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# Organizational Performance Assessment of Search and Rescue Teams: A Collaboration Between Technical Aspects and Service Quality

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**Abstract.** *This study aims to develop and test an integrative organizational performance assessment model that combines technical aspects, service quality, and organizational factors. Using a sequential explanatory mixed-method design, data were collected over five months through surveys of 85 SAR personnel (total sampling), 210 service recipients (stratified random sampling), and 25 key informants (purposive sampling). Quantitative data were analyzed with Structural Equation Modeling (SEM) using AMOS 24.0 and SPSS 26.0, while qualitative data were examined through thematic analysis with NVivo 12 and case study validation. The results indicate that technical competence and equipment readiness significantly enhance organizational performance, while service quality dimensions particularly reliability, responsiveness, and empathy play a crucial role in building public trust. Organizational factors moderate the relationship between technical aspects and service quality, underscoring the importance of adaptive leadership, coordination with local agencies, and a learning-oriented culture. The integrated model explains 68.4% of the variance in organizational performance, demonstrating its robustness in capturing SAR effectiveness. Qualitative findings further highlight adaptive strategies under resource constraints, collaboration rooted in local wisdom, gaps between SOPs and operational realities, and the humanistic dimension of rescue operations. This study contributes theoretically by advancing a holistic performance assessment model for SAR organizations and practically by offering evidence-based recommendations for BASARNAS and local SAR units. These include strengthening technical resources, enhancing service delivery systems, improving organizational structures, engaging communities, and aligning SOPs with field realities.*

***Keywords***: *Search and Rescue; Organizational Performance, Service Quality, Technical Competence, Gorontalo*

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## INTRODUCTION

Search and Rescue (SAR) operations constitute a crucial component of disaster management and public safety systems, playing an essential role in saving human lives during emergencies on land, at sea, and in the air (Nasar et al., 2023; Bogue, 2019; Alsamhi et al., 2022; Trombetta, 2024). Globally, SAR organizations face increasingly complex challenges due to the rising frequency of natural disasters, transportation accidents, and other emergencies requiring rapid and coordinated responses. According to the International Maritime Organization (IMO). (2022) and the International Civil Aviation Organization (ICAO) (2022), more than 100,000 SAR missions are conducted worldwide each year, involving thousands of trained personnel and substantial logistical resources.

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These statistics underscore the growing global demand for both technical proficiency and strong organizational capacity to ensure effective, timely, and high-quality rescue operations (Tan et al., 2019). As the world's largest archipelagic nation, Indonesia with over 17,000 islands, a coastline of 54,716 kilometers, and its position along the Pacific "Ring of Fire" requires SAR systems that are not only technically capable but also organizationally resilient. The National Search and Rescue Agency (BASARNAS), as the leading institution responsible for national SAR operations, faces unique challenges, including vast operational coverage, diverse geographical conditions, limited resources, and increasing public expectations for professional and humane rescue services (Okita & Shaw, 2020; Smith & Phillips, 2016; Schabram & Maitlis, 2017).

Between 2018 and 2023, BASARNAS reported a 35% rise in emergency cases, averaging 4,500 operations per year. These figures highlight the urgent need for a comprehensive and contextually grounded evaluation of SAR organizational performance to ensure that operational effectiveness aligns with public expectations and safety priorities (Nabila & Aslami, 2024; Siddiqui, 2025; Parihar & Sidharth, 2025). Evaluating SAR performance is particularly critical given its direct implications for human safety and survival. Traditional quantitative indicators, such as the number of missions completed or response times, are no longer sufficient (Nilsson et al., 2012).

