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The Impact of Servant Leadership on Adaptive Performance: Mediation by Resilience and Psychological Empowerment in Hydrometeorological Disaster Response

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A B S T R A C T

This study examines the influence of servant leadership on adaptive performance among government personnel involved in hydrometeorological disaster management in Agam Regency, West Sumatra, Indonesia. Using a quantitative explanatory design with SEM-PLS analysis on 200 purposively sampled respondents from relevant Regional Apparatus Organizations (OPD), data were collected via Likert-scale questionnaires. Results indicate that servant leadership significantly and positively affects resilience and psychological empowerment, both of which mediate its relationship with adaptive performance. The study concludes that in high-uncertainty disaster response settings, servant leadership operates indirectly through building employees' personal resources rather than through a direct pathway. The direct effect was found to be non-significant ($\beta = 0.027$, $p = 0.584$), reinforcing that resilience and psychological empowerment serve as full mediators in this relationship.

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INTRODUCTION

Disasters are sudden and serious events that disrupt community functions, threatening lives, causing economic losses, and generating environmental impacts that communities cannot overcome independently (International Federation of Red Cross and Red Crescent Societies [IFRC], n.d.). According to Law No. 24 of 2007 concerning Disaster Management, disasters in Indonesia are classified into three categories: natural, non-natural, and social. Natural disasters, particularly hydrometeorological events such as floods, flash floods, and landslides, represent the highest threat due to Indonesia's geographical position at the convergence of three tectonic plates and its tropical climate with distinct wet and dry seasons (Undang-Undang Republik Indonesia Nomor 24 Tahun 2007).

At the end of 2025, extreme rainfall triggered by the rare formation of Tropical Cyclone Senyar in the Malacca Strait, combined with active Asian monsoon dynamics and equatorial Rossby waves, caused prolonged heavy rainfall across several regions in Sumatra. West Sumatra Province was severely affected, with Agam Regency experiencing the most significant impacts. Located in the Bukit Barisan highlands with hilly topography and numerous rivers, Agam Regency is highly vulnerable to hydrometeorological disasters. The event resulted in flash floods and landslides that caused extensive damage, particularly in the sub-districts of Palembang, Tanjung Raya, IV Koto, Malalak, Matur, Palupuah, and Ampek Nagari. Official data from the Regional Disaster Management Agency (BPBD) of Agam Regency as of 14 December 2025 recorded 192 fatalities, 72 missing persons, 5,027 displaced individuals, 7 people receiving medical treatment, 19,402 affected individuals, 54 people still isolated, and material losses reaching Rp 741,547,098,000 (BPBD Kabupaten Agam, 2025).

In disaster response efforts, effective local governance is essential. Disaster management requires systematic decision-making processes at the local level involving both internal entities (elected representatives, public administration personnel, and local government) and external stakeholders (communities, local groups, businesses, media, and non-profit organizations) (Baidar, 2024). The hydrometeorological disaster in Agam Regency not only inflicted physical and economic losses but also forced a sudden shift in the work patterns of local government personnel. Employees, who normally performed routine office tasks aligned with their position descriptions, were reassigned to field operations such as evacuation, aid distribution, and infrastructure reconstruction while simultaneously maintaining their regular duties. This rapid transition created high uncertainty, physical risks, psychological pressure, and real-time coordination demands with external stakeholders.

Such dynamic conditions demand high adaptive performance from personnel—the ability to flexibly adjust behaviors, strategies, and actions in response to unpredictable and changing environments (Kalitainen & Hakanen, 2020). Without effective adaptation, disaster response processes can be hindered, exacerbating impacts on affected communities. In the Indonesian context, this adaptation is also an embodiment of the ASN (State Civil

Apparatus) core values, particularly "service-oriented" and "adaptive," which emphasize fulfilling community needs and adjusting to change during emergencies (Hariyanto & Sutawijaya, 2024).

