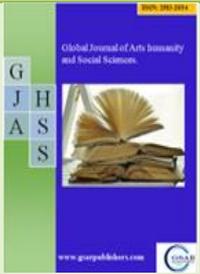


	Global Journal of Arts Humanity and Social Sciences			
	ISSN: 2583-2034			
	Abbreviated key title: Glob.J.Arts.Humanit.Soc.Sci			
	Frequency: Monthly			
	Published By GSAR Publishers			
Journal Homepage Link: https://gsarpublishers.com/journal-gjahss-home/				
Volume - 5	Issue - 6	June 2025	Total pages 480-485	DOI: 10.5281/zenodo.15619066

LEVEL OF AWARENESS ON FIRE PREVENTION AMONG BUSINESS OWNERS IN NORTHERN PHILIPPINES: IMPLICATIONS FOR FIRE SAFETY AND REGULATORY COMPLIANCE

By

Jennifer C. Bancud

Criminology Department School of Education, Criminology, Arts and Psychology University of Saint Louis Tuguegarao Tuguegarao City, Philippines



Abstract

Focusing on fire safety protection and firefighting techniques, this study sought to evaluate the degree of awareness of business owners in the Northern Philippines about fire prevention actions. Surveying 80 business establishment owners to evaluate their understanding of the criteria for renewing business permits and their awareness of fire safety practices, the study employed a descriptive and evaluative approach. The results showed that business owners were well aware of necessary fire safety precautions, including the supply of fire extinguishing equipment, fire extinguishers, and understanding of emergency evacuation protocols. The respondents' degree of knowledge of fire safety and firefighting methods showed no notable relationship, however, with their demographic traits—such as age, gender, educational level, years of business operation, and type of business. To create a more fire-conscious society, the study emphasizes the need of ongoing and extensive fire safety education for all business owners, regardless of their history or the size of their company. Moreover, it emphasizes the requirement of improving fire safety standard regulatory compliance as part of the business permit renewal procedure. Local government units and fire safety agencies need the outcomes to create and carry out more efficient fire prevention campaigns and rules to protect properties and lives.

Keywords: fire prevention, business owners, fire safety protection, firefighting procedures, awareness, business permit renewal, Northern Philippines, fire safety education, regulatory compliance

Article History

Received: 25- 05- 2025
Accepted: 03- 06- 2025
Published: 05- 06- 2025

Corresponding author
Jennifer C. Bancud

INTRODUCTION

In an increasingly globalized world, ensuring fire safety protection among business establishment owners is paramount to safeguarding lives, property, and economic stability. Across international settings, businesses serve as vital components of communities, driving innovation, employment, and economic growth (Hasan, et al., 2024). However, with this prominence comes the responsibility to mitigate risks, particularly those associated with fire hazards. Whether in bustling urban centers or remote rural areas, the threat of fire looms large, capable of causing devastating consequences for individuals, families, and entire communities.

Fire safety protection is a critical concern for business establishment owners across the Philippines (Magon & Imbang, 2022; Pintac, et al., 2021). With the potential for devastating consequences to both lives and properties, the importance of implementing robust fire safety measures cannot be overstated. In a country prone to various hazards such as electrical faults, arson, and natural calamities like typhoons, ensuring adequate fire safety protocols is paramount. Moreover, compliance with national fire safety regulations, such as the Fire Code of the Philippines, is not just a legal requirement but also a moral obligation to safeguard employees, customers, and assets (Lagata, et al., 2022).



The Fire Code of the Philippines states "the government shall develop and promulgate sets of standards and regulations, in collaboration with the private sector, taking into consideration the most recent developments in fire prevention and suppression technology." The Fire Code is effective immediately. In addition, the Congress passed the Republic Act No. 9514, also known as the Fire Code of the Philippines of 2008, on December 19, 2008. It is a law that establishes a comprehensive fire code for the Philippines and repeals Presidential Decree No. 1185, which was passed in 2011. Ensure public safety, promote economic development, and professionalize the fire service as a profession. This is accomplished through the prevention and suppression of destructive fires of all kinds, as well as through the professionalization of the fire service as a profession. To achieve this goal, the state shall enforce all applicable laws, rules, and regulations to ensure adherence to standard fire prevention and safety measures and to promote accountability in the fire protection and prevention service, among other things (Mendoza, 2023).