Effective SAR performance must also capture qualitative dimensions service quality, teamwork, and public trust that reflect the broader complexity of rescue operations (Worm et al., 1998; Zayed, 2010). Moreover, global standards such as the IAMSAR Manual (International Civil Aviation Organization (ICAO), 2022; International Maritime Organization (IMO)., 2022)) emphasize systematic mechanisms for quality assurance, coordination, and accountability. Thus, SAR organizations must continuously improve not only their technical readiness but also the humanistic aspects of their services, including communication, empathy, and psychological support for victims and their families (Wallengren-Lynch, 2025; Chitikena et al., 2023; Suarha & Santosa, 2025). Previous literature identifies three core dimensions in assessing SAR performance.

The first is technical performance, which includes personnel competence, equipment readiness, operational procedures, and the ability to perform under diverse and challenging conditions (Perry & Lindell, 2003). The second is service quality, which reflects beneficiaries' satisfaction and perceptions of service excellence. Zeithaml (1990), in *Delivering Quality Service*, introduced the SERVQUAL framework tangibles, reliability, responsiveness, assurance, and empathy that has been widely applied to public service organizations. In SAR contexts, these dimensions extend beyond operational success to encompass communication, compassion, and reassurance during high-stress situations.

The third dimension is organizational performance, encompassing leadership, structure, coordination, culture, and learning capacity (Willem & Buelens, 2009). Several prior studies have attempted to develop SAR performance models Mahadi et al. (2023) and Srinivas et al. (2014) proposed a framework for maritime and aeronautical SAR in Malaysia, focusing on human resources, logistics, and training. However, their model primarily emphasized organizational aspects, lacking integration of service quality dimensions from the beneficiaries' perspective. Alexander (2015); Oloruntoba et al. (2018); Aliyu (2015), developed a comprehensive emergency response framework including preparedness, rescue, and recovery phases but its applicability remains limited in developing countries with resource constraints.

Similarly, Haghani & Oh (1996) applied an operations research model to optimize SAR deployment but neglected human and service quality factors essential for holistic performance evaluation (Taylor, 2017). First, most existing models adopt partial approaches, focusing on either technical or organizational aspects without integrating service quality. To address this, the present study's first objective is to develop a *holistic and integrative model* that combines technical competence and service quality dimensions to better represent SAR performance (Al-Qerem et al., 2025; Ande et al. (2024).

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Second, the majority of prior studies are based on developed-country contexts, limiting their relevance to Indonesia's archipelagic geography and resource limitations. In response, the second objective is to contextualize SAR performance models within Indonesia's operational and cultural environment (Kaluku et al., 2025). Third, while service quality is theoretically recognized as important, its measurement and integration in SAR contexts remain rare. Thus, the third objective is to empirically examine how service quality influences overall organizational performance.

Fourth, few studies explore interaction mechanisms between technical performance and service quality or the role of organizational factors that may moderate or mediate this relationship. Therefore, the fourth and fifth objectives of this study are to identify and test the moderating and mediating effects of organizational structure, coordination, and culture in shaping SAR effectiveness (Zheng et al., 2010; Bjørnstad & Ulleberg, 2021; Iranmanesh et al., 2021; Budur, 2025). To fulfill these objectives, this study employs a mixed-method sequential explanatory design, integrating qualitative exploration, quantitative validation, and case-based contextualization. The combination of these methods enables comprehensive analysis and strengthens the robustness of the proposed integrative SAR performance model (Li et al., 2006; Zhang et al., 2024; He et al., 2025).

Theoretically, this research enriches the SAR literature by explicitly linking technical performance and service quality while incorporating organizational factors as both enablers and moderators. Practically, it provides evidence-based recommendations for BASARNAS and other SAR bodies to improve performance through integrated strategies balancing technical competence, human-centered service, and adaptive organizational systems. This model also offers a framework for continuous improvement, benchmarking, and accountability in Indonesia's evolving disaster response landscape.

