

The Mediating Role of Safety Policy Implementation Between Community Fire Preparedness and Resilience

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ABSTRACT

This study aimed to examine the relationship between community fire preparedness, safety policy implementation, and community resilience in selected barangays. A correlational design was used to determine whether a statistical association existed between community fire preparedness, safety policy implementation, and community resilience. A total of 450 respondents were selected proportionally from fire-affected households across the identified barangays.

The result interprets high safety policy implementation as the mediator, community fire preparedness as the independent variable, and community resilience as the dependent variable. However, some factors suggest that each variable is weak.

The relationship between community fire preparedness and safety policy implementation, between safety policy implementation and community resilience, and between community fire preparedness and community resilience are highly significant. In contrast, the knowledge and drills for both the relationship between community fire preparedness and safety policy implementation and the relationship between community fire preparedness and community resilience demonstrated the weakest relationship; inspection and permitting between safety policy implementation and community resilience showed the weakest relationship.

Keywords: community engagement, community resilience, fire preparedness, safety implementation, support programs

INTRODUCTION

Rationale of the Study

Communities rely on prevention, readiness, and governance to limit the effects of disasters, and fires remain among the most persistent urban hazards in the Philippines (UNDRR, 2019). Despite safety regulations and the nationwide mandate to enforce fire safety standards under the Revised Fire Code of the Philippines, the country continues to record high numbers of fire incidents annually (Republic Act No. 9514, 2008). National Bureau of Fire Protection (BFP) records show 16,426 fire incidents in 2023, while the first quarter of 2024 already documented 8,189 incidents, representing a 36% increase compared to the same period in 2023 (BFP, 2024; GMA Integrated News, 2024). By the end of 2024, fire events climbed to 18,256 recorded cases, resulting in 120 deaths, 352 injuries, and economic losses exceeding ₱2.74 billion (BFP, 2025; Philippine News Agency, 2024). These figures highlight that fire remains a recurring and escalating threat, particularly in dense urban spaces, communities with vulnerable housing conditions, and areas with limited access to suppression resources (UNDRR, 2019; UNDRR, 2025).

However, despite this reality, community-based fire preparedness measures—such as fire drill participation, safe handling of electrical and liquefied petroleum gas, coordination with local fire auxiliaries, and the availability of suppression tools—continue to vary significantly across barangays. Such inconsistencies have implications not only for the likelihood of fires but also for how effectively communities withstand and recover in emergencies. Previous studies have demonstrated that preparedness is strongly influenced by perceptions of risk,

access to hazard-related knowledge, and the availability of local capacity to implement prevention measures (Santos & Lopez, 2023). However, while preparedness is generally acknowledged as essential, its contribution to Resilience—particularly at the community level—remains underexamined in many Philippine settings.

In parallel with preparedness, the implementation of fire safety policies also demonstrates notable inconsistencies across local government structures. Regulations such as inspection protocols, permitting requirements, safety communication efforts, and enforcement mechanisms exist nationwide, yet their implementation often varies across jurisdictions due to administrative capacity, resource availability, and leadership commitment (Cruz, 2024; Garcia, 2023). As a result, some communities benefit from stronger preventive systems and stricter compliance measures, while others remain more vulnerable to fire risks due to weak enforcement and limited institutional support.

Research has shown that communities with stronger, more consistent policy implementation tend to develop a better compliance culture, stronger preventive practices, and greater community involvement in safety initiatives (Setiawan, 2022). While fire safety regulatory frameworks exist, the gap between their design and actual implementation remains evident, resulting in uneven layers of protection across barangays. Importantly, safety policy implementation may do more than enforce compliance; it may act as a structural mechanism that reinforces preparedness behaviors, institutionalizes safety practices, and strengthens long-term community resilience.

Although community fire preparedness and safety policy implementation are widely recognized as important components of disaster risk reduction, there is still insufficient empirical evidence on how these variables interact to shape community resilience in barangay contexts. Existing studies often describe preparedness levels or policy enforcement practices independently, but rarely test whether safety policy implementation mediates the relationship between preparedness and Resilience. This lack of empirical evidence creates a significant knowledge gap for local decision-makers and practitioners who need a clearer basis for designing effective fire safety interventions. Filling this gap may provide a more evidence-based understanding of how preparedness can be translated into stronger community resilience through institutional and policy support.

Given these considerations, this study seeks to examine the mediating role of safety policy implementation in the relationship between community fire preparedness and community resilience. By empirically analyzing these variables within barangay settings, the research aims to provide evidence supporting proactive and equitable community fire governance and strengthening resilience-building initiatives at both the local and municipal levels.

THEORETICAL FRAMEWORK

This study is anchored in three theories highly relevant to explaining the relationships among community fire preparedness, safety policy implementation, and community resilience: Protection Motivation Theory, the Implementation Science Framework, and Community Resilience Theory. These theories were selected because they collectively explain how individuals and communities adopt protective behaviors, how policies are effectively translated into practice, and how communities develop the capacity to withstand, adapt to, and recover from fire-related hazards. Together, these theoretical perspectives provide a strong foundation for examining the mediating role of safety policy implementation in the relationship between preparedness and Resilience (Rogers, 1975; Proctor et al., 2009; Norris et al., 2008).

Protection Motivation Theory (PMT), developed by Rogers (1975), explains how people are motivated to engage in protective behaviors when faced with perceived threats. The theory emphasizes two key processes: threat appraisal, which involves evaluating the seriousness of a hazard and personal vulnerability, and coping appraisal, which refers to beliefs about the effectiveness of preventive actions and one's ability to perform them. In the context of fire safety, residents who perceive fire as a serious risk and believe that preparedness actions, such as installing extinguishers, participating in drills, and practicing hazard reduction, are effective are more likely to adopt these behaviors. This theory is relevant to the present study because community fire preparedness depends largely on how residents perceive risk and respond through protective action. Previous studies found that higher

risk perception and stronger coping beliefs significantly predict household preparedness and fire prevention behavior in urban communities (Santos & Lopez, 2023; Rogers, 1975).

PMT further supports the assumption that preparedness behaviors alone may not be sufficient unless reinforced by environmental support and policy systems. For instance, residents may be willing to comply with safety practices, but limited access to equipment, weak enforcement, or poor safety education may reduce their motivation and capacity to act. Thus, the theory helps explain why safety policy implementation may strengthen the effect of preparedness on Resilience by reinforcing protective behavior through institutional support. This makes PMT relevant in explaining the link between preparedness practices and resilience outcomes in fire-prone barangays (Rogers, 1975; Garcia, 2023).

The Implementation Science Framework by Proctor et al. (2009) focuses on how policies, programs, and evidence-based practices are effectively adopted and sustained in real-world settings. The framework emphasizes implementation outcomes, including fidelity, acceptability, feasibility, penetration, and sustainability. In fire safety governance, the mere existence of laws and regulations does not guarantee effective outcomes unless they are consistently enforced and operationalized. Fire safety inspections, permitting systems, risk communication campaigns, and infrastructure support must be properly implemented to influence actual community behavior and safety outcomes. This theory is relevant to the study because safety policy implementation is treated as a mediating variable that may determine whether preparedness efforts lead to stronger resilience outcomes (Proctor et al., 2009).

The framework also explains why communities with similar preparedness levels may differ in Resilience depending on the quality of local implementation systems. Barangays with regular inspections, active education campaigns, and available fire protection resources are more likely to translate preparedness into effective risk reduction and recovery capacity. Prior studies have shown that stronger implementation systems significantly improve compliance behavior, preventive practices, and community disaster outcomes. Therefore, this theory provides a strong basis for examining how policy implementation functions as the mechanism linking preparedness to Resilience (Setiawan, 2022; Cruz, 2024; Proctor et al., 2009).

Community Resilience Theory, proposed by Norris et al. (2008), defines Resilience as a dynamic process through which communities utilize available resources, social networks, communication systems, and governance structures to withstand and recover from hazards. The theory identifies Resilience as more than the absence of damage; rather, it reflects the ability of communities to adapt, respond effectively, and restore normal functions after disruptive events. In the context of fire hazards, Resilience includes emergency response capability, continuity systems, adaptive planning, and active community participation. This theory is highly relevant because the study's dependent variable, community resilience, reflects the outcome of preparedness and policy support (Norris et al., 2008).

The theory further emphasizes that Resilience is built through the interaction of household readiness and institutional capacity. Prepared communities may still experience weak recovery outcomes if governance systems are ineffective, whereas communities with strong leadership and coordinated systems may recover faster, even when vulnerabilities persist. Studies have shown that local governance, social participation, and communication systems are significant predictors of disaster resilience. Hence, Community Resilience Theory supports the study's assumption that preparedness contributes to Resilience more effectively when supported by strong policy implementation systems (Meerow et al., 2019; UNDRR, 2022; Norris et al., 2008).

The three theories, taken together, provide a comprehensive explanation of how community fire preparedness influences community resilience through the mediating role of safety policy implementation. Protection Motivation Theory explains the behavioral foundation of preparedness by emphasizing that individuals are more likely to adopt protective actions when they perceive fire risks as serious and believe that preventive measures are effective and achievable. This perspective supports the idea that household readiness, hazard reduction practices, and participation in drills are shaped by risk perception and coping beliefs (Rogers, 1975; Santos & Lopez, 2023).

Implementation Science Framework complements this view by explaining that preparedness behaviors become more effective when supported by strong institutional systems. Fire safety policies, inspections, enforcement mechanisms, education campaigns, and infrastructure support serve as enabling structures that transform individual and community preparedness into practical and sustained safety outcomes. This suggests that preparedness alone may have a limited impact unless reinforced through effective policy implementation at the barangay level (Proctor et al., 2009; Cruz, 2024; Setiawan, 2022).

Community Resilience Theory integrates these perspectives by emphasizing that Resilience emerges from the combined capacity of communities to prepare, respond, adapt, and recover from hazards through coordinated resources, governance, and social systems. In this study, community fire preparedness refers to residents' behavioral and preventive capacity, while safety policy implementation reflects the institutional mechanisms that strengthen and sustain these efforts. Consequently, community resilience becomes the expected outcome of the interaction between preparedness and effective governance. Taken together, the three theories justify the proposed model in which safety policy implementation mediates the relationship between community fire preparedness and community resilience (Norris et al., 2008; UNDRR, 2022; Meerow et al., 2019).

Conceptual Framework

The conceptual framework of this study illustrates the relationship between the independent variable—Community Fire Preparedness and Safety Policy Implementation—and the dependent variable, Resilience, among selected barangays. Grounded in protection motivation theory and implementation science, the framework assumes that communities with higher preparedness levels and stronger enforcement of fire safety policies will experience lower fire incident rates. This is supported by international studies showing that preparedness behaviors and effective enforcement of safety regulations significantly reduce fire hazards and emergency response failures (Kobes et al., 2019; United Nations Disaster Risk Reduction, 2022). The framework further considers contextual factors such as population density, socio-economic conditions, and housing type, which may influence or moderate the identified relationships.

The succeeding discussion elaborates on each construct and its theoretical and empirical foundation.

Community fire preparedness refers to households' and neighborhoods' readiness to prevent, respond to, and recover from fire-related emergencies. Preparedness has been widely recognized as a critical determinant in reducing casualties and property damage during fire events (World Health Organization, 2021). It is examined through four sub-constructs. In the study, community fire preparedness refers to the level of readiness measured through household readiness, knowledge, and drills, hazard-reduction practices, and emergency coordination among selected barangays. In this study, it is operationally measured through household readiness, knowledge, and drills, hazard-reduction practices, and emergency coordination. Higher scores indicate greater preparedness and stronger preventive capacity at the household and community levels.

Household Readiness. Household readiness includes tangible safety measures, such as fire extinguishers, alarms, proper wiring, and LPG handling practices. Research shows that households with functional fire safety devices are 50–70% less likely to suffer severe fire-related damage or casualties (National Fire Protection Association, 2022). Locally, Santos and Lopez (2023) reported that households equipped with fire extinguishers and detector alarms demonstrated significantly lower fire vulnerability. In the study, household readiness refers to the availability and functionality of fire suppression equipment and household safety systems within respondent households. In this study, higher scores indicate better household-level readiness for fire emergencies.