To support adaptive performance in crisis situations, leadership plays a pivotal role. Servant leadership, first conceptualized by Greenleaf (1977), is particularly relevant because it prioritizes followers' needs, fosters inclusion, builds psychological safety, and empowers employees to serve others (Eva et al., 2019; Peng et al., 2023). In disaster management, leaders who adopt a servant-oriented approach can better address the psychological and practical needs of personnel operating under extreme pressure. Drawing on Conservation of Resources (COR) Theory (Hobfoll, 1989), individuals strive to acquire, retain, and protect resources to cope with stress. Resource loss—common during disasters—can lead to psychological distress, whereas investment in personal resources such as resilience and psychological empowerment helps individuals recover and perform adaptively (Bardoel & Drago, 2021; Farkash et al., 2022).

Resilience is defined as the capacity to recover from adversity, maintain positive functioning, and adapt successfully to significant stress (Luthans et al., 2007; Siddiquei et al., 2025). Psychological empowerment refers to employees' intrinsic motivation characterized by meaning, competence, self-determination, and impact (Kundu & Kumar, 2019; Spreitzer, 1995).

Although servant leadership, resilience, psychological empowerment, and adaptive performance have been studied extensively, most prior research has focused on stable business environments, general public organizations, or pandemic contexts (e.g., Kaltiainen & Hakanen, 2020; Cai et al., 2024; Winarno et al., 2025). Few studies have examined these variables together in the unique setting of hydrometeorological disaster response within local government, especially in Indonesia where sudden shifts in work patterns are acute. This study addresses that gap by investigating the influence of servant leadership on adaptive performance, with resilience and psychological empowerment as mediators, specifically among government personnel involved in the 2025 hydrometeorological disaster response in Agam Regency.

The present research is therefore motivated by both practical urgency and theoretical contribution. It seeks to answer the following research questions: (1) To what extent does servant leadership influence adaptive performance? (2) Do resilience and psychological empowerment mediate this relationship? By integrating COR Theory with servant leadership in a real public-sector crisis context, this study provides empirical evidence that can inform disaster management policies and leadership practices in disaster-prone regions.

THEORETICAL REVIEW

Conservation of Resources (COR) Theory

Conservation of Resources (COR) Theory originally proposed by Hobfoll (1989), serves as the primary theoretical framework for this study. COR Theory posits that individuals strive to acquire, retain, protect, and build resources to

cope with stress and uncertainty. Resources are defined as anything perceived by the individual to help achieve goals, including personal characteristics, conditions, energy, and objects (Halbesleben in Brennan et al., 2023). The theory emphasizes two core principles: the primacy of resource loss, whereby resource loss is more salient and impactful than resource gain, and the necessity of resource investment to protect against future loss, recover from loss, or acquire new resources (Bardoel & Drago, 2021).

In disaster contexts, rapid resource loss—such as physical safety, psychological well-being, social support, and material assets—triggers stress and distress; therefore, individuals and organizations must invest in and conserve resources to maintain functioning and achieve positive adaptation (Farkash et al., 2022; Munoz et al., 2024). COR Theory has been widely applied to explain resilience and adaptive behaviors during crises, including natural disasters, pandemics, and workplace stressors (Bardoel & Drago, 2021; Brennan et al., 2023).

Servant Leadership

Servant leadership, first conceptualized by Greenleaf (1977), is a leadership approach in which the leader prioritizes serving others before seeking to lead. It is characterized by humility, stewardship, empowerment, and genuine concern for followers' growth and well-being (Eva et al., 2019). Unlike traditional leadership styles that emphasize power and performance outcomes, servant leadership places followers' needs first, fostering trust, psychological safety, and long-term development (Peng et al., 2023). In organizational settings, servant leadership has been shown to enhance employee motivation by fulfilling basic psychological needs for autonomy, relatedness, and competence (Hariyanto & Sutawijaya, 2024). In disaster management, servant leadership becomes particularly critical because leaders must operate under extreme uncertainty, high emotional demands, and resource constraints. Leaders who adopt a servant orientation can better support personnel by providing emotional support, clear direction, and empowerment, thereby enabling effective field operations (Asamoah, 2025; Siddiquei et al., 2025).