## METHODS

This study employed a mixed-method sequential explanatory design that combined quantitative and qualitative approaches to evaluate the organizational performance of SAR teams in Gorontalo Province. The choice of Gorontalo Province as the research site was based on its distinctive geographical and operational characteristics, which make it representative of Indonesia's Search and Rescue (SAR) challenges. Strategically located along the northern coast of Sulawesi and facing the Tomini Gulf, Gorontalo experiences high maritime activity, frequent fishing related accidents, and seasonal extreme weather conditions. Its diverse topography spanning mountainous inland regions and coastal zones requires SAR operations that integrate maritime and land-based competencies. According to data from the Gorontalo SAR Office (2022–2024), approximately 180 operations are conducted annually with an average success rate of 87.3%, while the average response time is 45 minutes in urban areas and 90 minutes in remote regions. These operational realities demonstrate both the complexity and relevance of Gorontalo as a contextual setting for assessing SAR organizational performance, as it reflects the broader challenges faced by SAR units across Indonesia's archipelagic geography. The study was carried out over a five-month period at the Gorontalo SAR Office, encompassing the entire provincial operational area. The research process consisted of three sequential phases: a three-month qualitative exploration through in-depth interviews and focus group discussions, followed by a quantitative testing phase using structured surveys, and concluded with a two-month validation phase through case studies and triangulation. The study population comprised three respondent groups: 85 SAR personnel selected through total sampling, 450 SAR service recipients with 210 respondents chosen via stratified random sampling, and 25 key informants selected purposively, including SAR leaders, field personnel, service beneficiaries, and external stakeholders such as the Regional Disaster Management Agency (BPBD), the Indonesian Navy, and the Water Police (Polairud). The selection of these distinct respondent categories was deliberate to capture a comprehensive, multi-perspective understanding of SAR performance: personnel representing technical and internal organizational aspects, service recipients reflecting external perceptions of service quality, and key informants providing institutional and policy-level insights. This

respondent structure supports methodological triangulation, thereby enhancing data validity and credibility (Creswell, 2022).

The research variables encompassed four main constructs: technical aspects, service quality, organizational factors, and organizational performance. The technical aspects covered personnel competence, equipment readiness, standard operating procedures, and training capacity (Pinto et al., 2020; Jennings, 2020). Service quality was measured through an adapted SERVQUAL model (Zeithaml, 1990), consisting of five dimensions tangibles, reliability, responsiveness, assurance, and empathy contextualized to Gorontalo's cultural environment, particularly incorporating the local value of *huyula* (mutual cooperation) to ensure cultural relevance. Organizational factors included structure, interagency coordination, organizational culture, leadership, and organizational learning, while organizational performance was assessed using the Balanced Scorecard framework encompassing four perspectives: operational, stakeholder, internal process, and learning growth. Operationalization of these variables followed the methodological standards of Hair et al. (2016) and Creswell (2022). The survey instrument contained 58 items in total: 14 measuring technical aspects, 15 measuring service quality, 13 assessing organizational factors, and 16 capturing organizational performance. Responses were rated using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Items were initially adapted from existing validated instruments and then refined through expert review, cultural adaptation, and back-translation to ensure conceptual and linguistic equivalence. A panel of three experts from Universitas Negeri Gorontalo and the National Search and Rescue Agency (BASARNAS) conducted content validation. A pilot test was also performed to confirm internal consistency and instrument clarity.

