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Proactive & Reactive Knowledge Assessment on Fire Safety Measures: DCCP Community

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Writing and Presentation)

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The Researchers

DEDICATION

Through the hardships we faced in the progress of our research study, we hereby dedicate this work to our beloved Data Center College of the Philippines, Laoag City, Inc., which has given us the pride of bearing its prestigious name. We also dedicate it to our instructors, who have guided us and shaped us into the individuals we are today, to our fellow students and friends, who encouraged us throughout this journey, and to our cherished parents, who provided both financial and emotional support.

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ABSTRACT

Fire has a dual nature: it can be both creative and destructive, making effective fire mitigation strategies essential in fire-prone areas. This study was conducted to assess the level of knowledge of students and employees at Data Center College of the Philippines (DCCP) regarding fire prevention and suppression safety measures, as well as the factors influencing their level of knowledge.

The research employed a mixed-method approach, utilizing an explanatory sequential design. This approach collected and analyzed both quantitative data, with a total of 459 respondents (374 students and 85 employees), and qualitative data, with 9 participants. Weighted mean and thematic analysis were used to interpret and analyze the data.

The results of the study revealed that students and employees of DCCP possess a high level of knowledge regarding fire safety measures, demonstrating strong knowledge in fire prevention and good knowledge in fire suppression. The factors influencing their high level of knowledge include education, training, and self-awareness. Based on the research findings, the researchers proposed a strategic plan titled "Safe School is Our Desire, Prevention, and Suppression is Self-enforced," aimed at continuously enhancing fire safety practices within the DCCP community to maintain and further develop their fire safety knowledge.

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CHAPTER I

THE PROBLEM AND ITS SETTING

Introduction

Fire embodies a dual nature—it has the power to create and destroy. Throughout history, humanity has harnessed fire through advanced technologies, from controlled burns to energy production. However, its volatility remains a significant concern. Fire is one of the most devastating disasters, capable of causing widespread destruction, loss of life, and long-term emotional and economic consequences. Its unpredictable nature and rapid spread make it a serious threat to both human safety and the environment.

The Philippines, being highly prone to fire disasters alongside other natural calamities, necessitates the exploration of effective fire mitigation practices. Fire mitigation encompasses activities designed to prevent, reduce, or eliminate fire hazards, ensuring fire safety through necessary precautionary measures. These actions help minimize fire incidents, reduce injuries and fatalities, and limit financial and structural damage. Fire safety protocols, firefighting techniques, and fire management strategies are essential in preventing disasters that arise when fires exceed their intended boundaries.

Fire safety is not merely an individual responsibility but a shared duty that impacts entire communities. Implementing fire safety measures enables individuals to respond effectively to fire emergencies (Muico et al., 2024). Fire poses significant threats to human life and property, often resulting in severe injuries, extensive structural damage, and loss of personal belongings. Beyond immediate destruction, fire can lead to broader socio-economic consequences, including disruptions in production, job losses, and a

decline in exports. While these indirect effects may not have a major impact on a national scale, they contribute to the overall burden of fire-related losses.

Several studies highlight the effectiveness of fire safety measures, including fire-related training, fire evacuation drills, functional fire alarms, designated emergency exits, and fire hazard awareness programs. Schools are particularly high-risk environments due to the presence of combustible materials and multiple ignition sources (Hassanain et al., 2022). Proactive measures are crucial in maintaining a safe learning environment for students and employees. The possibility of a fire occurring in a school puts thousands of lives at risk, making reactive measures equally vital in emergency situations.

This study aimed to assess the proactive and reactive knowledge of the Data Center College of the Philippines (DCCP) of Laoag City, Inc. community regarding fire safety measures to create a safer learning environment. Additionally, it seeks to evaluate how well employees and students maintain fire safety knowledge to enhance their awareness and ability to prevent and suppress fires. By examining fire safety practices, levels of awareness, and behavioral consistency among the DCCP of Laoag City, Inc. community, this could contribute to strengthening fire prevention strategies and ensuring long-term fire safety.

Background of the study

Ensuring awareness and capability in preventing and suppressing fires is a vital component of maintaining a safe learning environment. Fire safety should be ingrained as a permanent habit, extending beyond school settings and becoming an integral part of daily life. Safety is not only a personal responsibility but also a shared duty among students, teachers, staff, and administrators. This study highlights the necessity of

enhancing fire safety awareness and implementing proactive measures to safeguard educational institutions.

According to Delaliarte et al. (2024), fire poses a significant risk to students and staff, with the potential to cause severe property damage. Schools must establish and enforce fire safety protocols before, during, and after fire emergencies. Educating students on fire safety measures is essential in mitigating risks and ensuring preparedness.

The importance of proactive and reactive fire safety measures cannot be overstated. Schools are specialized structures designed to accommodate large numbers of occupants in confined spaces, primarily for educational purposes. A majority of these occupants are children and adolescents, who are particularly vulnerable in emergencies due to their tendency to panic and their limited ability to manage crises effectively. The high-density nature of school environments necessitates careful planning and design to facilitate safety, evacuation, and crisis management.