Knowledge and Drills. Knowledge of emergency procedures and active participation in fire drills have been widely associated with faster response time and increased survival rates (Garcia, 2023; Kobes et al., 2010). Studies in Indonesia and Japan also found that communities that regularly conduct preparedness activities had significantly lower response delays during fire outbreaks (Takeda & Hattori, 2022). In the study, knowledge and drills refer to households' familiarity with fire emergency procedures and participation in community-based drills in the selected barangays. In the study, knowledge and drills refer to households' familiarity with fire emergency procedures and participation in community-based drills in the selected barangays.

Hazard Reduction Practices. Hazard reduction includes eliminating unsafe electrical practices, avoiding overuse of liquified petroleum gas, and properly storing combustible materials. According to Delos Reyes and Aquino (2021), negligence-related behaviors such as overloaded outlets, faulty wiring, and improper LPG storage are among the top three causes of residential fires in highly urbanized communities in the Philippines. In the study, hazard-reduction practices refer to household routines and preventive behaviors aimed at minimizing fire hazards in the surveyed barangays. In the study, hazard-reduction practices refer to household routines and preventive behaviors aimed at minimizing fire hazards in the surveyed barangays.

Emergency Coordination. Community-level coordination mechanisms, such as fire wardens, communication trees, and neighborhood response groups, ensure coordinated action during emergencies. Evidence demonstrates that communities with structured coordination systems experience fewer casualties and faster mitigation and recovery outcomes (Serrano & Perez, 2025; UNDRR, 2021). In the study, emergency coordination refers to the presence and functionality of communication channels, fire wardens, and organized response systems in the participating barangays. In the study, emergency coordination refers to the presence and functionality of communication channels, fire wardens, and organized response systems in the participating barangays.

Altogether, community preparedness reflects the behavioral and environmental capability of households and barangays to minimize fire risks. It indicates the extent to which residents have the knowledge, practices, resources, and coordination systems necessary to prevent and respond to fire-related emergencies. Higher levels of preparedness suggest that communities are better able to reduce vulnerabilities, protect lives and property, and promote a safer living environment.

Safety policy implementation refers to the degree to which fire safety regulations, standards, and local policies are enforced and operationalized. Effective implementation ensures that fire-prevention mandates translate into measurable safety outcomes (Proctor et al., 2009). This variable is examined through four constructs. Safety policy implementation refers to the process of translating fire safety regulations, enforcement protocols, and community-based directives into consistent and measurable practices through inspections, penalties, information campaigns, and infrastructure support, ensuring that established safety policies result in compliance and behavioral change at the local level (Cruz, 2024; Setiawan, 2022; OECD, 2021). Effective implementation bridges policy intent and on-the-ground application, strengthening community safety culture and regulatory accountability. In the study, safety policy implementation refers to how inspection and permitting, enforcement and penalties, risk communication and education, and infrastructure support are carried out and experienced within the selected barangays. In the study, safety policy implementation refers to how inspection and permitting, enforcement and penalties, risk communication and education, and infrastructure support are carried out and experienced within the selected barangays.

Inspection and Permitting Inspection and permitting refer to the systematic processes used by authorities to assess compliance with established fire safety regulations, ensure structural safety, and authorize the operation or occupancy of homes and establishments. Research shows that consistent inspection programs reduce preventable hazards, especially in high-risk and informal settlement areas where unsafe electrical installations and unregulated LPG use are common (Setiawan, 2022; Bureau of Fire Protection, 2024; OECD, 2021). These procedures strengthen regulatory accountability and establish routine compliance monitoring within local communities. In the study, inspection and permitting refer to the frequency, consistency, and extent of compliance inspections and permit validations carried out in the selected barangays. In the study, inspection and permitting refer to the frequency, consistency, and extent of compliance inspections and permit validations carried out in the selected barangays.

Enforcement and Penalties. Enforcement and penalties refer to the application of corrective actions and sanctions to ensure adherence to fire safety policies and discourage unsafe practices, and literature indicates that consistent enforcement significantly increases compliance, while weak or selective implementation contributes to normalized risk behaviors and regulatory disregard (Cruz, 2024; OECD, 2021; Setiawan, 2022). Enforcement systems promote a culture of accountability by demonstrating that violations have tangible consequences, which strengthens community adherence to mandated safety standards. In the study, enforcement and penalties refer to the consistency with which safety rules are enforced and the implementation of penalties for violations in the

selected barangays. In the study, enforcement and penalties refer to the consistency with which safety rules are enforced and the implementation of penalties for violations in the selected barangays.

Risk Communication and Education. Risk communication and education refer to structured information dissemination, community awareness campaigns, safety orientations, and training programs that strengthen public understanding of fire risks and shape safer household behaviors, and several studies confirm that continuous education increases knowledge retention, improves emergency decision-making, and reduces the incidence of preventable fire hazards in communities (Garcia, 2023; UNDRR, 2021; National Fire Protection Association, 2022). When communication is clear, accessible, and culturally aligned, communities demonstrate higher participation and responsiveness to safety protocols. In the study, risk communication and education refer to the level of community exposure to fire safety campaigns, orientations, and educational programs implemented at the barangay level. In the study, risk communication and education refer to the level of community exposure to fire safety campaigns, orientations, and educational programs implemented at the barangay level.

Infrastructure Support. Infrastructure support refers to the availability, accessibility, and functionality of physical fire protection systems such as hydrants, firefighting equipment, accessible evacuation routes, alarms, and signage, which play a crucial role in improving response time and reducing the severity of fire incidents (UN-Habitat, 2020; Serrano & Perez, 2025; BFP Philippines, 2024). Communities with adequate fire-safety infrastructure demonstrate higher resilience and more efficient mitigation and recovery actions following fire emergencies. In the study, infrastructure support refers to the presence and adequacy of fire safety facilities and structural resources within the selected barangays. In the study, infrastructure support refers to the presence and adequacy of fire safety facilities and structural resources within the selected barangays.

Together, these constructs reflect how institutional interventions translate into community safety outcomes. They demonstrate that the effectiveness of fire safety governance depends not only on the presence of policies but also on their consistent implementation, monitoring, and support at the community level. When inspections, enforcement systems, communication efforts, and infrastructure support function effectively, they strengthen compliance behavior, reduce fire risks, and enhance barangay safety capacity.

Community resilience refers to a community's capacity to withstand, adapt to, and recover from hazardous events while maintaining essential functions, supporting social stability, and reducing long-term disruption. It has been widely recognized as a core foundation of disaster risk reduction, emphasizing collective coping capacity, resource mobilization, and continuity mechanisms that allow communities to remain functional despite adversity (UNDRR, 2022; World Health Organization, 2021; Meerow et al., 2019). Resilient communities are characterized by their ability to learn from past events, adjust systems and behaviors, and build governance structures that enhance preparedness and response outcomes. In the study, community resilience refers to the degree to which the selected barangays demonstrate adaptive capacity, response capability, recovery and continuity mechanisms, and community awareness and engagement regarding fire hazards. In the study, community resilience refers to the degree to which the selected barangays demonstrate adaptive capacity, response capability, recovery and continuity mechanisms, and community awareness and engagement regarding fire hazards.

Community Adaptive Capacity. Community adaptive capacity refers to the ability of a community to adjust, reorganize, and take proactive steps to reduce vulnerability and manage the impacts of hazards, and research shows that communities with strong adaptive capacity demonstrate flexibility, resource mobilization, learning mechanisms, and forward-planning behaviors that support long-term Resilience (UNDRR, 2022; World Health Organization, 2021; Meerow et al., 2019). Adaptive capacity includes social networks, institutional support, and the ability to modify practices in response to risk awareness and experience. In the study, community adaptive capacity refers to how households and barangays demonstrate flexibility, problem-solving, and planning behaviors in preparing for and adapting to fire risks. In the study, community adaptive capacity refers to how households and barangays demonstrate flexibility, problem-solving, and planning behaviors in preparing for and adapting to fire risks.

Community Response Capability. Community response capability refers to the ability of community members and institutions to act quickly and effectively during emergencies, including mobilizing resources, coordinating communication, and implementing response procedures, and studies highlight that communities with strong response capability experience fewer delays, improved emergency outcomes, and reduced loss of life and property (UNDRR, 2021; Garcia, 2023; Takeda & Hattori, 2022). Response capability depends on preparedness training, coordination systems, leadership roles, and clarity of emergency actions. In the study, community response capability refers to how efficiently selected barangays mobilize their response systems and execute emergency procedures during fire events. In the study, community response capability refers to the efficiency with which selected barangays mobilize their response systems and execute emergency procedures during fire events.

Recovery and Continuity Mechanism. Recovery and continuity mechanisms are the systems, resources, and strategies used to restore community functions, rebuild affected areas, and ensure the continuity of essential services after a hazardous event. Research demonstrates that communities with strong recovery systems return to normalcy faster and maintain stability through coordinated rehabilitation plans, financial support systems, and community-led rebuilding efforts (UN-Habitat, 2020; Serrano & Perez, 2025; World Bank, 2022). Effective recovery also depends on governance support, access to resources, and community collaboration. In the study, recovery and continuity mechanisms refer to how selected barangays sustain essential services and support rebuilding or rehabilitation efforts after fire-related disruptions. In the study, recovery and continuity mechanisms refer to how selected barangays sustain essential services and support rebuilding or rehabilitation efforts after fire-related disruptions.

Community Awareness and Engagement. Community awareness and engagement refer to the extent to which community members are informed, involved, and actively participating in safety initiatives, decision-making processes, and disaster risk reduction programs, and current literature shows that engaged communities develop stronger safety cultures, demonstrate higher preparedness levels, and contribute to sustained resilience outcomes over time (UNDRR, 2022; Delos Reyes & Aquino, 2021; National Fire Protection Association, 2022). Engagement is strengthened through shared responsibility, representation in leadership, and continuous communication. In the study, community awareness and engagement refer to residents' participation in barangay fire safety activities, decision-making, and awareness-building initiatives. In the study, community awareness and engagement refer to residents' participation in barangay fire safety activities, decision-making, and awareness-building initiatives.

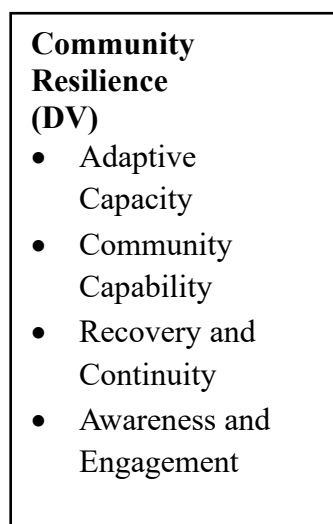


Figure 1. Schematic Diagram of the Study

Statement of the Problem

This study aimed to examine the mediating role of safety policy implementation in the relationship between community fire preparedness and community resilience among selected barangays. Specifically, it sought to

determine how preparedness practices contribute to resilience, and whether safety policy implementation strengthens, explains, or enhances this relationship. Through this analysis, the study intends to generate localized evidence that may help improve community-level fire risk governance, strengthen resilience frameworks, and support context-responsive disaster risk reduction strategies.

1. What is the level of community fire preparedness in the selected barangays in terms of household readiness, knowledge and drills, hazard reduction practices and emergency coordination?
2. What is the level of safety policy implementation in the selected barangays in terms of inspection and permitting, enforcement and penalties, risk communication and education and infrastructure support?
3. What is the level of community resilience in the selected barangays in terms of community adaptive capacity, community response capability, recovery and continuity mechanisms, community awareness and engagement?
4. Is there a significant relationship between community fire preparedness and safety policy implementation?
5. Is there a significant relationship between safety policy implementation and community resilience?
6. Is there a significant relationship between community fire preparedness and community resilience?
7. Which variables significantly predict community resilience?
8. Is there a safety policy implementation significantly mediates the relationship between community fire preparedness and community resilience?

Null Hypothesis

H₀₁: There is no significant relationship between community fire preparedness and community resilience.

H₀₂: There is no significant relationship between community fire preparedness and safety policy implementation.