Quantitative data were collected through both online and offline questionnaires to accommodate varying regional accessibility, while qualitative data were obtained through semi-structured interviews and focus group discussions. Quantitative analysis utilized Structural Equation Modeling (SEM) with AMOS 24.0 and SPSS 26.0, encompassing confirmatory factor analysis (CFA), model fit evaluation, hypothesis testing, mediation testing using bootstrapping, and moderation analysis via multi-group comparison. The evaluation adhered to methodological thresholds recommended by Hair et al. (2016): factor loading ≥ 0.50, Average Variance Extracted (AVE) ≥ 0.50, Composite Reliability (CR) ≥ 0.70, and Cronbach's Alpha ≥ 0.70. Model fit indices followed the established benchmarks of $\chi^2/df < 3.00$, Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI) ≥ 0.90, Root Mean Square Error of Approximation (RMSEA) ≤ 0.08, and Standardized Root Mean Square Residual (SRMR) ≤ 0.08. Qualitative data analysis was performed using NVivo 12 software through systematic coding procedures open coding, axial coding, and selective coding to identify major themes. The reliability of qualitative interpretation was strengthened by inter-coder agreement testing. Case studies were analyzed using pattern matching, explanation building, and cross-case analysis techniques to validate the consistency and contextual applicability of findings. The integration of quantitative and qualitative results followed the *explanation and elaboration* strategy, where qualitative insights enriched the interpretation and theoretical explanation of statistical outcomes, consistent with Creswell (2023) mixed-method integration approach. To ensure methodological rigor, multiple validity and reliability strategies were employed, including expert judgment, a pilot study, data triangulation, member checking, peer debriefing, and an audit trail. Instrument reliability was confirmed through Cronbach's Alpha and composite reliability values exceeding 0.70, indicating satisfactory internal consistency. Overall, this methodological framework ensured that the study met the criteria of validity, transparency, and replicability required for empirical research in organizational performance assessment.

## RESULTS AND DISCUSSION

This section presents and interprets the empirical findings of the study by integrating quantitative results from the survey and structural equation modeling with qualitative insights obtained from in-depth interviews. The analysis is structured to provide a comprehensive understanding of both the descriptive profile of respondents and the explanatory relationships among the key constructs examined in this research. The discussion not only reports statistical outcomes but also situates them within the operational realities of search and rescue (SAR) services in Gorontalo, particularly in the context of complex coastal and mountainous terrains. By combining statistical evidence with contextual and theoretical interpretation, this section aims to demonstrate how technical aspects, service quality, and organizational factors interact in shaping organizational performance. The presentation begins with an overview of respondent characteristics and the descriptive profile of the research variables as a foundation for interpreting the subsequent hypothesis testing and structural model results.

### Respondent Characteristics and Research Variable Description

Table 1. Respondent Profile and Operational Characteristics

| Category | Indicator | Value |
|---|---|---|
| Respondents | Total respondents | 295 |
| | SAR personnel (response rate) | 85 (100%) |
| | SAR service recipients (response rate) | 210 (93.3%) |
| | Key informants (interviews) | 25 |
| SAR Personnel Profile | Age 25–40 years | 71.8% |
| | At least diploma-level education | 82.4% |
| | 5–10 years operational experience | 45.9% |
| Specialization | Divers | 28.2% |
| | Climbers | 23.5% |
| | Paramedics | 18.8% |
| | Navigators | 15.3% |
| | Rescue swimmers | 14.2% |
| Operational Performance (2022–2024) | Average missions per year | 180 |
| | Success rate | 87.3% |
| | Response time (urban areas) | 45 minutes |
| | Response time (remote regions) | 90 minutes |

Table 2. Descriptive Statistics of Study Variables

| Variable | Mean (M) | SD | Highest Dimension (M) | Lowest Dimension (M) |
|---|---|---|---|---|
| Technical aspects | 3.89 | 0.52 | Personnel competence (4.12) | Equipment readiness (3.52) |
| Service quality | 3.78 | 0.58 | Reliability (4.08) | Tangibles (3.42) |
| Organizational factors | 3.72 | 0.54 | Leadership (4.02) | Organizational structure (3.48) |
| Organizational performance | 3.85 | 0.49 | Operational perspective (3.92) | Learning and growth (3.68) |

This study involved 295 respondents, consisting of 85 Gorontalo SAR personnel (100% response rate), 210 SAR service recipients (93.3% response rate), and 25 key informants for in-depth interviews. The majority of SAR personnel were aged 25–40 years (71.8%), had at least a diploma-level education (82.4%), and possessed 5–10 years of operational experience (45.9%). Their specializations included divers (28.2%), climbers (23.5%), paramedics (18.8%), navigators (15.3%), and rescue swimmers (14.2%). Operational data from 2022–2024 indicated an annual

average of 180 missions, with a success rate of 87.3% and an average response time of 45 minutes in urban areas and 90 minutes in remote regions.