Being a tropical nation located close to the equator, the Philippines has historically had very high temperatures, particularly in the dry season. These circumstances, together with elements like fast urbanization and crowded communities, make the nation especially susceptible to fire-related catastrophes (Manalo, et al., 2022). Fire events in the Philippines have notable repercussions that sometimes led to property destruction, fatalities, economic activity interruption, and long-term impacts on community development (Cunanan, et al., 2022). Particularly in commercial and densely populated regions, the frequency and intensity of fire outbreaks grew as climate change continued to alter weather patterns (Jones, et al., 2022). These events drew attention to the necessity of more strong fire protection and preparedness programs and caused millions of pesos in damage. Many people—especially owners of commercial establishments—lacked adequate knowledge and awareness of fire safety measures despite current laws and initiatives, which increased the risk of fire-related losses (Nudzor, 2023).

Given these issues, the study was done to assess the degree of fire safety awareness among Philippine commercial facility owners. The study sought to evaluate their readiness, knowledge of fire prevention policies, and general reaction to fire crises. The results helped to highlight important awareness and practice gaps and offered ideas for strengthening present fire safety initiatives and campaigns.

METHODOLOGY

A descriptive-evaluative research design was used in this study. The descriptive component described the respondents by age, gender, civil status, educational level, type of business, years in operation, and capitalization, so enabling the spotting of patterns in fire safety awareness. The evaluative element, on the other hand, measured business owners' adherence to permit renewal criteria especially papers relating to fire safety rules including barangay clearance, mayor's permit, financial statements, lease contracts, community tax certificates, and local insurance.

Respondents were 80 business establishment owners from Northern Philippines. A structured questionnaire based on the Bureau of Fire Protection Manual was the main data collecting method. The tool was split into two sections: Part I concentrated on demographic and corporate characteristics; Part II evaluated fire prevention awareness, especially in relation to fire safety protection and firefighting practices. Responses were gauged on a 5-point Likert scale from 1 (Not Aware) to 5 (Fully Aware).

Before data gathering, the researcher got ethical approval from the institution's Institutional Review Board and acquired authorization from local authorities and university management. Distributed to all participants, a letter of consent informed them of the goal, procedures, voluntary character of participation, and their right to withdraw at any moment without penalty. All replies were coded to safeguard the identities of the respondents; confidentiality and anonymity were rigorously maintained. For better understanding, questionnaires were translated into Filipino and individually handed out and collected, hence achieving a 100% response rate.

Frequency and percentage distribution were utilized to characterize the characteristics of the respondents for data analysis; weighted mean was used to assess the degree of knowledge on fire safety and procedures. The Chi-square test was used to evaluate notable correlations and variations between respondents' profiles and their degree of awareness.

RESULTS AND DISCUSSION

Table 1. Profile of the Respondents

Profile Variables	Frequency (n=80)	Percentage
Age		
30-40	2	2.50
41-50	11	13.75
51-60	34	42.50
61-70	33	41.25
Gender		
Male	35	43.70
Female	45	56.30
Civil Status		
Single	26	32.50
Married	47	58.75
Widowed	7	8.75
Educational Attainment		
Elementary Graduate	5	6.25
Secondary Undergraduate	7	8.75



Secondary Graduate	24	30.00
College Undergraduate	25	31.25
College Graduate	10	12.50
Master's Degree	6	7.50
Doctorate Degree	3	3.75
Types of Business		
Hardware/Lumber	17	21.25
Gas Station	13	16.25
Restaurant Owner	9	11.25
Grocery Owner	18	22.50
School	7	8.75
Drug Store	11	13.75
Hotel	5	6.25
Number of Years of Operation of the Business		
1-10	28	35.00
11-20	26	32.50
21-30	18	22.50
31-40	8	10.00
Capitalization		
Below 100,000	16	20.00
101,000-500,000	32	40.00
501,000-1,000,000	21	26.25
Above 1,000,000	11	13.75

Based on the results of the study, most of the business owners were between the ages of 51 and 70. In terms of gender, there were more female business owners than male business owners. Regarding marital status, the majority of the participants were married, while the rest were single or widowed.