H1: Servant leadership positively affects adaptive performance.

Resilience

Resilience is a dynamic psychological capacity that enables individuals to recover from adversity, maintain positive functioning, and adapt successfully to significant stress (Luthans et al., 2007; Siddiquei et al., 2025). It is viewed as a personal resource within COR Theory that buffers against resource loss and promotes positive adaptation following traumatic events (Bakkaloglu, 2023; Cai et al., 2024). In high-pressure environments such as disaster response, resilient personnel demonstrate greater work engagement, lower emotional exhaustion, and higher ability to maintain performance despite obstacles (Tang et al., 2024; Winarno et al., 2025). Empirical studies consistently link servant leadership to employee resilience, as servant leaders create supportive environments that build psychological resources (Peng et al., 2023; Siddiquei et al., 2025).

H2: Servant leadership positively affects resilience.
H3: Resilience positively affects adaptive performance

Psychological Empowerment

Psychological empowerment refers to an intrinsic motivational state characterized by four cognitive dimensions: meaning, competence, self-determination, and impact (Spreitzer, 1995; Kundu & Kumar, 2019). It reflects employees' perceptions of control, influence, and value in their work (Xu & Zhang, 2022). Within COR Theory, psychological empowerment functions as a key personal resource that helps individuals conserve and invest psychological energy during crises (Xu et al., 2025). Servant leadership has been shown to foster psychological empowerment by delegating authority, providing meaningful tasks, and demonstrating care for followers' development (Hariyanto & Sutawijaya, 2024; Xu et al., 2025). Empowered employees exhibit greater initiative and adaptability, particularly in dynamic and uncertain contexts such as disaster response (Wang et al., 2022).
H4: Servant leadership positively affects psychological empowerment
H5: Psychological empowerment positively affects adaptive performance

Adaptive Performance

Adaptive performance is the ability of individuals to flexibly modify their behaviors, strategies, and actions in response to changing, unpredictable, or novel work demands (Kaltiainen & Hakanen, 2020; McLoughlin & Priyadarshini, 2021). It is especially vital in crisis situations where routine procedures are insufficient and rapid adjustment is required (Bonini et al., 2024). Adaptive performance encompasses dimensions such as handling emergencies, managing stress, creative problem-solving, and interpersonal adaptability (Charbonnier in Kaltiainen & Hakanen, 2020). Previous research indicates that adaptive performance is influenced by both leadership behaviors and personal resources such as resilience and psychological empowerment (Cai et al., 2024; Tang et al., 2024).
H6: Resilience mediates the effect of servant leadership on adaptive performance.
H7: Psychological empowerment mediates the effect of servant leadership on adaptive performance.

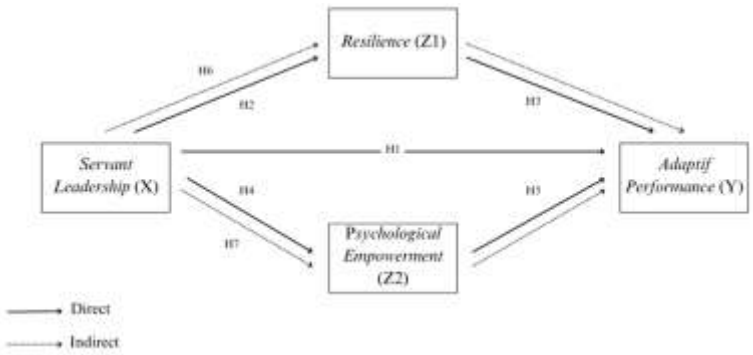

Figure 1. Conceptual Framework

METHODOLOGY

Research Design

This study adopted a quantitative approach with a survey-based design to examine the influence of servant leadership on adaptive performance among government personnel involved in hydrometeorological disaster management. The research was conducted in Agam Regency, West Sumatra Province, Indonesia, during the 2025 hydrometeorological disaster response period (November-December 2025). The study focused on real-time conditions following the flash floods and landslides triggered by extreme rainfall.