Descriptive analysis revealed that technical aspects obtained a mean score of 3.89 (SD=0.52), with the highest dimension being personnel competence (M=4.12) and the lowest being equipment readiness (M=3.52), suggesting good personnel competence but equipment limitations. Service quality recorded a mean score of 3.78 (SD=0.58), with reliability scoring highest (M=4.08) and tangibles lowest (M=3.42), indicating trust in SAR reliability but shortcomings in physical facilities and equipment. Organizational factors had a mean score of 3.72 (SD=0.54), with leadership rated highest (M=4.02) and organizational structure lowest (M=3.48), reflecting strong adaptive leadership but a rigid structure. Organizational performance reached a mean score of 3.85 (SD=0.49), with operational perspective highest (M=3.92) and learning and growth lowest (M=3.68), suggesting strong operational capacity but limited innovation. These findings align with who observed that emergency response organizations in developing countries often face trade-offs between operational effectiveness and resource constraints.

**Model Testing and Hypothesis Results**

Table 3. Model Testing

| Aspect | Indicator | Value / Description |
|---|---|---|
| Model fit indices | $\chi^2$/df | 2.38 |
| | CFI | 0.94 |
| | TLI | 0.93 |
| | RMSEA | 0.068 |
| | SRMR | 0.052 |
| Explanatory power | $R^2$ (Organizational performance) | 0.684 |
| | Variance explained | 68.4% |

Table 4. Hypothesis Testing

| Hypothesis | Relationship / Effect | β | CR | p-value | Effect Size / Additional Evidence |
|---|---|---|---|---|---|
| H1 | Technical aspects → Organizational performance | 0.42 | 6.85 | <0.001 | $f^2$ = 0.21 (medium-to-large) |
| H2 | Service quality → Organizational performance | 0.38 | 6.12 | <0.001 | $f^2$ = 0.18 (medium) |
| H3 | Technical aspects → Service quality | 0.56 | 8.73 | <0.001 | $f^2$ = 0.46 (large) |
| Mediation | Technical aspects → Service quality → Organizational performance | 0.21 (indirect) | – | <0.001 | 95% CI: 0.15–0.29; accounts for 33.3% of total effect |
| Moderation | Organizational factors moderating Technical aspects → Performance | – | – | <0.01 | $\Delta\chi^2$ = 8.45 |
| Moderation | Organizational factors moderating Service quality → Performance | – | – | <0.01 | $\Delta\chi^2$ = 6.92 |

The structural model demonstrated good fit indices ($\chi^2$/df=2.38, CFI=0.94, TLI=0.93, RMSEA=0.068, SRMR=0.052), meeting recommended thresholds (Hair et al., 2016). The model explained 68.4% of the variance in organizational performance ($R^2$=0.684), confirming technical aspects, service quality, and organizational factors as strong predictors. Hypothesis 1 was

supported: technical aspects had a positive, significant effect on organizational performance (β=0.42, CR=6.85, p<0.001) with a medium-to-large effect size ($f^2$=0.21). This reinforces argument that technical competence underpins emergency response effectiveness. In Gorontalo's challenging terrain Teluk Tomini and mountainous areas specialized skills such as maritime navigation, high-angle rescue, and survival techniques are critical. Qualitative insights showed that highly skilled personnel were not only more effective in operations but also more adaptive and confident in providing technical leadership. Hypothesis 2 confirmed that service quality positively and significantly influenced organizational performance (β=0.38, CR=6.12, p<0.001) with a medium effect size ($f^2$=0.18).