H₀₃: There is no significant relationship between safety policy implementation and community resilience.

H₀₄: Safety policy implementation does not significantly mediate the relationship between community fire preparedness and community resilience.

RESEARCH METHODOLOGY

Design

This study utilized a quantitative correlational research design, which was appropriate because it examined relationships among naturally occurring variables without manipulation (Creswell & Creswell, 2021). A correlational design was used to determine whether a statistical association existed between community fire preparedness, safety policy implementation, and community resilience. To further analyze the indirect effect of safety policy implementation, the study employed a mediation analysis, which was suitable for examining how and why relationships among variables occurred (Hayes, 2022). The design allowed the collection of numerical data using structured survey questionnaires to measure the three main variables and their corresponding constructs. Statistical procedures, including descriptive statistics, correlation, and mediation testing, were applied to describe the data and determine the significance and direction of relationships among the variables.

Setting

This study was conducted in a highly urbanized locality in Northern Mindanao, Philippines. The area comprises several barangays with diverse community characteristics, including residential zones, informal settlements, and commercial districts. Based on the 2020 Philippine Statistics Authority census, the locality had a population of more than 360,000, with many areas characterized by high population density and closely built structures. Several communities also had clustered housing units, shared electrical connections, narrow access roads, and limited firefighting infrastructure, making them more vulnerable to fire incidents. These physical and socio-environmental conditions made the locality an appropriate setting for examining fire preparedness, the implementation of safety policies, and community resilience.

Respondents

The respondents in this study were community members affected by fire incidents in selected barangays of a highly urbanized locality in Northern Mindanao. Only individuals aged 18 years and above residing in fire-affected households were considered eligible to participate. Any adult household member was allowed to answer the questionnaire, provided they had direct awareness and experience of the fire event and the subsequent preparedness or recovery activities undertaken by the household.

A total of 450 respondents were included to ensure statistical reliability and representativeness. Respondents were selected proportionally to the distribution of documented fire-affected households across the identified barangays. This sampling approach acknowledged variations in housing structures, socio-economic conditions, and levels of vulnerability within the affected communities. By focusing exclusively on fire-affected populations, the study ensured that the data reflected firsthand experiences of preparedness, policy awareness, and community resilience. This approach strengthened the relevance of the findings, as respondents had lived experience of the hazard being examined.

The inclusion criteria for participation were as follows: (1) the respondent must be a resident of a selected barangay; (2) must belong to a household that had been directly affected by a fire incident; (3) must be at least 18 years old; and (4) must have direct knowledge or experience of the fire incident, including the household's preparedness, response, or recovery activities. Any adult household member who met these criteria was considered qualified to answer the questionnaire.

Instrument

The primary research instrument used in this study was a researcher-developed, structured questionnaire designed to assess community fire preparedness, safety policy implementation, and community resilience among fire-affected households. The development of the instrument was informed by existing literature, Bureau of Fire Protection (BFP) protocols, national policies related to fire safety, and established models of disaster preparedness and Resilience. To ensure content appropriateness and clarity, the questionnaire underwent expert review and a pilot test. The computed Cronbach's alpha coefficient of 0.91 confirmed that the instrument has high internal reliability.

The questionnaire is composed of three major parts:

Community Fire Preparedness Questionnaire (Appendix A). The Community Fire Preparedness Questionnaire (Appendix A) was a researcher-developed instrument designed to assess household fire preparedness in the selected barangays. The questionnaire was developed in line with disaster risk reduction principles and existing fire safety frameworks to capture relevant preparedness dimensions at the household and community levels. This section measures the extent to which households are prepared for potential fire incidents. It is divided into four subcomponents: Household Readiness, Knowledge and Drills, Hazard Reduction Practices, and Emergency Coordination. Items under this part examine whether households possess basic fire safety equipment, implement preventive safety measures, participate in fire drills, and maintain awareness of emergency communication channels and coordination systems.

To establish reliability, the instrument was subjected to a pilot test with respondents with characteristics similar to those of the target population. The internal consistency of the questionnaire was measured using Cronbach's Alpha, which yielded a coefficient of 0.88 or higher, indicating that the instrument is reliable and acceptable for data collection.

Scale	Continuum	Responses	Interpretations
4	3.50–4.00	Strongly Agree (SA)	Very High
3	2.50–3.49	Agree (A)	High

2	1.50–2.49	Disagree (D)	Low
1	1.00–1.49	Strongly Disagree (SD)	Very Low

Safety Policy Implementation (Appendix B). The Safety Policy Implementation Questionnaire (Appendix B) is a researcher-made instrument used to assess the level of implementation of fire safety policies in the selected barangays. This section captures respondents’ perceptions of how fire safety regulations and programs are enforced, communicated, and supported within their communities. This part comprises four subcomponents: Inspection and Permitting, Enforcement and Penalties, Risk Communication and Education, and Infrastructure Support. The items under this section examine the extent to which fire safety policies are monitored and implemented, the effectiveness of enforcement measures and penalties, the dissemination of fire safety information and education, and the availability of facilities and resources that support fire prevention and response.

The instrument underwent content validation by a panel of experts in disaster risk reduction, fire safety, and research methodology to ensure that all items were relevant, clear, and aligned with the study's objectives. Revisions were made based on their feedback to improve the clarity, structure, and appropriateness of the questionnaire. A Content Validity Index (CVI) was computed and yielded a satisfactory value, indicating strong content validity.

To establish reliability, the questionnaire was pilot-tested among respondents with characteristics similar to those of the target population. Internal consistency was measured using Cronbach’s Alpha, which yielded a coefficient of 0.92 or higher, indicating that the instrument is reliable and acceptable for data collection.

Scale	Continuum	Responses	Interpretations
4	3.50–4.00	Strongly Agree (SA)	Very High
3	2.50–3.49	Agree (A)	High
2	1.50–2.49	Disagree (D)	Low
1	1.00–1.49	Strongly Disagree (SD)	Very Low

Community Resilience (Appendix C). The Community Resilience Questionnaire (Appendix C) is a researcher-made instrument designed to measure the community’s ability to withstand, respond to, and recover from fire-related incidents. This section evaluates how well the community adapts to risks, manages emergencies, and sustains long-term recovery and safety efforts. This part comprises four domains: Community Adaptive Capacity, Community Response Capability, Recovery and Continuity Mechanisms, and Community Awareness and Engagement. The items assess the community’s ability to learn from past fire incidents, implement adaptive strategies, coordinate response systems, support affected households, and promote awareness and participation in fire safety initiatives.

The Community Resilience Questionnaire underwent content validation by experts in disaster risk reduction, community safety, and research methodology to ensure that the items are relevant, clear, and aligned with the study objectives. Feedback from the validators was incorporated to improve the wording, structure, and appropriateness of the instrument. A Content Validity Index (CVI) was computed and yielded a satisfactory result, indicating strong content validity.

To establish reliability, the instrument was pilot-tested among respondents with characteristics similar to those of the target population. Internal consistency was measured using Cronbach’s Alpha, which yielded a coefficient of 0.93 or higher, indicating that the questionnaire is reliable and acceptable for data collection.

Scale	Continuum	Responses	Interpretations
4	3.50–4.00	Strongly Agree (SA)	Very High Resilience
3	2.50–3.49	Agree (A)	High Resilience
2	1.50–2.49	Disagree (D)	Low Resilience
1	1.00–1.49	Strongly Disagree (SD)	Very Low Resilience

Data Gathering Procedure

Prior to conducting the study, the researcher secured a research permit and formal endorsements from the City Government of Iligan and the Bureau of Fire Protection (BFP)–Iligan. Permission letters were also sent to the selected barangay captains to request access to their constituents for the distribution of questionnaires and to obtain official fire incident records for the past three years. These approvals ensured that the study was conducted in coordination with the relevant authorities and in compliance with local regulations.

The data collection was undertaken in three phases. In the first phase, a pilot test of the self-developed instrument was conducted with at least 30 respondents in a barangay not included in the main study to assess its reliability and validity. Revisions were made to refine the questionnaire items based on expert feedback and pilot results. In the second phase, the main data gathering commenced. Trained enumerators administered household questionnaires to respondents, proportionally distributed across selected barangays with high-, moderate-, and low-risk classifications. At the same time, key officials—including barangay council members, members of the Barangay Disaster Risk Reduction and Management Council (BDRRMC), and BFP personnel—accomplished the policy implementation survey. Participation was voluntary, and informed consent was obtained from all respondents.

In the third phase, official records of fire incidents were retrieved from the BFP–Iligan to compute the fire incident rate per 10,000 population per barangay. All collected data were checked, encoded, and organized for analysis. Descriptive statistics were used to present the profile of respondents and the levels of preparedness and policy implementation. In contrast, inferential statistics, such as correlation and regression, were employed to test the hypothesized relationships. Confidentiality was maintained throughout the process, and all information gathered was used strictly for research purposes.

Ethical Considerations

This study followed established ethical standards in the conduct of research involving human participants. Prior to implementation, the full research protocol, survey tool, recruitment process, and consent procedures were submitted for independent review and approval by the MU-Research Ethics Committee (MU-REC).

Data collection commenced only after ethics clearance was formally issued, ensuring that the research aligned with national and institutional ethical guidelines.

Informed consent was secured from all participants before their involvement in the study. The purpose of the research, the voluntary nature of participation, the expected time involvement, the possible risks and benefits, and the rights of participants—including the right to decline or withdraw at any time without penalty—were clearly communicated. Only individuals who willingly agreed to participate proceeded with the survey.

Confidentiality and anonymity were strictly maintained. No personally identifiable information, such as names, addresses, or organizational roles, was included in the dataset or published results. All responses were encoded using numerical identifiers, and only aggregated data appeared in reports and publications.

The collected data were stored in password-protected files accessible only to the researcher and were disposed of securely after the required retention period, in accordance with institutional policy.

The principles of beneficence and non-maleficence were upheld. The survey was designed to be non-sensitive and non-intrusive, focusing exclusively on fire preparedness, safety implementation, and resilience-related practices. Participation did not expose respondents to harm, coercion, or discomfort. Necessary permissions from local authorities were obtained to ensure accountability and compliance with community protocols.

By adhering to these ethical procedures—including prior ethics approval, voluntary participation, confidentiality safeguards, and responsible data handling—the study ensured that the rights, dignity, safety, and well-being of all respondents were fully protected throughout the research process.

Data Analysis

The following statistical tools were used in the study:

Mean and Standard Deviation. These were used to determine the level of community fire preparedness, safety Policy implementation, and community resilience in the selected barangays.

Spearman Rank-Order Correlation Coefficient (Spearman's rho). This non-parametric test was used to examine the significant relationships among variables, including: (1) community fire preparedness and safety policy implementation, (2) safety policy implementation and community resilience, and (3) community fire preparedness and community resilience.

Multiple Linear Regression Analysis. This method was employed to determine which independent variables significantly predict community resilience, both individually and in combination. The analysis identified the relative contribution of each predictor, including hazard reduction practices, enforcement and penalties, risk communication and education, and infrastructure support, in explaining variations in community resilience.

Mediation Analysis Using Regression-Based Approach (PROCESS Macro). This procedure was applied to examine whether safety policy implementation mediates the relationship between community fire preparedness and community resilience. The analysis determined the direct, indirect, and total effects of preparedness on Resilience, providing insights into whether preparedness's influence operates through safety policy implementation.

RESULTS AND DISCUSSIONS

This chapter presents the findings of the study based on the data gathered from the respondents in the selected barangays. The results are organized according to the Statement of the Problem and are interpreted using relevant theories and supporting literature. Specifically, the discussions are anchored on Protection Motivation Theory, which explains preparedness behavior through perceived risk and coping responses; Implementation Science Framework, which emphasizes the role of systems and policy execution; and Community Resilience Theory, which highlights the adaptive and recovery capacities of communities during hazards (Rogers, 1975; Proctor et al., 2009; Norris et al., 2008). The findings provide empirical evidence on how preparedness practices and safety policy mechanisms contribute to resilience outcomes in fire-prone communities. The significance of these findings lies in their potential to guide barangay leaders, local government units, and fire authorities in strengthening community-based fire governance, preparedness programs, and resilience-building strategies.