The study is classified as an explanatory survey research using a cross-sectional approach. Primary data were collected through structured questionnaires to test the proposed relationships and hypotheses derived from Conservation of Resources (COR) Theory (Hobfoll, 1989). This design is appropriate for examining causal relationships in a specific crisis context where rapid data collection is required (Sugiyono, 2018; Sekaran & Bougie, 2016).

Population, Sample, and Sampling Technique

The population comprised all government personnel from various Regional Apparatus Organizations (OPD) who were directly involved in disaster response activities in Agam Regency. Purposive sampling was employed to select respondents who met the following criteria: (1) actively assigned to field operations (evacuation, aid distribution, reconstruction, or coordination), (2) had at least two weeks of involvement during the emergency response period, and (3) willing to participate voluntarily. A total of 230 questionnaires were distributed, yielding 200 valid responses (response rate of 86.95%). This sample size satisfies the minimum requirement for PLS-SEM analysis (minimum 10 times the number of indicators with the highest number of arrows pointing to a construct) (Hair et al., 2022; Ghozali & Latan, 2015).

Data Collection Method

Data were collected using a self-administered questionnaire distributed both online (via Google Forms) and offline (printed forms) at disaster command posts and OPD offices. The questionnaire consisted of two parts: (1) respondent demographic information and (2) measurement items for the research variables. All items were measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The instrument was developed by adapting established scales from previous studies and was pre-tested for clarity and readability with 30 personnel not included in the final sample.

Measurement of Variables

All constructs were measured using validated instruments adapted to the Indonesian disaster management context. The study examined four latent variables: one independent variable (servant leadership), two mediating variables (resilience and psychological empowerment), and one dependent variable (adaptive performance). No moderating variable was included in the final model based on the theoretical focus on mediation mechanisms:

- Servant Leadership (independent variable): Measured with 7 items adapted from Liden et al. (as cited in Eva et al., 2019) and Hariyanto and Sutawijaya (2024), covering dimensions of emotional healing, empowerment, and stewardship. Sample items include "My leader prioritizes my needs over organizational goals" and "My leader provides emotional support during difficult tasks."
- Resilience (mediator): Measured with 6 items adapted from Luthans et al. (2007) and Siddiquei et al. (2025), focusing on positive adaptation and recovery from adversity. Sample items include "I can bounce back quickly from setbacks" and "I remain calm under pressure during emergency operations."
- Psychological Empowerment (mediator): Measured with 12 items adapted from Spreitzer (1995) and Kundu and Kumar (2019), covering four dimensions: meaning, competence, self-determination, and impact. Sample items include "My work is meaningful to me" and "I have significant autonomy in deciding how to perform my tasks."
- Adaptive Performance (dependent variable): Measured with 8 items adapted from Charbonnier (as cited in Kaltiainen & Hakanen, 2020) and McLoughlin and Priyadarshini (2021), including handling emergencies, stress management, and interpersonal adaptability. Sample items include "I can quickly adapt to changes in disaster field conditions" and "I effectively manage stress during crisis situations.".

Data Analysis Technique

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4 software (Ringle et al., as cited in Hair et al., 2022). PLS-SEM was chosen because it is suitable for complex models with mediation, relatively small-to-medium sample sizes, and non-normal data distribution common in social science research (Hair et al., 2022; Ghozali & Latan, 2015).

The analysis followed a two-step approach:

- Outer model evaluation (measurement model): Convergent validity (outer loading > 0.70, Average Variance Extracted [AVE] > 0.50), discriminant validity (Fornell-Larcker criterion and Heterotrait-Monotrait [HTMT] ratio < 0.85), and reliability (Cronbach's alpha and composite reliability > 0.70). Items with low outer loadings were dropped iteratively until all criteria were met.
- Inner model evaluation (structural model): Coefficient of determination (R^2), effect size (f^2), path coefficients, and significance testing using bootstrapping procedure with 5,000 resamples. Mediation was tested using the indirect effect method examining both direct and indirect paths from servant leadership to adaptive performance through resilience and psychological empowerment.).