This aligns with service-dominant logic (Zeithaml et al., 2018) and, who found that perceived service quality significantly shapes public confidence and organizational reputation. In Gorontalo, responsiveness, empathy, and communication were highly valued, especially among fishermen and coastal communities, highlighting the importance of humanistic service alongside technical success. Additionally, the discussion could be enriched by interpreting the practical significance of the standardized coefficient. For example, a standardized coefficient of 0.42 for the technical aspect could indicate a meaningful contribution to enhancing operational performance. Discussing how this translates into improved field efficiency, faster decision-making, or higher rescue success rates would bridge the gap between statistical interpretation and applied organizational insights.

Hypothesis 3 showed that technical aspects had a strong, positive impact on service quality (β=0.56, CR=8.73, p<0.001) with a large effect size ($f^2$=0.46), supporting that technical quality is integral to perceived service quality. Demonstrated mastery of rescue techniques not only enhanced safety but also provided psychological assurance, reducing victim anxiety and strengthening trust. Mediation analysis confirmed that service quality partially mediated the relationship between technical aspects and organizational performance (indirect effect β=0.21, 95% CI: 0.15–0.29, p<0.001), accounting for 33.3% of the effect. This extends showing that investments in technical competence enhance outcomes both directly and indirectly through improved perceived service quality. Moderation analysis revealed that organizational factors strengthened the effects of both technical aspects on performance ($\Delta\chi^2$=8.45, p<0.01) and service quality on performance ($\Delta\chi^2$=6.92, p<0.01).

The effects were stronger in groups with high organizational factors (β=0.51 vs. 0.33 for technical aspects; β=0.45 vs. 0.29 for service quality). This supports contingency theory and findings on high-reliability organizations, emphasizing that flexible structures, effective coordination, and supportive culture enable the translation of individual capabilities into organizational performance. In Gorontalo, this highlights the importance of strengthening interagency coordination, embedding huyula values into organizational culture, and institutionalizing organizational learning systems. The discussion of hypotheses H1–H5 is logically organized but could integrate more comparative insights from prior studies. Highlighting whether the results align or diverge from Mahadi et al. (2023) would demonstrate stronger scholarly engagement and provide a broader academic context for interpreting the findings.

**Qualitative Findings and Practical Implications**

Thematic analysis generated eight core themes. The theme "Adaptation to Resource Constraints" revealed adaptive strategies such as equipment improvisation, optimized deployment, and leveraging community resources, consistent with on innovation in resource-limited disaster response. The theme "Coordination with Local Wisdom" highlighted the importance of collaborating with local communities, particularly fishermen with geographical knowledge, and leveraging huyula values to strengthen social capital. This supports, who stressed the role of network governance and local knowledge in disaster response. The theme "Gap between SOP and Operational Realities" emphasized the need for balancing standardization with flexibility, aligning with on adaptive capacity. Finally, the theme "Humanistic Dimensions in Life-

Saving Operations" underscored that empathy, communication, and emotional support are as critical as technical success, supporting on integrating humanistic and technical dimensions in emergency services. The qualitative findings are insightful and provide rich contextual depth. However, the narratives under 'Coordination with Local Wisdom' and 'Humanistic Dimensions' could be streamlined to avoid overly descriptive passages. Emphasizing interpretive insights directly related to organizational performance outcomes would strengthen the analytical focus and maintain coherence.

The findings offer several practical implications for improving SAR Gorontalo performance. First, given the low scores on equipment readiness, priority investments should target modern rescue vessels for Teluk Tomini, long-range communication tools, and medical equipment. Second, to enhance service quality particularly tangibles and responsiveness SAR facilities, equipment condition, and deployment strategies should be upgraded, including establishing forward operating bases in remote areas. Third, organizational factors should be strengthened simultaneously through restructuring toward flexible, decentralized models; improving coordination with local agencies via joint exercises; institutionalizing organizational learning through after-action reviews; and fostering transformational leadership development. Fourth, community participation should be expanded via community-based disaster risk management programs involving fishermen and coastal residents in early warning systems and volunteer training. Finally, SOPs should be regularly reviewed and adapted through scenario-based guidelines that preserve safety while allowing operational flexibility. These evidence-based recommendations provide a roadmap for continuous improvement in SAR Gorontalo's life saving missions and community service.

