

Performance of Volunteer Firefighters at the Nunukan Regency Fire Management and Rescue Service

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Abstract

This research aims to analyze the performance and factors hindering the performance of volunteer firefighters at the Fire and Rescue Service of Nunukan Regency, as well as to identify solutions to overcome these obstacles. This research uses a qualitative method with a descriptive approach. Data were collected through in-depth interviews with five key informants, namely the Volunteer Coordinator, Firefighting Volunteers, community members involved in empowerment programs, and fire victims. The results of the study show that firefighting volunteers demonstrate a high level of dedication in responding to fires, especially in remote areas. They play a crucial role in reducing the impact of fires by providing quick responses and extinguishing the fire before the official firefighting team arrives. However, the main challenges they face are the limited equipment and lack of advanced training to handle large and complex fires. Coordination with the Fire Department and other related agencies is generally good, although there are some communication barriers that need improvement. Overall, while the volunteers show good performance, improving training, equipment, and coordination will further enhance their effectiveness in firefighting efforts

1. Introduction

The Fire and Rescue Department of Nunukan Regency is a government agency responsible for providing services in fire prevention, rescue operations, and handling other disaster emergencies. This department plays a vital role in ensuring public safety and security from fire hazards, which often cause significant losses, both in terms of property and human lives. However, as highlighted by Sugiarto (2020), fire departments in various regions, including Nunukan Regency, frequently face several challenges that hinder their performance. These challenges include a shortage of trained human resources, inadequate firefighting equipment, and limited coordination between volunteers and the relevant agencies.

Additional challenges also arise in the distribution of personnel to remote areas, which affects the response time to fire incidents. Therefore, the performance of Fire Brigade Volunteers needs to be prioritized to enhance the effectiveness of fire prevention and control efforts in Nunukan Regency. This is emphasized in the 2023 Performance Realization Report, which compares the achievement of Key

Performance Indicators (IKU) with National Standards, as detailed below:

Table 1.1. Comparison of 2023 Performance Realization with National Standards (SPM) of the Fire and Rescue Department of Nunukan Regency

No	Indikator Kinerja		Permendagri Nomor 114 Standar Pelayanan Minimal (SPM)			Perjanjian Kinerja Tahun 2023		
			Target	Realisasi	%	Target	Realisasi	%
1	Persentase Layanan Respon Cepat (Response Time) Penanggulangan Kejadian Kebakaran	%	100	101,7	101,7	87,15	88,63	101,7
2	Persentase layanan Pelaksanaan Pemadaman dan Pengendalian Kebakaran	%	100	99,50	99,50	18,00	17,91	99,50
3	Persentase Layanan Pemadaman dan Penyelamatan Kebakaran dan Non Kebakaran yang dilaksanakan.	%	100	153,24	153,24	100	153,24	153,24
4	Persentase Layanan Pendataan, Inspeksi dan Investigasi Pasca Kebakaran	%	100	100	100	100	100	100

Source: Administration, Fire and Rescue Department (Disdamkarmat) of Nunukan Regency, 2023

Based on the table above, the Fire and Rescue Department (Disdamkarmat) of Nunukan Regency has met the Minimum Service Standards (SPM) set by the Central

Government, specifically the Ministry of Home Affairs. This achievement is also supported by the results outlined in the 2023 Performance Agreement of the Fire and Rescue Department of Nunukan Regency, which evaluated Fire Victim Rescue and Evacuation Services with a High Performance Rating (76% < 90%). Additionally, data shows a significant increase in fire incidents in Nunukan Regency over the past few years, as detailed in the table below:

Table 1.2. Fire Incidents in Nunukan Regency (2021–2024)

No	Tahun	Jumlah Kejadian
1	2021	32
2	2022	36
3	2023	44
4	2024 per agustus	40

Source: Administration, Fire and Rescue Department (Disdamkarmat) of Nunukan Regency, 2023

The data on the number of fire incidents from 2021 to 2024 indicates a significant upward trend, with 32 incidents recorded in 2021, increasing to 36 incidents in 2022, and reaching 44 incidents in 2023. Furthermore, as of August 2024, 40 fire incidents have already been reported, suggesting a potential for further increase by the end of the year.

Several devastating fire incidents have occurred recently, including fires at workers' housing/barracks in company premises and residential areas in subdistricts inaccessible to fire trucks, such as the incident in early July. Additionally, a fire on Onsoi Street destroyed a 10x20 meter barrack and a 7x9 meter prayer room (mushola).

The rising number of fire incidents underscores the importance of the performance of Fire Brigade Volunteers in Nunukan Regency. As fire incidents increase, the role of volunteers becomes crucial in supporting the Fire and Rescue Department in responding to emergencies swiftly and effectively.