In terms of educational attainment, most had completed secondary and college education, with a few having completed graduate or doctoral degrees. The businesses represented in the study were diverse, including grocery stores, hardware/lumber shops, gas stations, restaurants, schools, drugstores, and hotels. The majority of the respondents owned grocery stores and hardware/lumber shops.

In terms of business duration, most businesses had been in operation for 1 to 10 years, followed by businesses that had been operating for 11 to 20 years. Regarding capitalization, the majority

had capital ranging from ₱101,000 to ₱500,000, with some having either lower or higher capital amounts.

Table 2. Level of Awareness of the Respondents on the Requirements needed for the Renewal of Business Permits

Dimension	Mean	Descriptive Interpretation
1. Barangay Clearance Certificate for the Current Year	4.45	Fully Aware
2. Mayor's permit or business permit from the previous	4.45	Fully Aware
3. Financial statement of the previous year	4.49	Fully Aware
4. A signed and notarized lease contract or land title for the current year	4.41	Fully Aware
5. Community Tax Certificate	4.48	Fully Aware
6. Local Insurance	4.40	Fully Aware
Category Mean	4.45	Fully Aware

The findings show that the respondents are fully aware of the required papers for business permit renewal. Ensuring that business activities are compatible with local rules and that they keep their legitimacy and running within the community depends on this great degree of awareness. The knowledge of business owners on vital papers such the Barangay Clearance, Mayor's permit, and financial statements, all of which are required for legal compliance, validates findings from several research. A study by Trevlopoulos, et al. (2021) underlined how knowledge of regulatory requirements, especially with regard to business licensing and legal compliance, directly affects business sustainability. Owners who are knowledgeable are more likely to follow legal processes, so guaranteeing the running of their company and avoiding penalties.

Furthermore, the knowledge of papers like the Community Tax Certificate and Local Insurance aligns with the results of the study of Brondolo, et al. (2022) who underlined the importance of correctly filing taxes and obtaining appropriate insurance in reducing business risks and earning community confidence. A company that adheres to these policies is seen as more credible and safer, hence gaining local support as well as government endorsement. The respondents' knowledge of the notarized lease contracts or land titles also suggests an awareness of legal limits relating to property ownership and economic rights, which has been backed by several legal systems around the Philippines. According to Dewar and Watson (2023), companies with obvious ownership or lease contracts are less likely to find legal problems that could interfere with their operations.

Table 3a. Level of Awareness of the Respondents on Fire Prevention along Fire Safety Protection

Items	Mean	Descriptive Interpretation
Provide approved type portable fire extinguisher ABC type.	4.65	Fully Aware
Provide dry and wet standpipe system and coupling of fire department standards with pumps of reliable pressure & connected to an adequate water supply tank.	4.43	Fully Aware
Provide automatic fire extinguishing system where kitchen equipment is located.	4.21	Fully Aware
Provide automatic chemical extinguishing system on all areas where electronic/electrical equipment are located	4.41	Fully Aware
Provide approved type automatic fire extinguishing system.	4.48	Fully Aware
Category Mean	4.44	Fully Aware

The results imply that respondents show great awareness of the fire safety protection policies required for their company activities. This degree of knowledge shows a proactive approach to safety and fire prevention, which is crucial in guaranteeing that companies are not only complying with local fire safety rules but also dedicated to safeguarding both property and people from the terrible consequences of fire. Particularly the respondents' awareness of the necessity for an authorized kind of portable fire extinguisher. Managing small fires before they develop into bigger crises depends on fire extinguishers, particularly the ABC kind. According to Junjunan, et al. (2021), the first line of defense is having the appropriate fire extinguishing tools in place. Companies that provide their facilities with the right fire safety tools are far better ready to manage fire crises, hence minimizing possible damage and loss.

