficients, evaluating the coefficient of determination ( $R^2$ ), and examining mediation effects. Hypothesis testing was conducted using bootstrapping procedures to obtain t-statistics and p-values, enabling robust statistical inference without distributional assumptions [38, 40]. Finally, the results were interpreted and discussed in relation to relevant theoretical frameworks and previous empirical findings in disaster psychology and resilience research [29].

### 2.4. Structural Equation Modeling–Partial Least Squares (SEM-PLS)

Structural Equation Modeling–Partial Least Squares (SEM-PLS) is a variance-based multivariate analytical technique that enables the simultaneous examination of

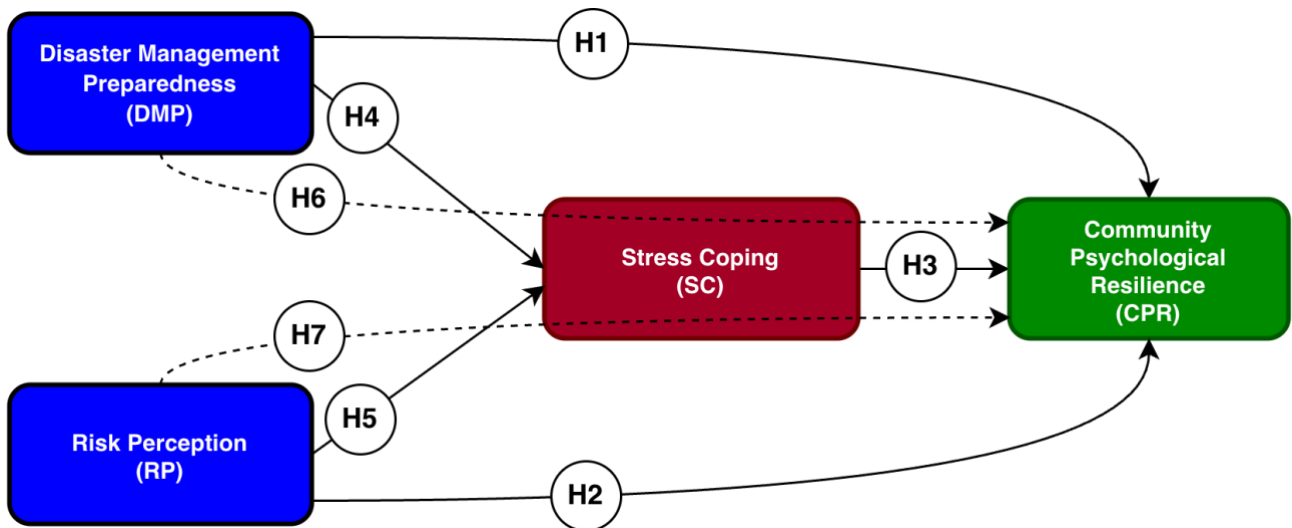


Figure 1. Conceptual framework.

complex relationships among latent variables measured by multiple indicators. SEM-PLS is particularly suitable for predictive research models, exploratory theory development, and studies involving mediation effects, without requiring strict assumptions of data normality or large sample sizes [38, 40].

In this study, SEM-PLS was employed to analyze the relationships between disaster management preparedness, risk perception, stress coping, and community psychological resilience. This approach was selected due to its robustness in handling complex causal models and its ability to assess both direct and indirect effects within a single analytical framework. Furthermore, SEM-PLS allows for the simultaneous evaluation of measurement models and structural models, making it appropriate for research involving psychological and behavioral constructs in disaster-related contexts [38].

### 2.5. Structural Model Specification and Construct Equations

The structural model in this study was specified to examine the direct and indirect relationships among DMP, RP, SC, and CPR. Stress Coping was modeled as a mediating variable linking preparedness and risk perception to psychological resilience. Based on the proposed conceptual framework, Structural Equations 1 and 2 were formulated in accordance with SEM-PLS conventions [38].

$$SC = \beta_1 DMP + \beta_2 RP + \zeta_1 \quad (1)$$

$$CPR = \beta_3 DMP + \beta_4 RP + \beta_5 SC + \zeta_2 \quad (2)$$

Where SC represents Stress Coping, CPR denotes Community Psychological Resilience,  $\beta_1 - \beta_5$  are the path coefficients, and  $\zeta_1 - \zeta_2$  represent the error terms of the

respective endogenous constructs. These equations allow for the assessment of both direct effects of DMP and RP on CPR, as well as indirect effects mediated through Stress Coping.