Community Fire Preparedness in the Selected Barangays

Table 1 shows the level of community fire preparedness in the selected barangays. Among the indicators, hazard reduction practices had the highest mean ($M = 3.17$, $SD = 0.37$), indicating that respondents consistently practice preventive measures such as proper storage of flammable materials, safe handling of electrical connections, and proper use of Liquefied Petroleum Gas. This result may be attributed to the fact that such practices are more behavior-based, low-cost, and easier to perform regularly compared with purchasing equipment or upgrading housing structures. These actions are often learned through daily experience, prior incidents, and community reminders, making them more accessible to households regardless of income level. In contrast, household readiness recorded the lowest mean ($M = 2.67$, $SD = 0.46$), although still interpreted as high, suggesting

comparatively lower availability or maintenance of fire extinguishers, smoke alarms, emergency kits, and structural safety features at the household level. This lower result may be associated with financial constraints, limited access to equipment, or lower prioritization of preparedness investments. Overall, the level of community fire preparedness yielded a mean of 2.89 (SD = 0.44), which falls under the high category, indicating that the barangays generally demonstrate a strong level of preparedness across the measured dimensions.

The findings suggest that while communities are actively engaged in behavioral and preventive practices, there is relatively lower emphasis on structural and equipment-based preparedness. This indicates that residents may be more inclined to adopt routine safety behaviors that require minimal cost and effort, rather than invest in more resource-intensive preparedness measures. Protection Motivation Theory supports this finding by explaining that individuals are more likely to adopt protective actions when they perceive them as practical, effective, and achievable within their available resources (Rogers, 1975). Thus, households may prefer preventive habits that are easier to implement than material investments requiring additional cost.

The results imply that fire safety interventions should not only sustain behavioral awareness but also strengthen household-level readiness through accessible resources and policy support. Local government units and the Bureau of Fire Protection may need to prioritize programs that provide affordable fire safety equipment, subsidies, or community-based distribution systems, especially in vulnerable areas. Additionally, integrating household readiness into inspection protocols and community campaigns can bridge the gap between practice and infrastructure. Strengthening this dimension is critical because effective fire preparedness requires both preventive behavior and immediate response capacity, ensuring that communities are not only avoiding risks but are also equipped to respond when incidents occur.

The findings align with previous studies, which emphasize that hazard-reduction behaviors are more commonly practiced than structural preparedness due to accessibility and affordability factors. According to the National Fire Protection Association (2022), households that consistently observe fire prevention behaviors significantly reduce fire risk, but the absence of functional safety equipment increases vulnerability during actual incidents. Similarly, the World Health Organization (2021) reported that while awareness and preventive practices are essential, the presence of alarms and extinguishing tools remains a key determinant of survival and damage reduction. Santos and Lopez (2023) further found that urban Philippine households often display high awareness of fire risks but experience gaps in material preparedness due to economic and infrastructural constraints.

The significance of these findings lies in highlighting that fire preparedness programs should not focus solely on awareness campaigns but also on improving household readiness through material support and policy assistance. Local government units and the Bureau of Fire Protection may strengthen subsidy programs, affordable equipment distribution, and community-based inspection systems to increase access to fire safety devices. Enhancing both behavioral preparedness and structural readiness can create a more balanced and effective community fire safety system.

Table 1: Level of Community Fire Preparedness in the Selected Barangays

Constructs	M	SD	Interpretation
Household Readiness	2.67	0.46	High
Knowledge And Drills	2.80	0.45	High
Hazard Reduction Practices	3.17	0.37	High
Emergency Coordination	2.91	0.47	High
Overall Level of Preparedness	2.89	0.44	High

Scale: 3.25-4.00(Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)

Safety Policy Implementation in the Selected Barangays

Table 2 shows the level of safety policy implementation in the selected barangays. Among the indicators, enforcement and penalties obtained the highest mean ($M = 2.93$, $SD = 0.43$), interpreted as high, indicating that regulatory actions, sanctions, and corrective measures are relatively well enforced within the communities. This high result may be attributed to the visible, immediate nature of enforcement activities, which make violations easier to identify and respond to through warnings, penalties, or compliance directives. In contrast, inspection and permitting recorded the lowest mean ($M = 2.65$, $SD = 0.75$), although still interpreted as high, suggesting that compliance monitoring, permit processing, and routine inspections are comparatively less consistent or rigorous. This lower result may be associated with manpower shortages, scheduling limitations, administrative delays, and the broad coverage responsibilities of enforcement agencies. Overall, the level of safety policy implementation was 2.79 ($SD = 0.60$), which falls within the high category, indicating that fire safety policies are generally implemented across the barangays, albeit with varying effectiveness among specific components.

The findings indicate that reactive mechanisms of policy implementation, such as enforcement and penalties, are more prominent than proactive regulatory processes such as inspection and permitting. This suggests that authorities may be more effective at responding after violations are detected than at consistently preventing hazards through regular monitoring. The relatively lower rating for inspection and permitting implies that preventive compliance systems may face operational constraints that reduce early hazard detection. Meanwhile, the stronger enforcement rating indicates that corrective actions are actively applied once non-compliance is identified. This imbalance reflects a governance system that is more compliance-driven after detection than prevention-oriented before incidents occur.

The findings may be explained by the Implementation Science Framework, which emphasizes that the success of policies depends not only on their existence but also on their consistent delivery, monitoring, and sustained implementation in actual settings (Proctor et al., 2009). In this case, enforcement activities may be more visible and easier to execute than inspection systems, which often require regular manpower, transport resources, technical personnel, and administrative coordination. Thus, differences in implementation capacity may explain why some policy dimensions perform better than others.

The findings are consistent with previous studies, which emphasize that effective fire safety systems require a balance between enforcement and preventive inspection practices. According to the Organization for Economic Co-operation and Development (2021), regulatory systems that rely heavily on enforcement without strong inspection mechanisms often experience gaps in early hazard detection and long-term compliance. Similarly, the Bureau of Fire Protection (2024) reported that regular inspections and permitting processes are essential for identifying structural risks and ensuring compliance with fire safety standards before incidents occur. Cruz (2024) further found that inconsistencies in local inspection practices contribute to uneven policy implementation, reinforcing the importance of strengthening proactive monitoring systems alongside enforcement measures.

The significance of these findings lies in showing that policy implementation should not rely solely on sanctions and reactive responses, but must also strengthen preventive governance mechanisms. Local government units and fire authorities may improve the frequency, transparency, and consistency of inspections while streamlining permitting processes to encourage public compliance. Investing in inspection personnel, digital monitoring systems, and community reporting mechanisms can improve early hazard identification. Balancing enforcement with preventive strategies can create a more holistic fire safety system where compliance is sustained through both accountability and continuous support.

Table 2: Level of Safety Policy Implementation in the Selected Barangays

Constructs	M	SD	Interpretation
Inspection and Permitting	2.65	0.75	High
Enforcement and Penalties	2.93	0.43	High

Risk Communication and Education	2.84	0.47	High
Infrastructure Support	2.72	0.75	High
Overall Level of Implementation	2.79	0.60	High

Scale: 3.25-4.00(Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)

Community Resilience in the Selected Barangays

Table 3 shows the level of community resilience in the selected barangays. Among the indicators, recovery and continuity mechanisms had the highest mean ($M = 2.84$, $SD = 0.50$), indicating that communities have relatively strong systems for restoring normal functions, maintaining essential services, and supporting affected households after fire incidents. This high result may be attributed to community support systems, prior experience with emergencies, and local leaders' ability to mobilize resources during recovery periods. In contrast, community awareness and engagement recorded the lowest mean ($M = 2.69$, $SD = 0.72$), although still considered high, suggesting comparatively lower resident participation in fire safety programs, planning activities, and community decision-making processes. This lower result may be associated with limited public interest, competing household priorities, weak communication strategies, or insufficient opportunities for meaningful participation. Overall, the level of community resilience yielded a mean of 2.78 ($SD = 0.57$), which falls under the high category, indicating that the barangays generally possess a solid capacity to withstand, respond to, and recover from fire-related hazards.

The findings indicate that communities are relatively stronger in post-disaster recovery and continuity than in pre-disaster and during-disaster engagement and participation. This suggests that while systems and support mechanisms are available to help communities recover after fire incidents, there is comparatively less emphasis on involving residents in preparedness activities and resilience-building processes before emergencies occur. The lower ratings in awareness and engagement imply that Resilience is being reinforced more through institutional support and reactive recovery systems than through proactive community participation, which is essential for long-term sustainability.

These findings are supported by Community Resilience Theory, which explains that Resilience is built through adaptive capacities such as social networks, community participation, communication systems, and competent governance (Norris et al., 2008). The theory suggests that communities with strong support systems may recover effectively after disasters. However, long-term resilience strengthens when residents are actively involved in preparedness, planning, and shared decision-making. Thus, the lower score in awareness and engagement highlights an area where resilience capacity can still be improved.

The findings are consistent with previous studies emphasizing that community engagement is a critical driver of Resilience. According to the United Nations Office for Disaster Risk Reduction (2022), resilient communities are characterized not only by their ability to recover but also by residents' active participation in preparedness and risk-reduction initiatives. Similarly, the World Health Organization (2021) emphasized that community awareness and involvement significantly improve the effectiveness of disaster response and long-term recovery outcomes. Meerow et al. (2019) further noted that resilience strengthens when communities combine institutional support with active public participation and inclusive governance systems.

The significance of these findings lies in demonstrating that strengthening community resilience requires not only effective recovery systems but also greater community participation, awareness, and engagement. Local authorities and barangay leaders may intensify efforts to involve residents in fire safety programs through regular community drills, participatory planning, volunteer initiatives, and awareness campaigns. Encouraging active engagement can promote shared responsibility, improve preparedness, and strengthen collective action during emergencies. Integrating community feedback systems and inclusive decision-making processes may also help ensure that resilience strategies are responsive to local needs, thereby improving both preventive and adaptive capacities within the barangays.

Table 3: Level of Community Resilience in the Selected Barangays

Constructs	M	SD	Interpretation
Community Adaptive Capacity	2.81	0.46	High
Community Response Capability	2.76	0.58	High
Recovery and Continuity Mechanisms	2.84	0.50	High
Community Awareness and Engagement	2.69	0.72	High
Overall Level of Implementation	2.78	0.57	High

Scale: 3.25-4.00(Very High); 2.50-3.24 (High); 1.75-2.49 (Low); 1.00-1.74 (Very Low)

Relationship Between Community Fire Preparedness and Safety Policy Implementation

Table 4 shows a significant relationship between community fire preparedness and the implementation of safety policies in the selected barangays. Among the indicators, emergency coordination showed the strongest relationship with safety policy implementation, particularly with inspection and permitting ($r_s = 0.557$, $p < .001$), indicating a highly significant, moderate positive correlation. In contrast, knowledge and drills demonstrated the weakest relationship, particularly with infrastructure support ($r_s = 0.077$, $p = 0.104$), which is not statistically significant. Overall, the results indicate that most dimensions of community fire preparedness are significantly associated with safety policy implementation, thereby rejecting the null hypothesis.

The findings suggest that preparedness components involving collective organization and coordination, such as emergency coordination, are more strongly linked to policy implementation than are individual-level knowledge and drills. This indicates that when communities have structured systems—such as communication channels, designated personnel, and coordinated response mechanisms—they are more aligned with formal safety policies and governance practices. On the other hand, the weak and non-significant relationships between knowledge, drills, and some policy indicators imply that individual awareness and training do not automatically translate into policy compliance or institutional implementation. This reflects a gap between individual preparedness behaviors and systemic enforcement mechanisms, suggesting that policy implementation is more effectively integrated at the community and organizational level rather than at the purely individual level.

The findings are supported by recent literature emphasizing that community-level coordination is a key factor in effective policy implementation and disaster preparedness. According to the United Nations Office for Disaster Risk Reduction (2022), coordinated community systems significantly enhance the effectiveness of disaster risk governance by aligning local practices with institutional policies.