Seven hypotheses were tested in this study: H1 (direct effect of servant leadership on adaptive performance), H2 (effect on resilience), H3 (resilience to adaptive performance), H4 (effect on psychological empowerment), H5

(psychological empowerment to adaptive performance), H6 (mediation via resilience), and H7 (mediation via psychological empowerment). All statistical decisions were based on a 5% significance level ($p < 0.05$). Data screening for missing values, outliers, and common method bias (Harman's single-factor test) was performed prior to hypothesis testing.

This methodology ensures the study is replicable under similar disaster-response conditions while maintaining high standards of validity and reliability.

RESULTS

Overview of the Study, Response Rate, and Respondent Characteristics

This study involved government personnel from various Regional Apparatus Organizations (OPD) directly assigned to hydrometeorological disaster response in Agam Regency following the 2025 flash floods and landslides. A total of 230 questionnaires were distributed, resulting in 200 valid responses (response rate of 86.95%). The high response rate reflects strong engagement of personnel during the emergency period. Respondents were predominantly male (66%) and female (34%) with the dominant age range of 26-35 years.

Descriptive Analysis

Descriptive statistics (Total Criterion Rate/TCR) revealed moderate to good perceptions across variables. Servant Leadership had an average TCR of 61% (poor), Resilience averaged 76% (good), Psychological Empowerment 76% (good), and Adaptive Performance 76% (good). These findings highlight that while personnel demonstrated reasonable resilience and empowerment, limited leadership feedback was a prominent challenge during the crisis.

Outer Model Measurement

The results of the outer model evaluation indicate that all constructs meet the recommended criteria for validity and reliability. The outer loading values for all indicators are above the threshold of 0.50, indicating that each indicator has a strong correlation with its respective construct. This confirms that all indicators are valid measures of their latent variables.

Furthermore, the Cronbach's Alpha values range from 0.760 to 0.919, and Composite Reliability (CR) values range from 0.769 to 0.935, all exceeding the minimum threshold of 0.70. These results demonstrate strong internal consistency reliability among the constructs. Additionally, the Average Variance Extracted (AVE) values range from 0.509 to 0.677, which are above the recommended threshold of 0.50, confirming convergent validity (Sarstedt et al., 2021). Therefore, it can be concluded that the measurement model is both valid and reliable.

The outer model was assessed for validity and reliability using PLS-SEM in SmartPLS 4. After dropping low-loading items, all outer loadings exceeded 0.70, AVE values ranged from 0.52 to 0.68 (>0.50), and discriminant validity was confirmed (Fornell-Larcker criterion and HTMT ratio < 0.85). Composite

reliability and Cronbach's alpha for all constructs exceeded 0.70, indicating strong reliability.

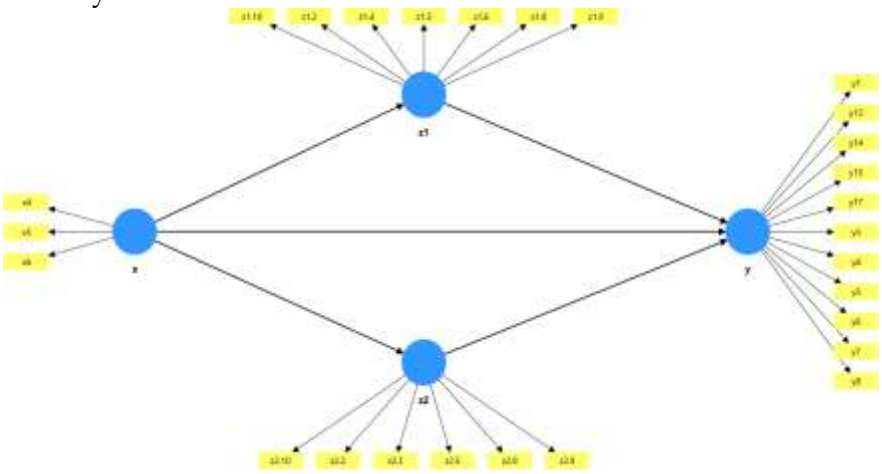

Figure 2. Outer Loading

Table 1. Fornell Larckerr Criterion

	Servant Leadership	Adaptive Performance	Resilience	Psychological Empowerment
x	0,822			
y	0,332	0,727		
z1	0,368	0,750	0,735	
z2	0,388	0,585	0,604	0,742