### 2.6. Conceptual Framework and Research Hypotheses

Based on the conceptual framework and relevant literature, seven hypotheses are proposed, as shown in Figure 1: H1 states that DMP has a positive and significant effect on SC; H2 states that RP has a positive and significant effect on SC; H3 states that DMP has a positive and significant effect on CPR; H4 states that RP has a positive and significant effect on CPR; H5 states that SC has a positive and significant effect on CPR; H6 states that SC mediates the relationship between DMP and CPR; and H7 states that SC mediates the relationship between RP and CPR.

## 3. Results

This section presents the empirical findings of the study based on Structural Equation Modeling–Partial Least Squares (SEM-PLS) analysis. The findings focus exclusively on statistical outcomes, including measurement model evaluation, structural model estimates, coefficients of determination ( $R^2$ ), and mediation effects. To avoid redundancy, theoretical interpretation is reserved for the Discussion section.

The structural model analysis indicates that Disaster Management Preparedness and Risk Perception have positive and statistically significant effects on Stress Coping. In addition, Disaster Management Preparedness, Risk Perception, and Stress Coping significantly influence Community Psychological Resilience. The mediation analysis further reveals that Stress Coping mediates the relationships between Disaster Management

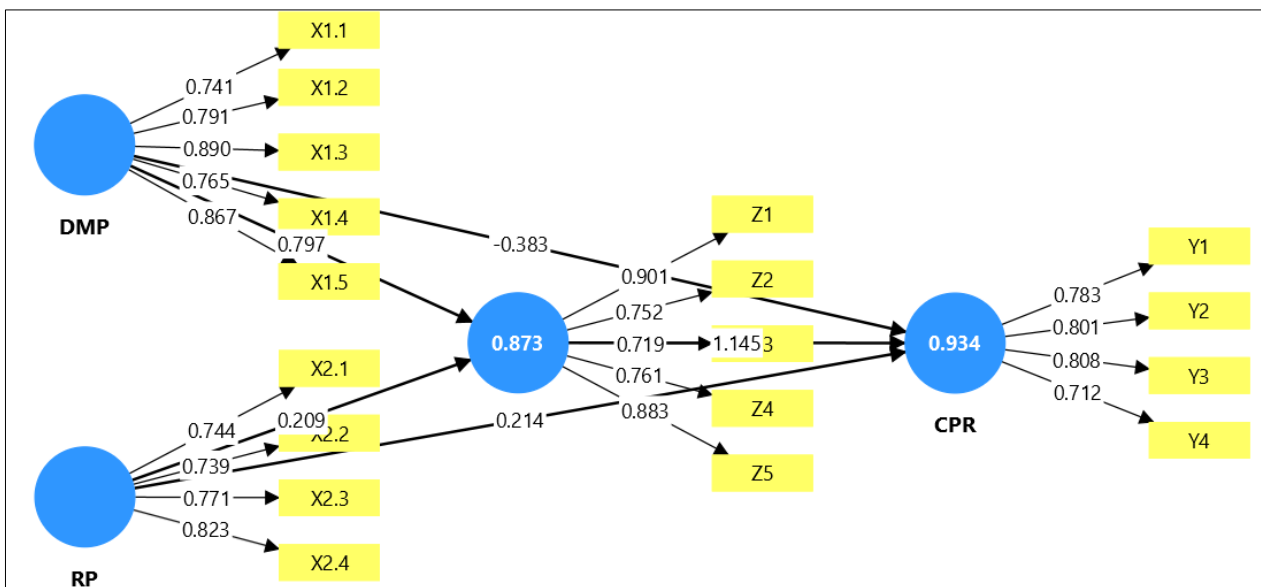
**Table 1.** Descriptive statistics.