Similarly, the World Bank (2022) highlights that community-based coordination mechanisms improve policy compliance and strengthen disaster response outcomes. Furthermore, Garcia (2023) found that barangays with organized emergency structures and active coordination with authorities demonstrate higher levels of policy implementation, reinforcing the importance of integrating community systems with formal governance frameworks to achieve effective fire safety management.

The results imply that strengthening community fire safety requires not only enhancing individual knowledge but also strengthening collective coordination structures that align with policy implementation. Local government units and fire authorities should prioritize programs that build organized community systems, such as barangay emergency response teams, communication networks, and coordinated drills, as these are more strongly associated with effective policy execution.

Additionally, efforts should be made to bridge the gap between knowledge and policy by ensuring that fire safety education is directly linked to enforcement practices and infrastructure support. This integrated approach can enhance both compliance and effectiveness, leading to a more cohesive and responsive fire safety system at the community level.

Table 4: Significant Relationship between community fire preparedness and safety policy implementation

Variables		Inspection and Permitting	Enforcement and Penalties	Risk Communication and Education	Infrastructure Support
Household Readiness	r _s	0.431	0.384	0.290	0.346
	p	<.001	<.001	<.001	<.001
Knowledge And Drills	r _s	0.195	0.089	0.169	0.077
	p	<.001	0.059	<.001	0.104
Hazard Reduction Practices	r _s	0.444	0.373	0.322	0.383
	p	<.001	<.001	<.001	<.001
Emergency Coordination	r _s	0.557	0.473	0.373	0.426
	p	<.001	<.001	<.001	<.001

Notes: Ho: There is no significant relationship between community fire preparedness and safety policy implementation

P value Scale: *** p < .001 (Highly Significant); **p<0.01 (Highly Significant); *p<0.05 (Significant); p>0.05 (Not significant)

Relationship between Safety Policy Implementation and Community Resilience

Table 5 shows the significant relationship between safety policy implementation and community resilience in the selected barangays. Among the indicators, risk communication and education demonstrated the strongest relationship with community resilience, particularly with community adaptive capacity (r_s = 0.800, p < .001), indicating a very strong and highly significant correlation. In contrast, inspection and permitting showed the weakest relationship, particularly with recovery and continuity mechanisms (r_s = 0.440, p < .001), although still statistically significant. Overall, all dimensions of safety policy implementation exhibit highly significant relationships with all components of community resilience, leading to the rejection of the null hypothesis.

The findings indicate that safety policy implementation plays a critical and direct role in strengthening community resilience, particularly through communication-based interventions. The exceptionally strong relationship between risk communication and adaptive capacity suggests that when communities are well-informed, trained, and continuously educated about fire risks, they become better able to adjust, plan, and respond effectively to hazards. Meanwhile, the comparatively weaker relationship of inspection and permitting implies that regulatory compliance alone may not be sufficient to enhance recovery systems unless complemented by active engagement and awareness. This highlights that Resilience is not only built through structural and regulatory measures but is significantly reinforced by knowledge dissemination, community education, and information accessibility, which empower individuals and communities to act proactively.

The findings are supported by recent studies emphasizing that risk communication and education are key drivers of community resilience. According to the United Nations Office for Disaster Risk Reduction (2022), effective communication systems enhance community awareness, adaptive capacity, and disaster preparedness, significantly improving resilience outcomes. Similarly, the World Health Organization (2021) highlights that continuous education and public awareness initiatives enable communities to make informed decisions and respond effectively to emergencies. Furthermore, Setiawan (2022) found that communities with strong policy communication and education mechanisms demonstrate higher levels of compliance, preparedness, and Resilience, reinforcing the importance of integrating information-driven strategies into safety policy implementation frameworks.

The results imply that enhancing community resilience requires prioritizing risk communication, education, and accessible information systems as central components of safety policy implementation. Local government units and fire authorities should strengthen community-based education programs, regular safety campaigns, and training initiatives that promote awareness and preparedness.

Additionally, integrating communication strategies with infrastructure and enforcement policies can create a more comprehensive resilience framework. By focusing on both informational empowerment and structural support, communities can build stronger adaptive capacities, improve response efficiency, and sustain recovery efforts, ultimately leading to more resilient, disaster-ready barangays.

Table 5: Significant Relationship between safety policy implementation and community resilience

Variables		Community Adaptive Capacity	Community Response Capability	Recovery and Continuity Mechanisms	Community Awareness and Engagement
Inspection and Permitting	r _s	0.585	0.509	0.440	0.470
	p	< .001	< .001	< .001	< .001
Enforcement and Penalties	r _s	0.600	0.631	0.553	0.577
	p	< .001	< .001	< .001	< .001
Risk Communication and Education	r _s	0.800	0.659	0.669	0.746
	p	< .001	< .001	< .001	< .001
Infrastructure Support	r _s	0.708	0.784	0.611	0.673
	p	< .001	< .001	< .001	< .001

Notes: Ho: There is no significant relationship between safety policy implementation and community resilience

P value Scale: *** p < .001 (Highly Significant); **p<0.01 (Highly Significant); *p<0.05 (Significant); p>0.05 (Not significant)

Relationship between Community Fire Preparedness and Community Resilience

Table 6 shows the significant relationship between community fire preparedness and community resilience in the selected barangays. Among the indicators, emergency coordination showed the strongest relationship with community resilience, particularly with community response capability (r_s = 0.369, p < .001), indicating a moderate, highly significant correlation. In contrast, knowledge and drills demonstrated the weakest relationship, particularly with recovery and continuity mechanisms (r_s = -0.024, p = 0.618), which is not statistically significant. Overall, the results reveal that while several components of community fire preparedness are significantly related to community resilience, some aspects—particularly knowledge and drills—show weak or non-significant relationships, leading to a partial rejection of the null hypothesis.

The findings suggest that preparedness elements involving collective coordination and organized response systems, such as emergency coordination, have a stronger influence on Resilience compared to individual-level knowledge and training. This indicates that Resilience is more effectively developed through community-based systems and collaborative mechanisms than through awareness or drills alone. The weak, non-significant relationship between knowledge and drills suggests that having information or training alone does not necessarily translate into improved recovery or resilience outcomes unless structured systems and practical application support it. This highlights a disconnect between theoretical preparedness (knowledge) and functional Resilience (actual capacity to respond and recover), emphasizing the importance of integrating knowledge into coordinated community action.

The findings are supported by recent studies highlighting that community coordination and collective action are critical determinants of Resilience, beyond individual knowledge alone. According to the United Nations Office for Disaster Risk Reduction (2022), Resilience is strengthened when communities have organized systems and shared responsibilities that enable effective response and recovery. Similarly, World Bank (2022) emphasizes that coordinated community structures significantly improve disaster response capability and long-term recovery outcomes. Furthermore, Serrano and Perez (2025) found that communities with established coordination mechanisms and active participation demonstrate higher resilience, reinforcing the need to integrate knowledge into structured community-based systems for effective disaster risk reduction.

The results imply that efforts to enhance community resilience should go beyond increasing awareness and focus more on strengthening community coordination, response systems, and practical implementation of preparedness measures. Local authorities and disaster management agencies should prioritize building organized emergency structures, collaborative networks, and community-based response mechanisms that translate knowledge into action. Additionally, training programs should be redesigned to emphasize applied skills, simulation exercises, and real-life scenarios to ensure that knowledge and drills effectively contribute to resilience outcomes. Strengthening this integration can lead to more responsive, adaptive, and resilient communities in the face of fire-related hazards.

Table 6: Significant Relationship between community fire preparedness and community resilience

Variables		Community Adaptive Capacity	Community Response Capability	Recovery and Continuity Mechanisms	Community Awareness and Engagement
Household Readiness	r _s	0.257	0.250	0.165	0.229
	p	< .001	< .001	< .001	< .001
Knowledge And Drills	r _s	0.093	0.041	-0.024	0.043
	p	0.048	0.382	0.618	0.366
Hazard Reduction Practices	r _s	0.278	0.280	0.040	0.203
	p	< .001	< .001	0.402	< .001
Emergency Coordination	r _s	0.323	0.369	0.255	0.335
	p	< .001	< .001	< .001	< .001

Notes: Ho: There is no significant relationship between community fire preparedness and safety community resilience

P value Scale: *** p < .001 (Highly Significant); **p<0.01 (Highly Significant); *p<0.05 (Significant); p>0.05 (Not significant)

Predictors of Community Resilience

Table 7 shows the predictors of community resilience based on the independent variables included in the regression model. Among the predictors, infrastructure support emerged as the strongest predictor ($\beta = 0.405$, $p < .001$), indicating a significant positive contribution to community resilience. In contrast, hazard reduction practices showed the weakest and only negative predictive value ($\beta = -0.115$, $p < .001$), although still statistically significant. Overall, the regression model is highly significant ($F = 242$, $p < .001$) and explains 81.1% of the variance in community resilience (Adjusted $R^2 = 0.811$), indicating a strong combined predictive power of the independent variables.

The findings indicate that structural and policy-driven factors, particularly infrastructure support and risk communication, play a more dominant role in predicting community resilience compared to behavioral practices alone. The strong positive effect of infrastructure support suggests that access to functional fire safety facilities,

equipment, and systems significantly enhances a community’s ability to respond to and recover from fire incidents. Similarly, risk communication and enforcement contribute positively by strengthening awareness and compliance. Interestingly, the negative coefficient for hazard reduction practices suggests a possible suppression effect or contextual limitation, in which individual preventive behaviors alone may not translate into Resilience unless supported by broader institutional systems. This highlights that Resilience is largely shaped by system-level interventions rather than isolated household practices.

The findings are supported by recent studies emphasizing that infrastructure and institutional support are critical determinants of disaster resilience. According to the United Nations Office for Disaster Risk Reduction (2022), resilient communities rely heavily on robust infrastructure systems and governance mechanisms that enable effective response and recovery.

Similarly, the World Bank (2022) highlights that investments in disaster-resilient infrastructure significantly improve community capacity to withstand and recover from hazards. Furthermore, Proctor et al. (2019) emphasized that effective implementation of policies—including communication, enforcement, and infrastructure—enhances program outcomes and community-level Resilience, reinforcing the importance of integrating structural and policy-based interventions in disaster risk reduction strategies.

The results imply that policymakers and local authorities should prioritize investments in fire safety infrastructure and effective communication systems as key drivers of community resilience. While promoting hazard reduction practices remains important, these efforts should be integrated with institutional support, enforcement mechanisms, and accessible infrastructure to maximize their impact.

The negative predictive effect of hazard-reduction practices further underscores the need to align individual behaviors with community-wide systems, ensuring that preparedness actions are supported by enabling environments. Strengthening these areas can lead to a more comprehensive and sustainable approach to disaster resilience, where both individual and structural factors work together effectively.

Table 7: Predictors of Community Resilience

Predictors	Coef (β)	SE Coef	t- value	p-value
(Constant)	0.634	0.1081	5.87	< .001
Hazard Reduction Practices	-0.115	0.0321	-3.57	< .001
Enforcement And Penalties	0.128	0.0322	3.97	< .001
Risk Communication and Education	0.363	0.0368	9.86	< .001
Infrastructure Support	0.405	0.0228	17.78	< .001
Adjusted r ²	0.811			
F value	242			
p-value	< .001			
Community Resilience= 0.634-0.115* Hazard Reduction Practices +0.128* Enforcement And Penalties +0.363* Risk Communication and Education +0.405* Infrastructure Support				

Mediating Role of Safety Policy Implementation between Community Fire Preparedness and Community Resilience

The findings indicate that safety policy implementation serves as a dominant mediating variable in the relationship between community fire preparedness and community resilience. The strong indirect effect suggests

that preparedness alone does not directly translate into Resilience unless it is supported and reinforced by effective policy implementation mechanisms. The negative direct effect further implies suppression or inconsistent mediation, in which the direct influence of preparedness becomes less effective—or even counterproductive—when it is not aligned with institutional systems.

This highlights that Resilience is not solely driven by individual or community-level preparedness but is largely shaped by how policies are implemented, enforced, and operationalized within the community. Thus, the implementation of safety policies serves as a critical bridge, transforming preparedness efforts into meaningful resilience outcomes.