Furthermore, the knowledge of the necessity for a dry and wet standpipe system, together with consistent pumps and water delivery, suggests that the people recognize the requirement of keeping a sufficient water supply system to control fires properly. Zhang (2023) underlined that the presence of a consistent fire suppression system in commercial enterprises is a major determinant in avoiding large damage during fires. Appropriate standpipe systems guarantee that fire brigades or perhaps self-initiated fire control activities have quick access to water.

Respondents also showed knowledge of the requirement for automated fire extinguishing devices in sectors such kitchens and electronic/electrical equipment sites. Bag and Ganguly (2023) support this finding by stressing the need of automatic fire suppression systems, particularly in high-risk areas like kitchens

and electrical rooms, in reducing fire hazards before they rise. Kitchens, being a frequent source of fire threats from cooking equipment, and areas containing electronic or electrical devices, which are susceptible to electrical fires, need such systems for prompt response.

The respondents' dedication to thorough fire safety measures is emphasized even more by the great awareness of the provision of certified automated fire extinguishing devices. The findings of the study of Ekunke, et al (2024) indicate that companies with automatic fire suppression systems are less likely to suffer major damage in the case of a fire as these systems can fast identify and suppress fires before they spread.

Table 3b. Level of Awareness of the Respondents on Fire Prevention along Firefighting Procedures

Items	Mean	Descriptive Interpretation
Know department emergency procedures and evacuation routes.	4.45	Fully Aware
Know locations of extinguishers in your area and how to use them.	4.30	Fully Aware
Always sound the alarm regardless of fire size.	4.28	Fully Aware
Avoid smoky conditions.	4.41	Fully Aware
Ensure area is evacuated.	4.61	Fully Aware
Category Mean	4.41	Fully Aware

The findings show that the respondents had a good knowledge of fire prevention practices connected to firefighting, hence showing their awareness of vital actions to take in a fire crisis. This degree of awareness is crucial not only for guaranteeing the safety of people inside a company but also for reducing the possibility of damage and injury during fire events. The knowledge of department emergency procedures and evacuation routes first emphasizes the need of having a well-prepared staff ready to respond fast to fire crises. Torpan, et al. (2021) underlined that to minimize misunderstanding during important times, companies should routinely inform staff members about emergency protocols. Knowing emergency procedures and evacuation routes helps to greatly increase the efficiency and efficacy of evacuation operations, so guaranteeing that individuals may quickly and safely leave the site.

A thorough fire protection plan also depends on the responders' knowledge of the sites of fire extinguishers and their operation. Effectively fighting small fires before they spread depends on having staff members who know how to use fire extinguishers and where to get them during an emergency. Velasco and Alfonso (2024) back the idea that companies can lessen the general effect of

fire outbreaks if staff members know their locations and are trained to operate fire extinguishers.

Consistent with fire safety rules that advise early notification to avoid confusion and guarantee prompt assistance, the respondents also showed awareness of the need of sounding the alarm irrespective of the fire's size. Reducing damage to property and injuries depends on early warning systems (Sakic Trogrlic, et al., 2022). By notifying people to leave the site, immediate alarm activation can help save lives by lowering the likelihood of fatalities and allowing fire rescue teams to act quickly. The knowledge of avoiding smoky settings emphasizes even more the respondents' grasp of fundamental fire safety rules. Smoky surroundings are dangerous for health; fast action to prevent them can save inhalation injuries, which are among the top causes of death in fire scenarios. Fu, et al. (2021) claim that training in identifying and avoiding smoke-filled situations guarantees that people can go to safer places during a fire and prevent health issues brought on by smoke inhalation.

Ultimately, reducing damage depends on the respondents' awareness of the need of guaranteeing area evacuation. One of the main duties during a fire emergency is making sure everyone in the impacted area evacuates right away. The findings of the study of Sun, et al. (2024) show that evacuation strategies emphasizing accounting for all people in the structure and directing them to safety lower the probabilities of fatalities and property damage.