Table 1. Practical Implications of Research

| Focus Area | Strategy/Action | Objective |
|---|---|---|
| Technical Equipment | Investment in modern rescue boats, communication devices, and medical equipment adapted to Gorontalo's operational characteristics | Strengthen technical readiness and operational effectiveness |
| Service Quality | Upgrading SAR office facilities, improving equipment conditions, and optimizing deployment strategies for remote areas | Enhance tangibles dimension and reduce response time |
| Organizational Factors | Restructuring towards a more flexible and decentralized structure, conducting regular joint exercises with local agencies, institutionalizing after-action reviews and lessons-learned databases, and leadership development programs | Improve coordination, build a learning culture, and strengthen adaptive leadership |
| Community Participation | Developing community-based disaster risk management programs, volunteer training, and local early warning systems | Leverage local knowledge, foster community engagement, and enhance collaborative response |
| SOP vs. Operational Reality | Regular review and revision of SOPs, complemented with scenario-based guidelines | Balance standardization with operational flexibility without compromising safety standards |

Source: Research Results 2025

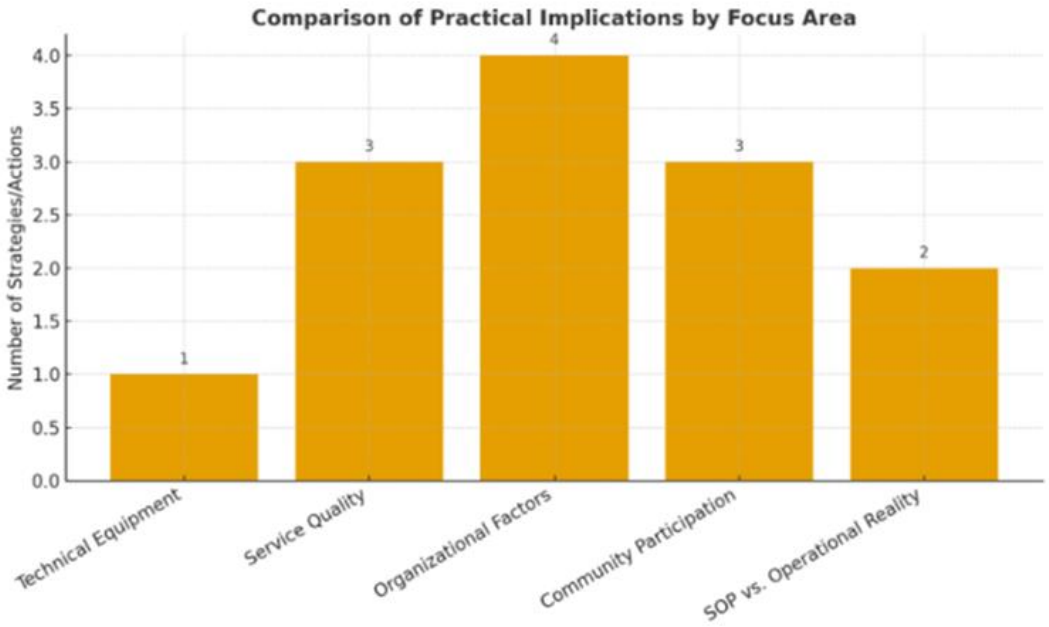


Figure 1. Practical Implications of Research
*Source: Research Results 2025*

The analysis of the relationship between the table and the graph highlights a consistent strategic focus in enhancing the performance of Gorontalo SAR. The table presents detailed practical strategies across five key areas, while the graph emphasizes the quantitative distribution of these strategies. Organizational factors account for the largest portion with four strategies, underscoring the central role of structure, coordination, and leadership in optimizing performance (Caniago, 2024; Overstreet et al., 2014; Barrick et al., 2015; Pacheco-Cubillos et al., 2024). This finding aligns with the model testing results, which identified organizational factors as a crucial moderator between technical aspects, service quality, and organizational performance. The second priority areas are service quality and community participation, each with three strategies, reflecting the importance of building public trust and leveraging local wisdom as complementary strengths. In contrast, technical equipment readiness and SOP adjustments are fewer in number but remain fundamental elements supporting operational success. Thus, both the table and the graph reinforce that improving SAR performance relies not only on technical capacity but also on synergistic support from organizational systems, service quality, and community engagement.

## CONCLUSION

This study confirms that the organizational performance of the Gorontalo Search and Rescue (SAR) team is significantly influenced by technical aspects, service quality, and organizational factors. The technical competence of personnel and the readiness of equipment play a crucial role in operational effectiveness, while service quality particularly reliability, responsiveness, and empathy emerges as a key determinant in fostering public trust. Organizational factors were also found to moderate the relationship between technical aspects and service quality with performance, underscoring the importance of coordination, adaptive structures, and a supportive organizational culture. Qualitative findings reinforce these results by revealing the significance of adaptive strategies to resource constraints, collaboration rooted in local wisdom, gaps between standard operating procedures (SOPs) and operational realities, and the humanistic dimension of life-saving operations. Overall, the integrative model developed in this study explains 68.4% of the variance in organizational performance, indicating that improving SAR performance depends not only on technical capacity but also on service quality and organizational support.