The findings are supported by recent studies emphasizing that policy implementation plays a crucial mediating role in achieving disaster resilience outcomes. According to the United Nations Office for Disaster Risk Reduction (2022), effective governance and policy enforcement are fundamental in transforming preparedness into actual Resilience at the community level. Similarly, the World Bank (2022) highlights that institutional mechanisms and regulatory systems significantly enhance the effectiveness of disaster preparedness efforts. Furthermore, Hayes (2022) explains that mediation analysis reveals how intervening variables, such as policy implementation, explain the mechanism through which independent variables influence outcomes, reinforcing the importance of strengthening implementation systems to achieve meaningful and sustainable Resilience in communities.

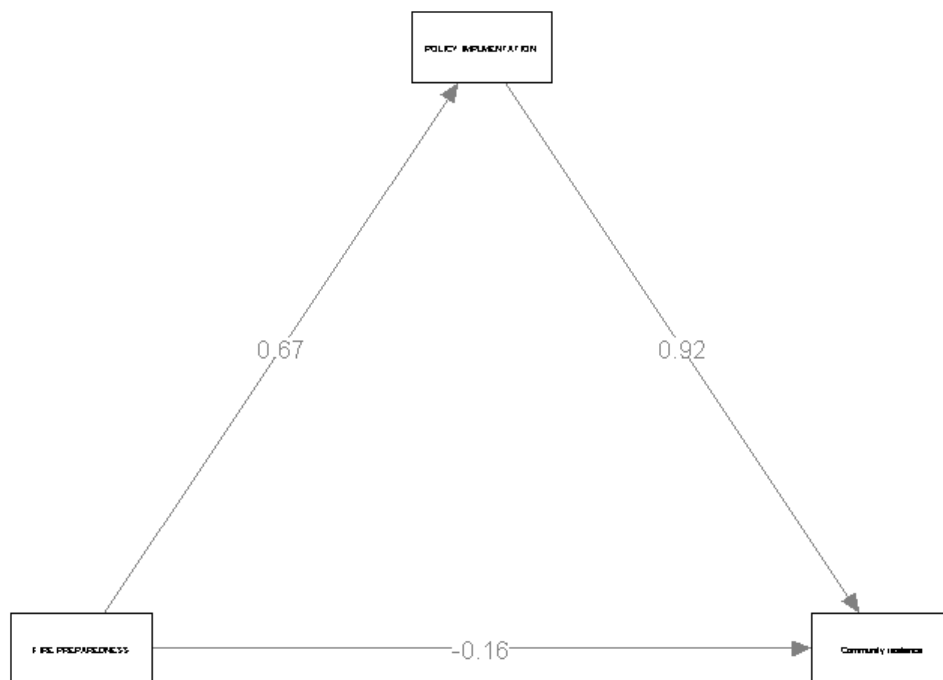
The results imply that enhancing community resilience requires prioritizing strong and consistent safety policy implementation as a central mechanism for translating preparedness into effective outcomes. Policymakers, local government units, and fire authorities should focus on strengthening inspection systems, enforcement strategies, risk communication, and infrastructure support, as these elements amplify the impact of preparedness initiatives. Additionally, interventions should aim to integrate community preparedness programs with institutional policies to ensure alignment and sustainability.

Without effective policy implementation, preparedness efforts may remain fragmented and insufficient, limiting their contribution to Resilience. Therefore, a policy-driven approach is essential to maximize the benefits of community fire preparedness.

Table 8: Mediation Analysis on the role of safety policy implementation in the Relationship between community fire preparedness and community resilience

Effect	Label Estimate	SE	95% Confidence Interval		Z	p	% Mediation		
			Lower	Upper					
Indirect	a x b	0.609	0.0633	0.4857	0.7327	9.62	<.001	79.30	
Direct	C	-0.159	0.0371	-0.231	-0.0861	-4.28	<.001	20.70	
Total	c+ a x b	0.450	0.0699	0.313	0.5869	6.44	<.001	100.0	
Path Estimates									
FIRE PREPAREDNESS	→	POLICY IMPLEMENTATION	A	0.665	0.0669	0.534	0.7963	9.93	<.001

POLICY IMPLMENTATION	→	Community resilience	B	0.915	0.0236	0.869	0.9616	38.73	<.001	
FIRE PREPAREDNESS	→	Community resilience	C	-0.159	0.0371	-0.231	-0.0861	-4.28	<.001	



The mediation model shows that fire preparedness has a strong positive effect on policy implementation ($\beta = 0.67$), indicating that higher preparedness levels are associated with better implementation of fire safety policies. In turn, policy implementation has a very strong positive effect on community resilience ($\beta = 0.92$), suggesting that effective policies significantly enhance the community’s ability to respond to and recover from fire incidents. However, the direct effect of fire preparedness on community resilience is negative ($\beta = -0.16$), indicating that preparedness alone does not directly lead to Resilience and may even have a weak inverse relationship when policy implementation is not considered.

These results suggest full or partial mediation, with policy implementation as the primary pathway through which fire preparedness influences community resilience. This implies that preparedness efforts must be supported by strong policy enforcement, communication, and infrastructure to translate into meaningful resilience outcomes.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

This study aimed to examine the relationship between community fire preparedness, safety policy implementation, and community resilience in selected barangays. Specifically, it sought to determine the level of community fire preparedness across household readiness, knowledge, and drills, hazard-reduction practices, and emergency coordination. It also assessed the level of safety policy implementation across inspection and permitting, enforcement and penalties, risk communication and education, and infrastructure support.

Furthermore, the study evaluated the level of community resilience based on community adaptive capacity, response capability, recovery and continuity mechanisms, and community awareness and engagement.

In addition, the study investigated significant relationships among the key variables, including those between community fire preparedness and safety policy implementation, safety policy implementation and community resilience, and community fire preparedness and community resilience. It also identified which independent variables significantly predict community resilience, both individually and in combination. Lastly, the study examined whether the implementation of safety policies significantly mediates the relationship between community fire preparedness and community resilience.

The study utilized a quantitative research design, specifically employing a descriptive-correlational and predictive approach. Data were collected from respondents in selected barangays using a structured survey questionnaire adapted to measure the variables of interest. Statistical tools such as the mean and standard deviation were used to determine variable levels, while Spearman's rho correlation analysis was used to test relationships. Multiple regression analysis was used to identify predictors of community resilience, and mediation analysis was conducted to determine the mediating role of safety policy implementation.

FINDINGS

1. The selected barangays demonstrated a high level of community fire preparedness, with hazard reduction practices as the strongest indicator, while household readiness showed comparatively lower levels, indicating areas for improvement.
2. The level of safety policy implementation in the selected barangays was high, with enforcement and penalties as the most evident practice, while inspection and permitting showed relatively lower implementation.
3. The selected barangays exhibited a high level of community resilience, with recovery and continuity mechanisms rated highest, while community awareness and engagement were comparatively lower.
4. There was a significant relationship between community fire preparedness and the implementation of safety policies, particularly in emergency coordination and hazard reduction practices.
5. There was a strong, significant relationship between safety policy implementation and community resilience, especially in risk communication and education, as well as in infrastructure support.
6. There was a partial significant relationship between community fire preparedness and community resilience, with emergency coordination showing the strongest association, while knowledge and drills showed weak or non-significant relationships.
7. Infrastructure support, risk communication and education, and enforcement and penalties significantly predicted community resilience, while hazard reduction practices showed a negative predictive influence.
8. Safety policy implementation significantly mediated the relationship between community fire preparedness and community resilience, indicating that preparedness contributes to resilience primarily through effective policy implementation.

Conclusion

1. The selected barangays demonstrate a generally high level of community fire preparedness; however, strengthening household readiness is essential to ensure a more comprehensive and balanced preparedness system.
2. Safety policy implementation is effectively practiced in the selected barangays, particularly in enforcement mechanisms, but improvements in inspection and permitting are necessary to ensure consistent compliance and preventive measures.

3. The communities exhibit high resilience, supported by strong recovery and continuity mechanisms; however, enhancing community awareness and engagement is crucial to sustain long-term resilience.
4. A significant relationship exists between community fire preparedness and the implementation of safety policies, indicating that preparedness efforts are closely linked to the effectiveness of policy enforcement and governance.
5. Safety policy implementation strongly influences community resilience, underscoring the importance of structured policies, communication strategies, and infrastructure in strengthening adaptive and response capacities.
6. The relationship between community fire preparedness and community resilience is partially significant, suggesting that preparedness alone is insufficient without effective coordination and system support.
7. Infrastructure support, risk communication, and enforcement mechanisms are key determinants of community resilience, emphasizing the importance of institutional and structural interventions over isolated individual practices.
8. Safety policy implementation plays a critical mediating role in linking community fire preparedness to resilience, indicating that effective policies serve as the mechanism through which preparedness translates into meaningful resilience outcomes.

Recommendations

Based on the findings and conclusions of the study, the following recommendations are offered:

1. Local Government Units (LGUs), city and municipal governments, and barangay officials should institutionalize a comprehensive fire safety governance program that strengthens routine inspection, permitting compliance, and barangay-level monitoring systems. Since inspection and permitting obtained comparatively lower results, preventive regulatory mechanisms must be enhanced through scheduled inspections, digital permit tracking, and stronger inter-agency coordination with the Bureau of Fire Protection.
2. The Bureau of Fire Protection (BFP) and disaster management agencies should prioritize community-based risk communication, fire safety education, and simulation programs. As risk communication and education were found to strongly influence resilience, sustained public campaigns, household orientations, evacuation drills, and localized warning systems should be regularly implemented in vulnerable barangays.
3. National and local policymakers should increase investments in fire safety infrastructure, including hydrants, firefighting equipment, emergency access routes, alarm systems, evacuation centers, and water supply systems. Since infrastructure support emerged as one of the strongest predictors of community resilience, strengthening structural capacity should be considered a major priority in local development planning.
4. Barangay Disaster Risk Reduction and Management Councils (BDRRMCs) should establish organized community response systems, including volunteer brigades, fire wardens, communication teams, and neighborhood emergency networks. Strengthening emergency coordination can improve response capability and ensure faster, more organized action during fire incidents.
5. Community residents and homeowners' associations should be encouraged to improve household readiness by acquiring basic fire safety devices such as extinguishers, smoke alarms, emergency kits, and safe electrical systems. Since household readiness obtained the lowest preparedness rating, targeted subsidy programs, installment schemes, or community purchasing programs may be introduced to make safety equipment more affordable.

6. Schools, colleges, and universities should integrate fire preparedness, disaster resilience, and safety governance concepts into academic instruction, extension programs, and student training activities. Building students' fire safety awareness can help foster a long-term preparedness culture within households and communities.
7. Civil society organizations, private sector partners, and NGOs should collaborate with LGUs and BFPs to conduct capacity-building programs, awareness drives, and resource mobilization for vulnerable communities. Public-private partnerships may help expand the reach of resilience programs and improve access to equipment and training.
8. Regional and national government agencies should formulate an integrated fire resilience framework that links preparedness initiatives, policy implementation systems, and community resilience indicators. This framework may serve as a model for cities and municipalities nationwide in strengthening evidence-based fire risk governance.
9. Future researchers are encouraged to replicate the study in other cities or provinces and examine additional variables such as socio-economic status, leadership effectiveness, technological readiness, and climate-related hazards. Longitudinal, mixed-method, or comparative studies are also recommended to validate and extend the present findings.

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DEDICATION

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Appendix A

Community Fire Preparedness Questionnaire

This questionnaire aims to gather information on community fire preparedness, safety policy implementation, and community resilience in selected barangays. Your responses will help provide valuable data to assess fire safety conditions and improve community-based programs.

There are no right or wrong answers—please respond honestly based on your experience and knowledge. Your identity will not be recorded, and all information will remain confidential.