Table 3c. Summary Table on the Level of awareness of the respondents on the fire prevention

Dimensions	Mean	Descriptive Interpretation
Fire Safety Protection	4.44	Fully Aware
Fire Fighting Procedures	4.41	Fully Aware
Overall Mean	4.43	Fully Aware

The results show that respondents show great knowledge of both fire safety protection and firefighting techniques. This knowledge implies that business owners are well-informed about the preventive actions required to guarantee the safety of their businesses, such as the correct installation of fire extinguishers, fire suppression systems, and emergency water supplies. They also seem to be aware of the need of automatic fire extinguishing systems in high fire risk locations such kitchens and places holding electronic equipment. Furthermore, they demonstrate significant knowledge of firefighting techniques. These covers understanding emergency protocols, evacuation routes, fire extinguisher locations, and the need to sound the alarm in case of fire. Their knowledge of these procedures indicates that companies are ready to properly manage fire crises, hence reducing the possibility of injury or loss.

Improving fire safety inside company buildings depends on this high degree of awareness. Owners can guarantee personal safety and property protection by prompt and efficient response to fire threats. This is consistent with the results of several studies stressing the need of fire safety education and training in avoiding fire-related events and reducing their consequences.

Table 4. Correlating between the profile variables of the respondents and their level of awareness on fire prevention

Profile Variables	Fire Safety Protection	Fire Fighting Procedures
	p-value	p-value
Age	.879	.279
Sex	.222	.428
Highest Educational Attainment	.209	.710
Number of Years of Operation of the Business	.492	.083
Type of Business	.951	.193

*significant at .05 level

The results of the study show that the demographic profile variables of the respondents, such as age, gender, educational attainment, years of business operation, and type of business, do not significantly influence their level of awareness regarding fire safety protection and firefighting procedures. This indicates that business owners, regardless of these factors, exhibit similar levels of understanding when it comes to fire prevention measures.

CONCLUSION AND RECOMMENDATIONS

The study revealed that business establishment owners generally exhibit a high level of awareness regarding fire prevention, particularly in areas concerning fire safety practices, regulatory compliance, and emergency preparedness. This heightened awareness can be attributed to ongoing government efforts, local fire drills, and mandated compliance with fire safety requirements. However, the findings also suggest a need for continuous education and reinforcement of fire safety protocols, especially in aspects where slight knowledge gaps remain.

Future research may consider comparing fire prevention awareness among business owners in urban and rural settings to identify geographic disparities in knowledge and practices. While awareness levels are high, further studies could investigate whether this awareness translates into consistent safety practices and behavior in actual fire situations. In addition, future work may explore the role of technology (e.g., mobile apps, IoT devices, early warning systems) in enhancing fire prevention and response readiness among businesses.