This importance is also emphasized in Minister of Home Affairs Regulation Number 114 of 2018 on Minimum Service Standards for Fire Management, which explicitly recognizes the role of fire volunteers as an integral part of local fire prevention and response efforts. Volunteers are regarded as strategic partners of

local governments in enhancing preparedness, responding to fire incidents, and mitigating associated risks.

Furthermore, several regions in Indonesia have enacted local regulations (Peraturan Daerah/Perda) specifically governing fire volunteer organizations. These regulations typically provide formal recognition to volunteers, regulate their coordination with local governments, and establish provisions for training, operations, and support necessary for them to effectively assist communities in handling fire incidents.

Therefore, improvements are required not only in volunteer training and preparedness but also in providing adequate equipment and enhancing coordination between volunteers and relevant agencies. Without these measures, the capacity to manage and control fire incidents may fall short of the increasing frequency of occurrences reported each year.

The performance of Fire Brigade Volunteers is critical due to their vital role in supporting the Fire and Rescue Department in handling fire emergencies. Volunteers serve as a crucial support force that can accelerate response times, particularly in hard-to-reach areas or regions with limited resources. If volunteer performance is suboptimal, the consequences can be severe, including delayed fire handling, increased casualties, and greater material losses.

As highlighted by Nugroho (2019), delays in fire response often exacerbate the situation, leading to more extensive damage and losses. Additionally, research by Haryono (2020) indicates that inadequate volunteer training can result in errors during fire suppression efforts, which not only prolongs the firefighting process but also endangers the safety of both the community and the volunteers themselves.

From a theoretical perspective, volunteer performance aligns with Operational Management Theory proposed by Robbins and Coulter (2016), which emphasizes the importance of human resource development and efficient processes in managing emergency situations. Without improvements in training,

preparedness, and coordination, volunteers will be unable to operate efficiently, ultimately affecting the overall quality of fire service delivery.

Furthermore, weaknesses in volunteer empowerment can erode public trust in the fire department's ability to handle fire incidents effectively. This concern is supported by the research of Prasetyo (2018), which examined public perceptions of fire services in urban areas and found that poor volunteer management contributes to a negative public view of fire services.

Therefore, enhancing the performance of Fire Brigade Volunteers is not only crucial for improving the efficiency and effectiveness of fire suppression efforts but also essential to ensuring that available human resources and equipment are maximized for the safety and well-being of the community.

2. Research Methods

This study employs a qualitative descriptive approach to obtain a clear depiction of the analyzed data, including factual observations and real actions from the field. The data collection process involves interviews, observations, and documentation obtained directly from the informants, serving as primary data for further analysis and research findings. According to Moleong (2017), qualitative research aims to understand phenomena related to the research object, including behaviors, perceptions, motivations, and actions documented as primary data for analysis. Through interactions with informants, the researcher collects, interprets, and analyzes data from various sources such as interviews, field observations, and relevant documentation.

The descriptive qualitative approach helps capture authentic data reflecting the performance of fire brigade volunteers in Nunukan Regency.

The researcher plays a central role in this descriptive qualitative study by designing the research plan, collecting and analyzing data, and drawing conclusions from the findings. As an active participant in the field, the researcher gathers data through interviews, observations, and documentation. According to Sugiyono (2017), the researcher determines the research focus, identifies key informants, collects data, and evaluates its quality through careful analysis. Additionally, the researcher acts as a facilitator, guiding the research process, asking critical questions, and applying insights from the data to explore the competencies of the volunteers. The research location is set at the Fire and Rescue Department of Nunukan Regency, located at Jalan Pembangunan No. RT 10, Nunukan Barat, Nunukan Regency, North Kalimantan, with the study conducted from December 2024 to February 2025.

3. Results and Discussion

3.1 Research Results

The performance of Fire Brigade Volunteers at the Fire and Rescue Department of Nunukan Regency plays a crucial role in supporting fire prevention and control efforts, especially in remote areas that are difficult for official firefighting teams to reach. These volunteers serve as the frontline responders in emergency situations, demonstrating high dedication despite frequently facing challenges such as limited equipment, inadequate training, and insufficient logistical support.