Please put a **check mark (✓)** inside the box that best represents your level of agreement using the scale below:

Scale	Meaning
<input type="checkbox"/> 4	Strongly Agree
<input type="checkbox"/> 3	Agree
<input type="checkbox"/> 2	Disagree
<input type="checkbox"/> 1	Strongly Disagree

Household Readiness

No.	Statement	4	3	2	1
1.	Our household has at least one functional fire extinguisher.				
2.	Smoke alarms or early warning devices are installed and working properly.				
3.	Our electrical wiring is properly installed and regularly checked by licensed personnel.				
4.	Circuit breakers and outlets are not overloaded.				
5.	LPG tanks are properly installed and regularly checked for leaks.				
6.	Flammable liquids are stored away from heat sources.				
7.	We have a designated fire exit route inside the home.				
8.	Fire safety equipment is maintained regularly.				
9.	Emergency lighting (flashlights or battery lights) is accessible.				
10.	Family members know where fire safety equipment is located.				

Knowledge and Drills

No.	Statement	4	3	2	1
1.	I know the emergency fire hotline in my area.				
2.	We have discussed fire emergency procedures at home.				
3.	We have identified a safe evacuation area outside our house.				
4.	Family members know how to operate a fire extinguisher.				
5.	I have participated in fire drills in the community, school, or workplace.				
6.	We practice evacuation procedures at least once a year.				
7.	I know how to prevent electrical fires.				

8.	I know how to prevent cooking-related fires.				
9.	I know how to help vulnerable household members during fire emergencies.				
10.	I feel confident responding during a fire emergency.				

Hazard Reduction Practices

No.	Statement	4	3	2	1
1.	Flammable materials are stored properly and safely.				
2.	Electrical cords and appliances are kept in safe condition.				
3.	Gas tanks and stoves are safely placed in ventilated areas.				
4.	There are no obstructions blocking exits and pathways.				
5.	Matches, lighters, and candles are stored safely.				
6.	Smoking materials are disposed of safely.				
7.	We avoid illegal electrical connections.				
8.	Appliances are inspected regularly for damage or overheating.				
9.	Multiple high-voltage appliances are not plugged into one outlet.				
10.	Appliances are unplugged when not in use.				

Emergency Coordination

No.	Statement	4	3	2	1
1.	Our barangay has designated fire wardens or safety personnel.				
2.	Emergency communication channels are available and used.				
3.	We know where the nearest fire station is located.				
4.	We know who to contact in the barangay during fire emergencies.				
5.	Residents receive safety announcements or advisories.				
6.	Fire safety drills are organized in the barangay.				
7.	Households participate in emergency coordination activities.				
8.	Neighbors help one another during emergencies.				

9.	There are shared community firefighting tools (extinguishers, hoses).				
10.	I believe community coordination improves fire response.				

Appendix B

Safety Policy Implementation Questionnaire

Direction: Please put a **check mark (✓)** inside the box that best represents your level of agreement using the scale below:

Scale	Meaning
<input type="checkbox"/> 4	Strongly Agree
<input type="checkbox"/> 3	Agree
<input type="checkbox"/> 2	Disagree
<input type="checkbox"/> 1	Strongly Disagree

Inspection and Permitting

No.	Statement	4	3	2	1
1.	Fire inspections are conducted regularly in the community.				
2.	Fire safety compliance is required before issuing permits.				
3.	Electrical safety inspections are properly conducted.				
4.	Businesses are required to secure a Fire Safety Inspection Certificate.				
5.	Inspection procedures follow national standards.				
6.	Inspection results are documented and monitored.				
7.	Unsafe structures are required to make corrections.				
8.	Follow-up inspections are conducted when needed.				
9.	Inspections are implemented without favoritism.				
10.	Inspection schedules are adhered to consistently.				

Enforcement and Penalties

No.	Statement	4	3	2	1
1.	Fire safety violations are addressed immediately.				
2.	Penalties are applied fairly and consistently.				
3.	Compliance with fire safety laws is strictly monitored.				
4.	Repeat violators receive stronger enforcement actions.				
5.	Businesses are not allowed to operate without compliance.				
6.	Written warnings are issued when necessary.				
7.	Violators are informed of the reasons for penalties.				
8.	Barangay coordinates with BFP for enforcement decisions.				

9.	Enforcement is free from political influence.				
10.	Enforcement improves compliance in the community.				

Risk Communication and Education

No.	Statement	4	3	2	1
1.	Fire safety orientations are conducted regularly.				
2.	Safety signages and posters are displayed in public spaces.				
3.	Fire safety campaigns are implemented annually.				
4.	Residents receive timely fire-related information.				
5.	Schools and businesses participate in safety education.				
6.	Safety instructions are clear and easy to understand.				
7.	Digital platforms are used for safety announcements.				
8.	Residents are encouraged to learn about fire hazards.				
9.	Training opportunities are made available to residents.				
10.	Risk communication increases preparedness in the community.				

Infrastructure Support

No.	Statement	4	3	2	1
1.	Fire hydrants are present and functional.				
2.	Roads allow firetruck access.				
3.	Warning systems are available (sirens, bells, alarms).				
4.	Barangay facilities have fire extinguishers.				
5.	Firefighting equipment is regularly checked.				
6.	Water sources are available during emergencies.				
7.	Emergency signage is visible and readable.				
8.	Fire station or responders are accessible nearby.				
9.	Firefighting equipment is well maintained.				
10.	Infrastructure supports fast and effective response.				

Appendix C

Community Resilience Questionnaire

Direction: Please put a **check mark (✓)** inside the box that best represents your level of agreement using the scale below:

Scale	Meaning
<input type="checkbox"/> 4	Strongly Agree
<input type="checkbox"/> 3	Agree
<input type="checkbox"/> 2	Disagree
<input type="checkbox"/> 1	Strongly Disagree

Community Adaptive Capacity

No.	Statement	4	3	2	1
1.	The community adjusts fire safety strategies based on previous hazards.				
2.	Residents adopt safer practices after learning from fire incidents.				
3.	There are programs that help households improve disaster readiness.				
4.	Households update fire safety measures regularly.				
5.	Residents learn from local and national fire incidents.				
6.	The barangay updates its disaster plans when needed.				
7.	Training programs help the community adapt to risks.				
8.	Fire safety practices improve as new risks emerge.				
9.	The community adopts new preventive technologies or methods.				
10.	The community actively seeks improvements in fire safety.				

Community Response Capability

No.	Statement	4	3	2	1
1.	The community can respond quickly during fire emergencies.				
2.	Fire responders are notified immediately when a fire occurs.				
3.	Residents know how to help without causing additional risk.				
4.	Emergency procedures are clear to residents.				
5.	Response systems minimize confusion during emergencies.				
6.	Barangay officials coordinate smoothly during fire response.				
7.	Residents know evacuation routes and safe zones.				
8.	Fire response has improved over recent years.				
9.	Emergency medical assistance is accessible after fire incidents.				
10.	The community is confident in its ability to respond to fires.				

Recovery and Continuity Mechanisms

No.	Statement	4	3	2	1
1.	Assistance is available for affected households after fire incidents.				
2.	Psychosocial or emotional support is offered when needed.				
3.	The barangay assists in rebuilding damaged infrastructure.				
4.	Community programs support recovery of livelihood after fire incidents.				
5.	Recovery plans are part of the barangay disaster system.				
6.	Affected families receive clear guidance after fire events.				

7.	Local government provides aid or coordination for long-term recovery.				
8.	Rehabilitation plans are evaluated and improved over time.				
9.	The community supports collective rebuilding after fires.				
10.	Recovery programs help restore normal life as fast as possible.				

Community Awareness and Engagement

No.	Statement	4	3	2	1
1.	Residents are informed about community fire risks.				
2.	The community participates in fire safety programs.				
3.	Residents are involved in safety decision-making.				
4.	Fire safety information is communicated clearly and regularly.				
5.	Residents actively report fire hazards.				
6.	The barangay encourages volunteerism in fire safety efforts.				
7.	Awareness programs are accessible to all community members.				
8.	Fire risk reduction is discussed during community meetings.				
9.	Residents feel responsible for maintaining community safety.				
10.	The community values continuous learning about fire safety.				

Appendix D



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Name of the Researcher/Investigator

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Course: Master of Science in Criminal Justice

College: Graduate School

Email / Contact Number: 09269686424

Thesis Title: “The Mediating Role of Safety Policy Implementation Between Community Fire Preparedness and Resilience”

Part I. Information Sheet

Introduction (Pasiuna)	Good day! I am Kristen C. Agbalog, the principal researcher/investigator of the study entitled “The Mediating Role of Safety Policy Implementation Between Community Fire Preparedness and Resilience.” I am a graduate student under the program, Master
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	<p>of Science in Criminal Justice Education at Misamis University in Ozamiz City. I am to conduct the research with 450 respondents as participant. In this vein, I am respectfully seeking your voluntary participation, being qualified to give your informed consent to take part in this study. Before you decide whether to participate or not in this study, please read the succeeding information about the study and feel free to ask questions anytime should there be anything you do not understand or want to clarify. If you agree to answer the interview, you will be asked to affix your name and signature on this form for which you will be given a copy.</p> <p>(Maayong adlaw! Ako si Kristen C. Agbalog , ang nagpahigayon sa pagtuon kabahin sa “The Mediating Role of Safety Policy Implementation Between Community Fire Preparedness and Resilience.” Ako usa ka estudyante sa Master of Science in Criminal Justice Education sa Misamis University sa Ozamiz City. Ako nagapili kanimo isip isa sa mga participant nga maoy mutubag sa gikinahagnglang impormasyon niining gihimong pagtuon. Ako matinahurong naghangyo sa inyong bulontaryo nga pag-apil niini nga pagtuon. Gikinahanglan nga ikaw naa sa saktong edad ug naay kakayahan nga mohatag sa pagtugot aron makaapil niini nga pagtuon. Sa dili pa ka mohukom sa pag-apil niini nga interview, palihug sa pagbasa sa mga impormasyon sa ubos ug gawasonon ka nga makapangutana kon adunay wala nimo nasabtan o gusto nimong iklaro. Kung motugot ka sa pagahimoon nga interview, papirmahon ka niini nga porma ug tagaan usab ka ug imong kaugalingong kopya.</p>
<p>Purpose (Katuyoan)</p>	<p>The purpose of this study is to know the mediating effect of the implementation of safety policies on the correlation between community fire preparedness and community resilience within certain barangays of Iligan City. This research is geared toward determining the level of fire preparedness, implementation of safety policies, and community resilience on certain criteria. Another objective of this study is to determine the correlation between these variables and to find out how safety policies mediate their association.</p> <p>(Ang katuyuan niini nga pagtuon mao ang pagsusi sa papel sa implementasyon sa mga polisiya sa kaluwasan isip usa ka mediating factor sa relasyon tali sa kaandam sa komunidad sa sunog ug sa kalig-on sa komunidad sa piniling mga barangay sa Iligan City. Gituyo usab niini ang pagtino sa lebel sa community fire preparedness, implementasyon sa safety policies, ug community resilience sumala sa nagkalain-laing mga sukdanan. Dugang pa, gitinguha sa pagtuon ang pag-ila sa relasyon sa maong mga baryabol ug pagsabot kung giunsa sa mga polisiya sa kaluwasan pagpalig-on o paghulma sa ilang koneksyon</p>
<p>Type of Research Intervention (Matang sa Interbensyon sa Pagtuon)</p>	<p>This study will be conducted through answering survey questionnaires personally given by the researcher. The gathering of data will be conducted in person.</p> <p>(Kining pagtuon pagabuhaton pinaagi sa pag tubag sa survey questionnaire. Personal ang pagkuha sa datos.)</p>
<p>Selection of Participants (Pagpili sa mga Partisipant)</p>	<p>The selection of the participants is based on the following inclusion criteria: Only individuals aged 18 years old and above residing in fire-affected households were considered eligible to participate. Any adult member from the household was allowed to answer the questionnaire, provided they had direct awareness and experience of the fire event and the subsequent preparedness or recovery activities undertaken by the household.</p> <p>(Ang mga partisipante niini nga pagtuon mao ang indibidwal nga naga-angkon sa mosunod: Ang mga indibidwal lamang nga may edad 18 anyos pataas nga nagpuyo</p>