| Variable  | Original Sample (Standardized Coef.) | Mean   | Std. Dev. |
|-----------|--------------------------------------|--------|-----------|
| DMP → CPR | -0.383                               | -0.386 | 0.088     |
| RP → CPR  | 0.214                                | 0.218  | 0.043     |
| SC → CPR  | 1.145                                | 1.145  | 0.095     |
| DMP → SC  | 0.797                                | 0.796  | 0.055     |
| RP → SC   | 0.209                                | 0.210  | 0.069     |

**Table 2.** Convergent validity and composite reliability.

| Variable | Cronbachs Alpha | Composite Reliability | Average Variance Extracted |
|----------|-----------------|-----------------------|----------------------------|
| DMP      | 0.872           | 0.889                 | 0.661                      |
| RP       | 0.772           | 0.783                 | 0.593                      |
| SC       | 0.863           | 0.872                 | 0.651                      |
| CPR      | 0.782           | 0.791                 | 0.603                      |

Note: Cronbach's Alpha and Composite Reliability values above 0.70 indicate satisfactory internal consistency reliability. Average Variance Extracted (AVE) values greater than 0.50 confirm adequate convergent validity for all constructs.



**Figure 2.** Cross loading.

Preparedness and Community Psychological Resilience, as well as between Risk Perception and Community Psychological Resilience.

**3.1. Descriptive Statistics**

Data analysis was conducted using the Partial Least Squares Structural Equation Modeling (SEM-PLS) approach. Table 1 presents the descriptive statistics of the path coefficients, means, and standard deviations for the relationships among the variables examined in this study.

Based on the descriptive statistical results, DMP demonstrates a strong positive effect on SC with a path coefficient of 0.797 (mean = 0.796, SD = 0.055), indicating that higher community preparedness substantially enhances stress management capacity. RP positively influences CPR with a coefficient of 0.214 (mean = 0.218, SD = 0.043), indicating a positive association between risk

perception and community psychological resilience. Notably, SC emerges as a crucial mediating variable, demonstrating the strongest relationship with CPR (coefficient = 1.145, mean = 1.145, SD = 0.095).

**3.2. Measurement Model Evaluation**

The measurement outer model demonstrates that convergent validity and construct reliability have been achieved, as presented in Table 2. All constructs exhibit Cronbach's Alpha and Composite Reliability values exceeding 0.70, along with Average Variance Extracted (AVE) values above 0.50, thereby confirming that all constructs are valid and reliable.

Inner model testing was performed to assess the relationships between the latent variables using the bootstrapping procedure. The cross-loading results illustrated in Figure 2 demonstrate that each indicator exhibits a higher loading on its intended construct