The Fornell-Larcker criterion was used to assess discriminant validity, which ensures that each construct is empirically distinct from the others. As shown in Table 1, the square root of the Average Variance Extracted (AVE) for each construct (values on the diagonal, in bold) is greater than its highest correlation with any other construct (off-diagonal values). For instance, the square root of AVE for Resilience (0.735) exceeds its correlation with Adaptive Performance (0.750) and Psychological Empowerment (0.604). Similarly, the values for Servant Leadership (0.822), Adaptive Performance (0.727), and Psychological Empowerment (0.742) all satisfy the criterion. These results confirm that discriminant validity is well established, indicating that the constructs in the proposed model are conceptually and empirically distinct

Table 2. Heterotrait Monotrait Ratio (HTMT) Result

	Servant Leadership	Adaptive Performance	Resilience	Psychological Empowerment
x				
y	0,390			
z1	0,459	0,829		
z2	0,427	0,616	0,683	

Discriminant validity was further evaluated using the HTMT ratio, a more stringent criterion. As presented in Table 2, all HTMT values are below the recommended threshold of 0.85, ranging from 0.390 (between Servant Leadership and Adaptive Performance) to 0.829 (between Resilience and Adaptive Performance). The highest value (0.829) remains within the acceptable limit. Therefore, the HTMT analysis provides strong evidence that discriminant validity is achieved across all construct pairs, confirming that each latent variable captures unique phenomena not shared by others in the model.

Table 3. Composite Reliability dan Cronbach Alpha

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)
Servant Leadership	0,760	0,771	0,862
Adaptive Performance	0,910	0,916	0,924
Resilience	0,857	0,864	0,891
Psychological Empowerment	0,843	0,906	0,879

The reliability of the measurement model was assessed using Cronbach's alpha, composite reliability (rho_a), and composite reliability (rho_c). As shown in Table 3, all values exceed the recommended threshold of 0.70. Cronbach's alpha ranges from 0.760 (Servant Leadership) to 0.910 (Adaptive Performance), while rho_c ranges from 0.862 (Servant Leadership) to 0.924 (Adaptive Performance). These results indicate that all constructs exhibit high internal consistency and reliability. Consequently, the measurement items for Servant Leadership, Adaptive Performance, Resilience, and Psychological Empowerment are considered reliable for further structural analysis.

Inner Model Measurement

The structural model (inner model) was evaluated to examine the relationships between latent variables and to test the proposed hypotheses. In PLS-SEM, the inner model assessment includes evaluation of the coefficient of determination (R-square) and path coefficients (Sarstedt et al., 2021)

Table 4. Path Coefficient Results (Direct Effects)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Servant Leadership > Adaptive Performance	0,027	0,029	0,049	0,547	0,584
Servant Leadership	0,368	0,370	0,069	5,329	0,000

> Resilience					
Servant Leadership > Psychological Empowerment	0,388	0,392	0,060	6,466	0,000
Resilience > Adaptive Performance	0,619	0,623	0,055	11,334	0,000
Psychological Empowerment > Adaptive Performance	0,200	0,201	0,066	3,031	0,002

The structural model was tested using bootstrapping procedures (5,000 resamples) to evaluate the direct effects among latent variables. As reported in Table 4, Servant Leadership has a significant positive effect on Resilience ($\beta = 0.368$, $p < 0.001$) and on Psychological Empowerment ($\beta = 0.388$, $p < 0.001$). Resilience significantly influences Adaptive Performance ($\beta = 0.619$, $p < 0.001$), and Psychological Empowerment also significantly affects Adaptive Performance ($\beta = 0.200$, $p = 0.002$). However, the direct effect of Servant Leadership on Adaptive Performance is not significant ($\beta = 0.027$, $p = 0.584$). These findings suggest that in the context of hydrometeorological disaster response, servant leadership does not directly enhance adaptive performance but rather operates through psychological mechanisms.