REFERENCES

1. Bag, S., & Ganguly, K. (2023). Mitigation of fire hazards in hospital. In *A guide to hospital administration and*



- planning (pp. 193-229). Singapore: Springer Nature Singapore.
2. Brondolo, J., Brondolo, M. J. D., Chooi, A., Schloss, T., & Siouclis, A. (2022). *Compliance risk management: developing compliance improvement plans*. International Monetary Fund.
 3. Cunanan, T. A. R. A., Lagasca, E. F. L., Noriega, C. J. J., & Cabauatan, R. (2022). Damages Caused by Natural Disasters and the Number of Natural Calamities' Effect on Philippine Government's Spending on Disaster Management. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 7(2), e001284-e001284.
 4. Dewar, D., & Watson, V. (2023). Urbanization, unemployment and petty commodity production and trading: Comparative cases in Cape Town. In *Living under apartheid* (pp. 124-142). Routledge.
 5. Ekunke, O. V., Kehinde, T. O., Owunna, I. B., Ogunkanmi, S. A., Oyetunde, J. O., Dillum, M. N., & Adegoke, S. H. (2024). Innovations in Fire Detection and Suppression Systems for Oil Refin-ery Operations. *Path of Science*, 10(11), 4001-4015.
 6. Fu, M., Liu, R., & Zhang, Y. (2021). Why do people make risky decisions during a fire evacuation? Study on the effect of smoke level, individual risk preference, and neighbor behavior. *Safety science*, 140, 105245.
 7. Hasan, R., Chy, M. A. R., Johora, F. T., Ullah, M. W., & Saju, M. A. B. (2024). Driving Growth: The Integral Role of Small Businesses in the US Economic Landscape. *American Journal of Industrial and Business Management*, 14(6), 852-868.
 8. Jones, M. W., Abatzoglou, J. T., Veraverbeke, S., Andela, N., Lasslop, G., Forkel, M., ... & Le Quéré, C. (2022). Global and regional trends and drivers of fire under climate change. *Reviews of Geophysics*, 60(3), e2020RG000726.
 9. Junjunan, S. F., Chetehouna, K., Cablé, A., Oger, A., Gascoin, N., & Bura, R. O. (2021). A review on fire protection systems in military and civilian vehicles. *Fire technology*, 1-40.
 10. Lagata, L. S., Andujar, C. J., Lantaco, E. L. S., Manuales, K. C. A., Allanic, E. A., & Cuevas Jr, J. F. (2022). Challenges Encountered and Insights of the Bureau of Fire Protection Personnel Towards Responding Fire Incident. *Mediterranean Journal of Basic and Applied Sciences (MJBAS)*, 6(2), 103-117.
 11. Magon, S. A., & Imbang, G. A. (2022, December). The future of the Philippine safety industry through scenario building. In *2022 IEEE 14th International Conference on Humanoid, Nanotechnology, Information Technology, Communication and Control, Environment, and Management (HNICEM)* (pp. 1-6). IEEE.
 12. Manalo, J. A., Matsumoto, J., Takahashi, H. G., Villafuerte, M. Q., Olaguera, L. M. P., Ren, G., & Cinco, T. A. (2022). The effect of urbanization on temperature indices in the Philippines. *International Journal of Climatology*, 42(2), 850-867.
 13. Mendoza, L. (2023). Competence of Bureau of Fire Protection Personnel Amongst Clients in Baguio City Fire Station. Available at SSRN 4360760.
 14. Nudzor, H. (2023). From Flames to Fortune by Improving Fire Risk Management in the Case of Ghana. *Journal of Business and Economic Options*, 6(4), 8-13.
 15. Pintac, J. L. A., Pechora, D. R., & Ligan, V. O. (2021). Compliance with the 2008 fire code of the Philippines (RA 9514): Basis for intervention. *International Journal of Research and Innovation in Social Science*, 5(03), 22-30.
 16. Šakić Trogrlić, R., van den Homberg, M., Budimir, M., McQuistan, C., Sneddon, A., & Golding, B. (2022). Early warning systems and their role in disaster risk reduction. In *Towards the "perfect" weather warning: bridging disciplinary gaps through partnership and communication* (pp. 11-46). Cham: Springer International Publishing.
 17. Sun, H., Han, G., Zhang, X., & Ruan, X. (2024). Grasping Emergency Dynamics: A Review of Group Evacuation Techniques and Strategies in Major Emergencies. *Journal of Safety Science and Resilience*.
 18. Torpan, S., Hansson, S., Rhinard, M., Kazemekaityte, A., Jukarainen, P., Meyer, S. F., ... & Orru, K. (2021). Handling false information in emergency management: A cross-national comparative study of European practices. *International journal of disaster risk reduction*, 57, 102151.
 19. Trevlopoulos, N. S., Tsalis, T. A., Evangelinos, K. I., Tsagarakis, K. P., Vatalis, K. I., & Nikolaou, I. E. (2021). The influence of environmental regulations on business innovation, intellectual capital, environmental and economic performance. *Environment Systems and Decisions*, 41, 163-178.
 20. Velasco, M., & ALFONSO, R. (2024). Fire Safety Awareness of Employees in a Biomass Powerplant: Basis for Comprehensive Training Program. Available at SSRN 5094267.
 21. Zhang, C. (2023). Review of structural fire hazards, challenges, and prevention strategies. *Fire*, 6(4), 137.