**Table 3.** Results of SEM estimation.

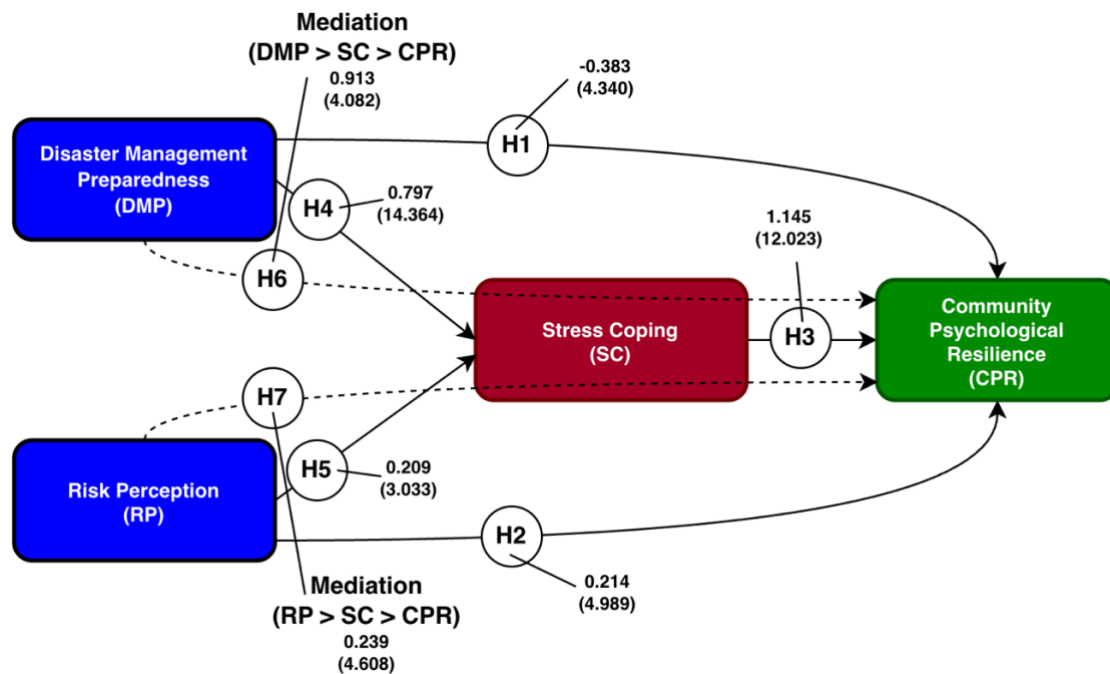
| Variable      | Standardized Coef. (O) | T Statistics ( O/STDEV ) | P Values |
|---------------|------------------------|--------------------------|----------|
| DMP → CPR     | -0.383*                | 4.340                    | 0.000    |
| RP → CPR      | 0.214*                 | 4.989                    | 0.000    |
| SC → CPR      | 1.145*                 | 12.023                   | 0.000    |
| DMP → SC      | 0.797*                 | 14.364                   | 0.000    |
| RP → SC       | 0.209*                 | 3.033                    | 0.002    |
| DMP, SC → CPR | 0.913*                 | 4.082                    | 0.000    |
| RP, SC → CPR  | 0.239*                 | 4.608                    | 0.000    |

Note: \* indicates significance at the 1% level.

**Table 4.** R square (R<sup>2</sup>).

| Model | R-square | R-square Adjusted |
|-------|----------|-------------------|
| SC    | 0.873    | 0.871             |
| CPR   | 0.934    | 0.931             |

Note: R<sup>2</sup> values represent the proportion of variance explained by the exogenous variables in the endogenous constructs. Higher R<sup>2</sup> values indicate stronger explanatory power of the structural model.



**Figure 3.** Graphical findings based on the conceptual framework.

compared to other constructs, confirming that discriminant validity has been achieved.

These findings strengthen the conclusion that the constructs DMP, RP, SC, and CPR are empirically distinct, with no indication of indicator redundancy or construct overlap.

### 3.3. Structural Model Results

Structural model analysis aims to test the causal relationships between latent variables formulated in the conceptual framework of this study. The results presented in Table 3 were obtained using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach. This analysis estimates the magnitude of the direct and indirect effects among DMP, RP, SC, and CPR.

The significance of these effects was examined using the bootstrapping procedure, which generates t-statistics and p-values to determine whether each proposed hypothesis is accepted or rejected.

For greater clarity, the results of the structural model are further explained in Figure 3. The figure visualizes the estimated standardized path coefficients based on the conceptual framework, allowing a clearer interpretation of the magnitude and direction of the relationships among Disaster Management Preparedness, Risk Perception, Stress Coping, and Community Psychological Resilience.

The results demonstrate that all direct relationships are statistically significant. DMP negatively affects CPR ( $\beta = -0.383$ ,  $t = 4.340$ ,  $p < 0.001$ ), suggesting a suppression

effect where preparedness alone, without adaptive coping mechanisms, may paradoxically reduce resilience, possibly due to heightened anxiety or perceived inadequacy. In contrast, RP positively influences CPR ( $\beta = 0.214, t = 4.989, p < 0.001$ ), indicating that individuals with clearer risk awareness develop stronger mental readiness.