Table 5. Mediation Results

	Original sample (O)	T statistics (|O/STDEV|)	P values	Conclusion
Servant Leadership > Resilience > Adaptive Performance	0,078	2,665	0,008	mediation accepted
Servant Leadership > Psychological Empowerment > Adaptive Performance	0,228	5,249	0,000	mediation accepted

The mediation effects were examined using the indirect effect approach via bootstrapping. As shown in Table 5, the indirect effect of Servant Leadership on Adaptive Performance through Resilience is significant ($\beta = 0.078$, $p = 0.008$), indicating partial mediation. Similarly, the indirect effect through Psychological Empowerment is also significant ($\beta = 0.228$, $p < 0.001$). Both mediation pathways are statistically supported. Given that the direct effect of Servant Leadership on Adaptive Performance was non-significant (Table 4),

these results collectively indicate that Resilience and Psychological Empowerment serve as full mediators in the relationship between Servant Leadership and Adaptive Performance under high-uncertainty disaster conditions.

Table 6. Hypothesis Testing Summary

Hipotesys		Kesimpulan
H1	Servant Leadership → Adaptive Performance (positive but insignificant).	Rejected
H2	Servant Leadership → Resilience (positive & significant)	Accepted
H3	Resilience → Adaptive Performance (positive & significant)	Accepted
H4	Servant Leadership → Psychological Empowerment (positive & significant)	Accepted
H5	Psychological Empowerment → Adaptive Performance (positive & significant)	Accepted
H6	Resilience mediates SL → AP	Accepted
H7	Psychological Empowerment mediates SL → AP	Accepted

DISCUSSION

The non-significant direct effect of servant leadership on adaptive performance (H1 rejected) contrasts with several prior studies conducted in stable environments (Hariyanto & Sutawijaya, 2024; Kaltiainen & Hakanen, 2020). In the extreme uncertainty of hydrometeorological disaster response, leadership influence appears to operate indirectly through psychological mechanisms rather than directly. Low scores on feedback and community-oriented items suggest that, under crisis pressure, leaders may have focused more on operational urgency than on individualized support, reducing the direct impact on adaptive behaviors.

Servant leadership significantly enhanced both resilience (H2 accepted) and psychological empowerment (H4 accepted), consistent with Peng et al. (2023), Siddiquei et al. (2025), and Xu et al. (2025). By prioritizing followers' needs, leaders built personal resources that enabled personnel to recover from adversity and feel competent and autonomous in field operations. These psychological resources, in turn, strongly predicted adaptive performance (H3 and H5 accepted), aligning with Cai et al. (2024) and Tang et al. (2024).

The mediation effects (H6 and H7 accepted) confirm that resilience and psychological empowerment serve as key mechanisms through which servant leadership translates into adaptive performance during crises. The direct path from servant leadership to adaptive performance remained non-significant ($p = 0.584$, $\beta = 0.027$), reinforcing that internal psychological resources fully mediate this relationship in high-pressure disaster contexts. Unlike findings from stable organizational settings, the present study demonstrates that when external conditions are volatile and resource loss is rapid, the influence of servant leadership becomes fully indirect.

These findings extend Conservation of Resources (COR) Theory (Hobfoll, 1989; Bardoel & Drago, 2021) by showing that internal psychological resources (resilience and empowerment) dominate over direct leadership influences during acute crisis response. While servant leadership remains valuable, its primary function is to build employees' personal resource reservoirs rather than to directly drive adaptive behaviors. This insight is particularly relevant for public-sector disaster management in Indonesia, where sudden shifts in work patterns and extreme demands are common.