	<p>sa mga panimalay nga naapektuhan sa sunog ang giisip nga kwalipikado sa pag-apil. Bisan kinsa nga hamtong nga miyembro sa panimalay gitugotan sa pagtubag sa questionnaire, basta adunay direkta nga kahibalo ug kasinatian sa insidente sa sunog ug sa mga kalihokan sa pagpangandam o pagbangon nga gihimo sa ilang panimalay.)</p>
<p>Voluntary Participation (Boluntaryo nga Partisipasyon)</p>	<p>Your participation has to be voluntary and will not affect your situation or status in any way, including your relationship with the researcher. You are free to decide if you will take part or not. If you decide to participate, you are free not to answer any questions that you do not prefer to answer.</p> <p>(Boluntaryo ang imong pag-apil ug kini dili makaapekto sa imong sitwasyon o estado apil na imong relasyon sa nagtuon. Gawasnon ka nga modesisyon kung kung moapil ka niini nga pagtoon o dili. Kung mo-desisyon ka nga moapil, gawasnon ka nga dili motubag sa bisan asa nga pangutana nga dili nimo gusto nga tubagon.)</p>
<p>Procedure (Pamaagi)</p>	<p>The participants will be given ample time when to undertake the interview. The interviews will be undertaken once or several times when necessary. The researcher will transcribe the interviews to be used for the analysis of the data. The information and data provided by you as a participant will be utilized for this study alone and will be treated with the utmost confidentiality.</p> <p>(Ang mga partisipante pagahatagan og igong panahon sa pag-apil sa interview. Ang interview pwedeng himoon kausa nga higayon o sa makadaghan depende sa panginanghalanon. Isulat sa nagtuon ang interviews para sa pag-analisa sa datos. Ang mga impormasyon ug datos nga nakuha gikan kanimo isip ka partisipante gamiton lamang niining research og hatagan og tumang pag-amping nga dili mabutyag.)</p>
<p>Duration (Gidugayon)</p>	<p>The gathering of data through the interview will last for 45 minutes to 1 hour.</p> <p>(Ang pagkuha sa datos pinaagi sa interview mokabat ngadto sa 45 ka minute hangtod 1 ka oras)</p>
<p>Risks and Discomforts (Risiko ug Kahasol)</p>	<p>The respondents will be protected from physical, social, or economic risks. In case the items in the survey instrument are too personal and make you feel uncomfortable, you may decline to answer any or all questions and may terminate your involvement at any time you choose.</p> <p>(Ang mga partisipante ginaprotektahan sa pisikal, sosyal o ekonomikanhong risiko. Kung panaglitan adunay mga pangutana nga personal ra kaayo o kung dili ka komportable, mamahimong dili ka motubag o mobalibad sa pagtubag sa bisan asa o sa tanang mga pangutana ug moatras sa pag-apil sa bisan unsang panahon nga imong gusto.)</p>
<p>Benefits (Kaayohan)</p>	<p>This study will enable you to shed light or provide understanding about helping the community to be more prepared and resilient against fires, and helps in studying the importance of safety policy development for community resilience. Thus, your responses shall be highly valued being deemed important in the field of safety awareness, education and welfare of the community.</p> <p>(Kini nga pagtuon makapahimo kanimo paghatag og katin-awan o pagpasabot kabahin sa Nagatabang sa komunidad nga mahimong mas andam ug lig-on batok sa mga sunog, ug nagtabang sa pagtuon sa kahinungdanon sa pag-develop sa mga polisiya sa</p>

	<p>kaluwasan alang sa kalig-on sa komunidad.. Ang imong mga tubag hatagan og dakong bili nga giisip nga importante sa linya sa kaluwasan sa komunidad, edukasyon, ug kaayohan sa komunidad. .)</p>
<p>Reimbursements (Hulip nga bayad)</p>	<p>There will be no monetary expenses or costs on your part as a respondent, nor any monetary compensation for your participation in this study. However, personal protective equipment (PPE) like face masks, alcohol and face shields may be provided during the gathering of the research data.</p> <p>(Wala kay magasto sa imong pag-apil niini nga pagtuon ug dili usab ka bayaran ug kwarta sa imong pag-apil niini nga pagtuon. Apan adunay nga personal protective equipment (PPE) sama sa face masks, alcohol ug face shields nga pwede nga mahatag sa panahon sa pagkuha sa mga datos)</p>
<p>Confidentiality of Data (Pag-amping sa Datos)</p>	<p>Only the researcher will have access to the information and responses of the participants. The personal identifying information of the participants will only be used for research analysis and will be treated with the utmost confidentiality. During the study, all data will be kept in a locked, secure filing cabinet, of which will be discarded 6 months after the publication of the results.</p> <p>(Ang nagtuon lamang ang makakita sa mga impormasyon ug tubag sa respondents. Ang mga datos nga makuha i-analisa ug hatagan og tumang pag-amping aron dili ibutyag. Sa panahon sa pagtuon, ipahimutang sa usa ka selyadong filing cabinet ang tanang datos nga pagagub-on human sa 6 kabulan gikan sa pag-publish sa resulta.)</p>
<p>Sharing of Findings (Pagpaambit sa Nakaplagnan)</p>	<p>The results of this study will be presented during the thesis/dissertation final defense of the researcher. Also, the research findings may be shared through publications and conferences with the assurance that the identities of the respondents will remain confidential. A printed copy of the completed study will be provided to the participants.</p> <p>(Ang mga resulta niini nga pagtuon ipresenta sa panahon sa final defense sa thesis/dissertation sa nagtuon. Ang mga nakaplagnan sa pagtuon posible nga ipaambit pinaagi sa mga publications ug conferences nga adunay kapanigurohan nga dili mabutyag ang pagkatawo sa mga partisipante. Pagahatagan og isa ka giimprinta nga kopya sa kumpleto nga pagtuon ang mga partisipante.)</p>
<p>Rights to Refuse or Withdraw (Katungod sa Pagpalibabad o Pag-undang)</p>	<p>You are free to withdraw or terminate participation at any stage of the study, without the need to give any reason. You will not be penalized in case of termination of participation.</p> <p>(Gawasnon ka nga moatras or moundang sa pag-apil sa bisan asa nga punto sa pagtuon nga dili na magkinahanglan pa ug rason. Dili ka ipamulta sa pag-atras o pag-undang.)</p>
<p>Who to Contact (Kinsa ang Kontakon)</p>	<p>Should there be any queries as a parent, you can contact the researcher through the following details:</p> <p>(Kung adunay mga pangutana, mamhimo nga mokontak pinaagi aning mga detalye:)</p> <p>Name of the Researcher (Ngalan sa Nagtuon): <u>Kristen C. Agbalog</u></p> <p>Cellphone Number/s: <u>09269686424</u></p> <p>e-mail ad:<u>agbalogkristen100618@gmail.com</u></p> <p>Statement By The Researcher (Pagpadayag Sa Nagtuon)</p>

	<p>I will read the Information sheet to the potential participant. With the best of my ability, I make sure that the participant will understand the interview questions and that possible follow-up interviews may be undertaken.</p> <p>(Akong pagabasahon ang mga nasulat niining Information Sheet ngadto sa potensyal nga partisipante. Kutob sa akong mahimo siguroon nako nga masabtan sa partisipante ang mga pangutana sa interview ug ang possible nga follow-up nga interviews.)</p> <p>I can assure that the participant will be given an opportunity to ask questions about the study, and all the questions raised will be answered fully. I can likewise assure that the participant will not be coerced into giving consent that must be free and voluntary.</p> <p>(Gisiguro ko nga ang partisipante mahatagan og panahon sa pagpangutana kabahin niining pagtuon og ang tanang pangutana nga iyang gihatag matubag sa hingpit. Siguroon ko usab ang maong partisipante dili mapugos sa paghatag sa pagtugot nga kinahanglan nga gawasnon og boluntaryo.)</p> <p>A copy of this Informed Consent Form will be provided to the participant.</p> <p>(Ang kopya sa niining Informed Consent Form ihatag ngadto sa respondent.)</p> <p>Print Name of Researcher (Ngalan sa Nagtuon): _____</p>
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PART II. CERTIFICATE OF CONSENT

This research entitled “The Mediating Role of Safety Policy Implementation Between Community Fire Preparedness and Resilience” by Kristen C. Agbalog, with the aim of gathering information and data pertaining to the impact of policy implementation on the community preparedness and resilience, has been presented and explained to me clearly. Since the study involves assessing the experiences, perspectives and well-being of individuals affected by fire. I am chosen as one of the participants.

(Kini nga pagtuon gititulohan, “ The Mediating Role of Safety Policy Implementation Between Community Fire Preparedness and Resilience”ni Kristen C. Agbalog nga adunay tumong sa pagkuha og impormasyon ug datos kabahin sa epekto sa implementasyon sa polisiya sa kaandam ug kalig-on sa komunidad., gipresenta ug gipasabot og klaro kanako. Tungod kay ang pagtuon kay kabahin sa Pagsusi sa kasinatian, opinyon, ug kahimtang sa panglawas ug kaayohan sa mga indibidwal nga naapektuhan sa sunog., ako napilian isip usa sa mga partisipante.

I have read the foregoing Informed Consent Form, or it has been read to me. I had the opportunity to ask questions, which were subsequently answered fully. I consent voluntarily to be a participant of this study.

(Akong nabasa ang nauna nga Informed Consent Form, o gibasa kini kanako. Natagaan ako og higayon nga makapangutana nga natubag sa hingpit. Ako mosugot nga boluntaryo nga mahimong participant sa niining pagtuon.)

Print Name of Participant (Ngalan sa Partisipante): _____

Signature of Participant (Pirma sa Partisipante): _____

Date: [MM/DD/YYYY] _____

If Illiterate (Kung dili makasulat ug makabasa)

If the respondent is illiterate, a witness who is literate will sign. The respondent will choose him/her and who is without connection with the researcher or the research group to attest this undertaking. The respondent will affix his thumb print.

[Kung ang participant kay dili makabasa o makasulat, mopirma ang usa ka makabasa ug makasulat nga testigo. Ang respondent ang mopili kaniya nga walay koneksyon sa nagtuon o sa iyang grupo para mopamatuod sa gimbuhaton. Ang respondent mobutang sa iyang tamla (thumb print)].

Name and Signature of the Witness

(Ngalan ug Pirma sa Testigo)

CURRICULUM VITAE



PERSONAL DATA

Name : Kristen C. Agbalog
Age : 27 y/o
Birthdate : October 6, 1998
Civil Status : Single
Religion : Roman Catholic
Home Address : Prk. 5 Bliss, Buru-un, Iligan City
Parents : Mr. Joel R. Agbalog
Mrs. Zosima C. Agbalog

EDUCATION

Graduate : Master of Science in Criminal Justice
Misamis University, Ozamiz City
March 2026
College : Bachelor in Criminology
Iligan Capitol College
Iligan City
May 2021
Secondary : Our Lady of Perpetual Help Academy
Linamon, Lanao del Norte
March 2015
Elementary : Sgt. Miguel Canoy Memorial Central School
Buru-un, Iligan City
March 2010

PROFESSIONAL ELIGIBILITY : Professional Licensure Examination for
Criminologist
December 2021

WORK EXPERIENCE

August 2023- Present : Instructor
Iligan Capitol College
Mahayahay, Iligan City

SEMINARS/TRAININGS

- 4th International Conference on Biodiversity and Climate Change 2025: Theme “Sustainable Peace with Nature: A Global Commitment towards Net Zero”
September 25-26, 2025
- Public Orientation: Code of Ethical and Professional Conduct of Philippine Registered Criminologists and Juridical Practice of the Criminology Professions at Grand Caprice Restaurant Address: Lim Ket Kai Complex, Cagayan de Oro City
March 19-26, 2025
- Faculty Evaluation on Teaching Methodology and Training Workshop on Reading Materials Preparation at Christ the King College de Maranding, Inc.
July 19, 2024
- Faculty Evaluation on Teaching Methodology and Training Workshop on Reading Materials Preparation at Saint Michael’s College of Iligan, Inc.
June 29, 2024
- Professional Criminologist Association of the Philippines (PCAP) Misamis Occidental Chapter Cybercrime Investigation at Misamis University
December 9-10, 2023