Table 1. Interview Results on Fire Brigade Volunteers' Performance in Nunukan Regency

No	Informant	Opinion	Challenges
1	Volunteer Coordinator	The fire brigade volunteers demonstrate outstanding performance, particularly in responding to fires in hard-to-reach areas. Despite their swift actions, they face challenges related to inadequate equipment and the need for advanced training to handle large-scale fires.	Limited equipment and lack of advanced training.
2	Fire Victim (1)	Volunteers are very helpful, arriving promptly and working effectively to control the fire. However, there is a noticeable shortage of essential equipment, particularly vehicles and large-scale firefighting tools.	Shortage of vehicles and large firefighting equipment.
3	Fire Brigade Volunteer	Volunteers are proud to assist the community but recognize the need for additional training and more comprehensive equipment to improve their effectiveness in the field.	Insufficient advanced training and lack of adequate equipment.
4	Community Member (Training Program)	Volunteers play a crucial role in remote areas, responding quickly to fire incidents. However, they require more advanced equipment and specialized training to manage large-scale fires effectively.	Limited supporting equipment and lack of additional training.
5	Fire Victim (2)	Volunteers show high dedication and are responsive during fire emergencies. Despite their commitment, they face limitations in resources and advanced training, which affects their ability to handle large-scale fires.	Limited resources and insufficient advanced training.

The Coordinator of Fire Brigade Volunteers in Nunukan Regency highlighted that volunteer demonstrate exceptional performance, particularly in responding to fires in remote areas. Despite their swift and dedicated actions, they face significant challenges, including inadequate firefighting equipment and limited advanced training. The coordinator emphasized the need for continued capacity building to ensure volunteers are well-prepared to handle larger fire incidents.

Several fire victims expressed their appreciation for the volunteers' prompt responses during emergencies. They acknowledged the volunteers' dedication and quick action in preventing further damage. However, they also observed that the volunteers were constrained by limited resources, such as firefighting vehicles and large-scale equipment, which impacted their effectiveness in managing significant fires.

The volunteers themselves expressed pride in their role and their commitment to

helping the community. They, however, emphasized their need for more comprehensive training and modern equipment to improve their performance during complex fire situations. Volunteers recognized that additional skills and experience would enhance their ability to respond more effectively to large-scale and high-risk fires.

Members of the community involved in firefighting training programs praised the volunteers' contributions, particularly in remote areas where access to firefighting services is limited. They noted that while the volunteers were highly dedicated and timely in their responses, they needed more advanced equipment and training to handle larger fires effectively.

Overall, all informants agreed that the volunteers play a vital role in fire prevention and control efforts. Despite their dedication and fast responses, their effectiveness is limited by a lack of advanced training, logistical support, and modern firefighting equipment. Strengthening

volunteer capacity through ongoing training, providing adequate equipment, and improving inter-agency coordination were suggested as key steps to enhancing their performance in handling future fire incidents in Nunukan Regency.

3.2 Research Discussion

The performance of fire brigade volunteers in Nunukan Regency plays a crucial role in firefighting efforts, particularly by providing rapid responses in hard-to-reach areas. Volunteers serve as the frontline responders, often making the first efforts to reduce the impact of fires before the official firefighting team arrives. Despite their high spirit and dedication, volunteers face several challenges, particularly in terms of limited equipment and the need for advanced training to handle large-scale fires and more complex situations.

The volunteers are sufficiently trained to handle small-scale fires; however, they often struggle with larger or high-risk fires due to a lack of advanced training and adequate equipment. This limitation presents a significant challenge in ensuring an effective and efficient response during emergencies. Although volunteers have received basic training, they still require more experience and specialized training to manage high-intensity fire situations.

In addition to their role in firefighting, volunteers play a vital part in fire prevention efforts. They are proactive not only in providing assistance during fires but also in educating the community about preventive measures. Through various training programs and awareness campaigns, volunteers help the public understand the importance of maintaining environmental cleanliness and vigilance against potential fire hazards. Community awareness regarding fire prevention has improved significantly, thanks to the volunteers' active role in providing continuous information and training.

Coordination between volunteers, the Fire and Rescue Department, and other related agencies is also critical in ensuring the smooth execution of firefighting efforts. Although coordination has generally been effective, communication issues sometimes arise, particularly during large-scale fires or incidents in remote areas involving multiple agencies. Improvements in communication channels and logistical support are essential to enhance the operational efficiency and effectiveness of volunteers in the field.

Based on interviews with various informants, it is evident that volunteers demonstrate a strong dedication to providing rapid responses during fire incidents and actively engage in fire prevention through public education and training. Despite their commendable performance, their effectiveness remains limited by the lack of advanced training and sufficient equipment, which are significant obstacles in managing large-scale and complex fires. Coordination with the Fire and Rescue Department and other agencies is relatively well-established, although communication challenges persist and need to be addressed for better operational outcomes.

The findings align with Handoko's Performance Theory (2019), which emphasizes that performance comprises three key aspects: core tasks, adaptive behavior, and contextual contributions, all of which must work together for optimal organizational outcomes. In the context of fire brigade volunteers in Nunukan Regency, these aspects are crucial for evaluating their effectiveness in firefighting and prevention efforts.