Overall, the results underscore the importance of developing resilience and psychological empowerment as critical mediators. The study contributes empirical evidence from a real hydrometeorological crisis in West Sumatra, filling a gap in the literature where most prior research focused on stable business or pandemic contexts. Practical implications suggest that disaster response agencies should invest in servant leadership training and psychological resource-building programs to enhance adaptive performance among field personnel.

CONCLUSIONS AND RECOMMENDATIONS

This study examined the influence of servant leadership on adaptive performance among government personnel involved in hydrometeorological disaster management in Agam Regency, with resilience and psychological empowerment as mediators. The findings indicate that servant leadership does not exert a significant direct effect on adaptive performance (H1 rejected). However, servant leadership significantly and positively influences both resilience (H2 accepted) and psychological empowerment (H4 accepted). In turn, resilience (H3 accepted) and psychological empowerment (H5 accepted) significantly enhance adaptive performance, serving as partial mediators in the relationship between servant leadership and adaptive performance (H6 and H7 accepted). The direct effect of servant leadership on adaptive performance was non-significant ($\beta = 0.027$, $p = 0.584$).

These results confirm that in the high-uncertainty context of hydrometeorological disaster response, the impact of servant leadership on adaptive performance operates primarily through the development of employees' internal psychological resources rather than through a direct pathway. The study successfully achieved its seven research objectives by empirically validating the proposed mediation model using PLS-SEM analysis on data collected from 200 personnel during the actual 2025 disaster response period. Overall, the findings support the applicability of Conservation of Resources (COR) Theory in public-sector crisis settings, demonstrating that servant leadership builds critical personal resources (resilience and psychological empowerment) that enable personnel to adapt effectively under extreme conditions. This research provides new empirical evidence from a real hydrometeorological disaster context in Indonesia, where sudden shifts in work patterns and resource constraints are acute.

Suggestions and Directions for Future Research

Future research should adopt a longitudinal design with multiple measurement waves (pre-disaster, during emergency response, and post-reconstruction) to better understand the dynamic evolution of the studied relationships. Comparative studies across multiple regencies in West Sumatra (e.g., Tanah Datar or Padang Pariaman) or different disaster types would enhance generalizability. Researchers are also encouraged to incorporate additional variables such as organizational support, emotional intelligence, or transformational leadership to develop a more comprehensive model. Multi-level analysis examining both individual and organizational factors would provide deeper insights. Finally, mixed-methods approaches combining quantitative PLS-SEM with qualitative interviews could enrich the understanding of how servant leadership is perceived and practiced in real-time disaster operations.

The present study contributes theoretically by extending COR Theory to public-sector hydrometeorological disaster management and practically by offering actionable recommendations for local governments to strengthen servant leadership practices, psychological empowerment programs, and resilience-building initiatives during crisis response.

FURTHER STUDY

Several limitations should be acknowledged. First, the study employed a cross-sectional design, capturing data at a single point during the emergency response period; therefore, causal relationships cannot be fully established and dynamic changes over time may not be captured. Second, the sample was drawn exclusively from 200 personnel involved in the 2025 hydrometeorological disaster in Agam Regency, limiting generalizability to other disaster types, geographic regions, or levels of government. Third, respondents came from diverse Regional Apparatus Organizations (OPD) with varying levels of prior disaster management experience, which may have introduced heterogeneity in perceptions. Fourth, the direct effect of servant leadership on adaptive performance was found to be non-significant, suggesting that future research should explore alternative leadership styles or contextual factors that might strengthen this direct pathway under extreme conditions. Additionally, the study did not examine potential moderators such as organizational culture, emotional intelligence, or team cohesion, which could influence the strength of the mediated relationships. Finally, self-reported questionnaire data may be subject to common method bias, although Harman's single-factor test indicated it was not a serious concern. Future studies should consider multi-source data collection (e.g., supervisor ratings of adaptive performance) to further minimize bias.

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