SC emerges as the strongest predictor of resilience ( $\beta = 1.145, t = 12.023, p < 0.001$ ), confirming that effective coping strategies, whether problem-focused, emotion-focused, or religious, play a central role in strengthening psychological capacity. Furthermore, DMP significantly enhances SC ( $\beta = 0.797, t = 14.364, p < 0.001$ ), while RP also contributes to coping development ( $\beta = 0.209, t = 3.033, p < 0.01$ ).

The mediation analysis reveals that Stress Coping serves as a crucial psychological pathway. The indirect effect of DMP on CPR through SC is strongly significant ( $\beta = 0.913, t = 4.082, p < 0.001$ ), indicating that preparedness transforms into resilience primarily through enhanced coping capacity. Similarly, the indirect effect of RP on CPR via SC ( $\beta = 0.239, t = 4.608, p < 0.001$ ) demonstrates that risk awareness fosters resilience by encouraging adaptive coping strategies. These findings confirm that SC fully mediates the relationships.

#### 3.4. Coefficient of Determination ( $R^2$ )

The R-square ( $R^2$ ) value reflects the extent to which the independent variables can explain the variance of the dependent variables. As shown in Table 4, the SC variable has an  $R^2$  value of 0.873, indicating that 87.3% of its variance is explained by DMP and RP. Meanwhile, the CPR variable shows an even higher  $R^2$  value of 0.934, meaning that 93.4% of the variation in CPR is explained by the combined influence of DMP, RP, and SC.

These high  $R^2$  values demonstrate that the model has strong explanatory power and provides a robust representation of the relationships among the constructs within the context of this study.

#### 3.5 Discussion

The results of this study confirm that DMP and RP play crucial roles in shaping SC and, subsequently, CPR among communities living in disaster-prone areas of Banda Aceh and Aceh Besar. The positive and significant paths observed in the SEM analysis demonstrate that individuals who are better prepared and possess clearer perceptions of disaster risks tend to engage more in adaptive coping strategies that strengthen their psychological capacity to face potential hazards. These findings align with studies by Paton [6], Badía et al. [8] and

Hu et al. [13], who emphasized that preparedness, risk awareness, and coping capabilities are interrelated psychological components that significantly influence resilience outcomes.

This study expands on previous findings by presenting the latest empirical evidence amid the current earthquake and flood disasters in Aceh, placing it in the socio-religious and historical context of Acehese society, which is still shaped by the collective memory of the 2004 tsunami. This study highlights that the dynamics of preparedness, risk perception, and coping among the Acehese community are strongly influenced by cultural values, communal ties, and distinctive religious practices [31, 32]. The strong relationship between coping strategies and resilience found here suggests that cultural, religious, and collectivist values amplify the community's ability to withstand psychological pressure. Communities with high-risk awareness not only recognize the need for preparation but also view mitigation efforts such as prayer, mutual assistance, and emotional regulation as moral and religious responsibilities. This cultural alignment supports the argument proposed by Ali & Weir [22] and Mubarak et al. [24] that Islamic principles of patience, sincerity, *tawakkul*, and collective solidarity foster psychological strength and enhance community-based resilience.

The mediating role of Stress Coping between DMP and CPR, as well as between RP and CPR, highlights that preparedness and risk perception do not automatically translate into resilience unless supported by effective coping mechanisms. Consistent with the coping theory of Jr & Dimitriou [27], the findings show that individuals who perceive their environment as predictable, controllable, and meaningful tend to adopt more constructive approaches to stress management. This implies that disaster management programs emphasizing knowledge, skills, and emotional readiness can enhance coping capacity, which in turn strengthens community resilience at both the individual and collective levels.

These results are consistent with prior studies emphasizing the importance of preparedness and coping in enhancing resilience. Research by Badía et al. [8] and Hu et al. [13] shows that coping acts as a mediator between risk perception and mental wellbeing during crises, confirming the central role of psychological mechanisms in disaster contexts. Thus, the findings of this study reinforce the argument that improving resilience requires not only structural preparedness but also strengthening community coping capacity. Additionally, these findings align with the framework proposed by Jr & Dimitriou [27], which views coping as a direct psychological response to stressors. Communities

with meaningful coping strategies supported by religious values, cultural norms, and social cohesion are more capable of recovering quickly from disasters. This is particularly relevant in Aceh, where religious beliefs and collective social values strongly influence community behavior and their approach to disaster risks.