1. Core Tasks: The primary responsibility of fire brigade volunteers is to respond to and extinguish fires. The volunteers have demonstrated excellent performance in responding swiftly and effectively, particularly in remote areas, helping to reduce the impact of fires before official teams arrive. However, their ability to manage large and complex fires is hampered by limited equipment. Enhancing their

facilities and providing advanced training are essential to ensure they can perform their core tasks optimally.

2. **Adaptive Behavior:** Volunteers exhibit strong adaptability in responding to various emergency situations. They effectively adjust to conditions both in firefighting and preventive education efforts. Their active involvement in educating the public about fire prevention reflects their adaptability to different roles beyond firefighting. Despite this, the need for further training to handle large-scale fires highlights room for improvement in their adaptive capabilities, especially in more complex situations.
3. **Contextual Contributions:** The volunteers significantly contribute to fire prevention efforts by conducting community outreach programs and training sessions. Their role extends beyond extinguishing fires to raising public awareness about fire hazards and preventive measures. Through educational initiatives, they help foster a sense of community responsibility towards fire prevention, which is a vital contextual contribution supporting the long-term goals of the Nunukan Regency Fire and Rescue Department.

The findings are consistent with previous research by Sari and Nugroho (2018): Their study highlighted that the effectiveness of fire brigade volunteers is heavily influenced by the training they receive. Sari and Nugroho stressed the importance of advanced training to prepare volunteers for large-scale fires. This is reflected in the current findings, where volunteers in Nunukan Regency excel in managing small fires but require further training for larger, more complex incidents.

Prasetyo and Hariyanto (2020): Their research identified limited equipment as a major challenge for fire brigade volunteers in remote areas. Similarly, in Nunukan Regency, volunteers reported that while their response times were swift, their effectiveness was constrained by a lack of essential equipment, such as firefighting vehicles and large-scale

extinguishers. This underscores the importance of enhancing facilities and providing adequate equipment to support volunteer performance.

Wahyuni and Iskandar (2021): Their study emphasized the critical role of effective coordination between volunteers, fire departments, and related agencies in improving response times and firefighting effectiveness. This finding aligns with the interviews in Nunukan Regency, which revealed that while coordination with the fire department was generally satisfactory, communication gaps during emergency responses, particularly in remote areas, remain a challenge. Improved communication channels and faster coordination processes are necessary to enhance operational effectiveness in the field.

The performance of fire brigade volunteers in Nunukan Regency is commendable, particularly in providing swift responses and actively contributing to public education on fire prevention. However, significant challenges persist, including limited equipment, insufficient advanced training, and occasional coordination issues with related agencies. Addressing these challenges through capacity-building programs, better equipment provision, and improved coordination mechanisms is essential to maximize the effectiveness of volunteer firefighters in handling both current and future fire incidents.

4. Closing

4.1 Conclusion

This study concludes that volunteer firefighters at the Fire Management and Rescue Service of Nunukan Regency demonstrate strong dedication and responsiveness, particularly in handling fire incidents in remote areas. Their contribution is significant in minimizing losses and ensuring rapid initial intervention prior to the arrival of official firefighting units. However, their overall performance remains constrained by three major challenges: limited firefighting

equipment, insufficient advanced training, and communication barriers in multi-agency coordination. These constraints affect their capacity to manage large-scale or complex fire incidents. Strengthening volunteer capacity through professional training, modernizing logistical support, and enhancing coordination frameworks is crucial to improving the effectiveness and preparedness of volunteer firefighters in the region.

4.2. Implications

This study provides several theoretical and practical implications. First, the findings reinforce Performance Theory and Operational Management Theory, highlighting the importance of capability development and process efficiency in emergency response organizations. Second, at the practical level, the results emphasize the strategic role of volunteer firefighters as frontline responders, especially in geographically dispersed areas. Improving their competencies and logistical support will directly enhance local government performance in meeting the Minimum Service Standards (SPM) for fire management. Moreover, strengthening coordination mechanisms among volunteers, the fire department, and related agencies will contribute to a more integrated disaster response system, ultimately increasing community safety and resilience.

4.3. Limitations

This study is limited by its qualitative design, which relies heavily on perceptions and experiences of five key informants. As such, the findings may not fully represent the broader population of volunteer firefighters or capture performance variations across different districts. In addition, field observations were conducted within a limited timeframe, which may not reflect seasonal differences in fire incidents or operational dynamics. Future studies should incorporate mixed methods or

quantitative measurements to achieve broader generalizability.

4.4. Recommendations for Future Research

Future research is encouraged to:

1. Develop quantitative performance indicators for volunteer firefighters to complement qualitative insights.
2. Examine comparative studies between volunteer and official firefighting units to identify more specific competency gaps.
3. Explore technological integration, such as early warning systems, digital reporting, and remote coordination tools, to improve volunteer response capacity.
4. Conduct longitudinal studies to evaluate the impact of training and equipment improvements over time on volunteer performance.

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