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To enhance the clarity and structural coherence of this section, the conclusion could explicitly distinguish between empirical conclusions and strategic recommendations. This distinction can be made by presenting empirically derived results such as the tested relationships among technical aspects, service quality, and organizational factors under a subheading *Empirical Conclusions*, while policy-oriented and managerial strategies can be presented under *Policy Implications*. Such separation would improve readability and conceptual precision, allowing readers to clearly differentiate between findings based on empirical evidence and practical inferences drawn from the research results. Furthermore, the connection between the integrative model and the proposed strategies should be articulated more explicitly. Readers should be able to see how each recommendation directly derives from the tested relationships within the model. For instance, the enhancement of technical capacity ($\beta = 0.42$) can be linked to the first recommendation concerning equipment modernization, while the moderating effect of organizational factors supports decentralization and inter-agency coordination strategies. Establishing this linkage emphasizes that the proposed policy implications are evidence-based extensions of the analytical framework, thereby reinforcing both the study's academic rigor and its applied relevance.

## SUGGESTION

Based on these findings, several strategic recommendations are proposed for the Gorontalo SAR team. First, strengthening technical aspects should be prioritized through the procurement of modern rescue equipment, such as durable rescue boats, long-range communication devices, and emergency medical facilities tailored to local geographic conditions. Second, service quality should be improved by upgrading physical facilities, maintaining equipment conditions, and optimizing deployment strategies to minimize response times, particularly in remote areas. Third, organizational development should focus on restructuring toward a more flexible and decentralized system, strengthening coordination with local agencies through regular joint exercises, and cultivating an organizational learning culture supported by systematic after-action reviews and lessons-learned databases. Fourth, community participation should be encouraged through community-based disaster risk management programs that engage coastal communities and fishermen in early warning systems, volunteer training, and collaborative response mechanisms. Finally, SOPs should be periodically reviewed and refined through scenario-based guidelines to balance standardization and operational flexibility without compromising safety standards. Implementing these recommendations is expected to enhance both technical effectiveness and service quality in a sustainable manner, ensuring that the Gorontalo SAR team becomes increasingly responsive to community needs and the challenges posed by its complex geographical environment. In summary, the findings of this study contribute not only to the empirical understanding of factors influencing organizational performance in rescue operations but also provide actionable policy implications that can inform future strategies for institutional strengthening within the national SAR framework.

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