However, compared with several previous studies that found inconsistent relationships between risk perception, coping, and resilience, the present study provides stronger empirical evidence. Research by Dhar et al. [31] and Roudini et al. [32] indicated that risk perception does not always strengthen resilience, especially when communities lack coping resources or experience disaster fatigue. Likewise, Ni et al. [33] emphasized that preparedness alone cannot guarantee resilience without psychological readiness. In contrast, this study confirms that when preparedness, risk perception, and coping are integrated, they collectively enhance psychological resilience significantly. These results highlight the importance of designing disaster management programs that combine structural preparedness with psychosocial strengthening at the community level.

The results also reveal that the direct effect of DMP and RP on CPR is weaker than their indirect effects mediated through SC. This suggests that preparedness and risk perception alone are insufficient to build robust psychological resilience without being accompanied by adaptive behavioral responses such as problem-solving, emotional regulation, and religious coping. This pattern is consistent with the arguments of Roudini et al. [32] and Seibert et al. [41], who found that psychological resilience operates most effectively when communities possess internal coping resources supported by social networks and cultural values.

From a practical standpoint, the findings underscore the importance for government agencies, disaster management authorities, and community leaders in Aceh to develop programs that strengthen both preparedness and coping capacities. Community-based disaster education, regular simulation training, risk communication strategies, and psychosocial support activities grounded in Islamic values can enhance community awareness and improve emotional and cognitive readiness. Integrating religious coping, such as spiritual counseling, collective prayer, and community solidarity, into disaster management programs may further reinforce psychological resilience among Acehnese communities.

Overall, this discussion highlights that community resilience in disaster-prone areas is not solely

determined by structural or technical aspects of disaster management but is deeply influenced by psychological, cultural, and religious dynamics. By contextualizing Stress Coping and Psychological Resilience within Aceh's unique social fabric, this study contributes to a more holistic understanding of disaster behavior in developing regions with strong cultural and spiritual identities.

#### 4. Conclusions, Implications, and Limitations

This study examined the role of SC in mediating the influence of DMP and RP on CPR among communities in disaster-prone areas of Aceh. The results confirmed that both DMP and RP significantly strengthen CPR, both directly and indirectly through SC. Individuals who are better prepared, possess clearer perceptions of disaster risks, and apply adaptive coping strategies such as problem-solving, emotional regulation, and religious coping demonstrate higher levels of psychological resilience when facing disaster threats.

These findings also reinforce the theoretical frameworks proposed in previous disaster psychology literature [6, 8], indicating that preparedness, risk awareness, and coping resources play a crucial role in shaping adaptive behaviors and psychological outcomes during crises. In the context of Aceh, where religious values, collective culture, and historical disaster experience shape community behavior, coping strategies function as a bridge between knowledge-based preparedness and emotional readiness [7, 27]. This suggests that the effectiveness of disaster management does not rely solely on infrastructure or policy, but also on the ability of communities to internalize preparedness, accurately perceive risks, and engage in psychologically constructive coping practices.

From a practical perspective, the findings highlight the need for disaster management authorities, local governments, and community leaders in Aceh to prioritize psychosocial strengthening in preparedness programs. Efforts such as community-based disaster education, participatory simulations, accessible risk communication, and religious or culturally grounded counseling can enhance coping capabilities and cultivate stronger resilience. Strengthening psychosocial preparedness is expected to increase community readiness, reduce anxiety, and reinforce collective resilience in regions highly vulnerable to earthquakes, floods, and tsunamis.

Despite its contributions, this study is limited to communities in selected areas of Banda Aceh City and Aceh Besar Regency and relies on a quantitative approach, which may restrict deeper exploration of individual experiences and cultural dynamics. Future

research should consider mixed methods and broader geographic coverage, and incorporate contextual variables such as religious coping styles, community social capital, leadership roles, and local wisdom. These additional dimensions will enrich understanding of how social, cultural, and spiritual factors interact with disaster preparedness to shape community resilience.

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