The Bureau of Fire Protection (BFP) actively promotes fire safety education by training Boy Scouts and Girl Scouts of the Philippines during school-organized camping trips. These programs prepare students for emergencies by teaching essential fire safety skills, such as using fire extinguishers and responding effectively to fire incidents. Such initiatives are crucial in fostering preparedness and resilience among students.

Fire hazard management involves two key strategies: preventing fire occurrence and mitigating its impact. While prevention is the primary approach, it is not always guaranteed, making mitigation equally important. Mitigation measures focus on two aspects—managing the fire itself and protecting individuals and property. Protecting

individuals often requires the safe evacuation of occupants through designated fire escape routes, while managing the fire involves limiting its growth by controlling available fuel sources and employing fire suppression systems.

Fire suppression systems can be categorized as automated or manual. Automated systems, such as sprinklers and gaseous fire suppression mechanisms, rely on fire detection devices to activate suppression measures. Manual fire suppression, on the other hand, involves human intervention through the use of portable fire extinguishers or standpipe systems. The effectiveness of these suppression methods depends on early fire detection, the reliability of fire protection equipment, and the preparedness of individuals to act during emergencies.

Fires can occur unexpectedly under various circumstances, often without warning. Regardless of awareness levels, individuals may find themselves in situations requiring immediate response. By adhering to established fire safety measures, schools can effectively prevent accidents, mitigate hazards, and foster a secure environment conducive to learning and productivity.

A comprehensive understanding of fire hazards is crucial for all members of an educational institution. This includes knowledge of fire theory, safety protocols, self-protection strategies, the proper use of fire prevention equipment, and compliance with fire department regulations. Schools must prioritize fire safety education and preparedness to ensure the well-being of students and staff.

This study aimed to address gaps in existing research by focusing on the DCCP community's in-depth understanding of fire safety measures within an educational setting. Previous studies have primarily examined general fire safety knowledge, often

overlooking specific preventive techniques and appropriate emergency responses. In contrast, this study investigated the level of fire prevention and suppression knowledge among DCCP of Laoag City Inc. students and employees. By doing so, it could contribute to a more comprehensive understanding of fire safety preparedness within the school community, ultimately enhancing fire prevention strategies and ensuring long-term safety.

Statement of the Problem

The primary objective of this study is to assess the level of knowledge on fire safety measures among students and employees of Data Center College of the Philippines (DCCP) of Laoag City Inc., evaluating their awareness, preparedness, and ability to respond effectively to fire emergencies. Specifically, it sought to answer the following questions:

1. What is the level of knowledge of the DCCP community as to:
   1.1. Fire prevention safety measures; and
   1.2. Fire suppression safety measures?
2. What are the factors that influence the level of knowledge of the DCCP community on fire prevention and fire suppression safety measures?

Theoretical Framework

The following were the theories used in the study:

Social Learning Theory

Social Learning Theory was introduced in 1977 by psychologist Albert Bandura. It explains that learning occurs through observation, imitation, and modeling and is influenced by factors such as attention, motivation, attitudes, and emotions.

Students and employees can learn about fire safety by observing and imitating others. Positive reinforcement for practicing fire safety increases the likelihood of adoption, while witnessing negative consequences for improper fire safety practices can discourage unsafe behavior. Their attention is drawn to fire safety measures by observing others, particularly the fundamental practices for preventing and suppressing fires. They can apply these lessons independently, often without extensive explanation, as they develop an understanding through observation. Such learning experiences are not limited to real-life situations but are also accessible through social media platforms, which can serve as valuable educational tools.

Rational choice theory

Rational Choice Theory, introduced in 1776 by Adam Smith, states that individuals use rational calculations to make decisions that align with their personal objectives.

This theory applies to this study, as the ability of students and employees to make informed decisions and think rationally can help prevent fire occurrences. Understanding and following proper fire safety procedures without hesitation enables them to act with confidence, enhancing overall preparedness and response to fire emergencies.

Protection Motivation Theory

Protection Motivation Theory suggests that individuals protect themselves based on two key factors: threat appraisal and coping appraisal. Threat appraisal refers to a person's ability to assess the seriousness of a situation, particularly in emergencies. Coping appraisal, on the other hand, involves evaluating one's ability to take effective actions to mitigate the threat (Rogers, 1975).

In the context of fire safety, threat appraisal determines whether an individual can address a fire emergency immediately or if evacuation is the safer option. Coping appraisal involves a person's capability to effectively use fire safety equipment, evacuate safely, or assist in rescuing others. An individual's response during a fire emergency is shaped by the interaction between these two appraisals, influencing their likelihood of taking appropriate precautions.

This highlights the importance of fire safety education and training, as enhancing both threat and coping appraisals can significantly improve an individual's ability to respond effectively to fire emergencies.

Conceptual Framework

This study used the IPOO model which represents the Input, Process, Output, and Outcome.

The input of this study assessed the level of knowledge within the DCCP community regarding fire prevention and suppression measures, as well as the factors that influence their knowledge of these safety measures. The process focused on the research methodology, which employed a mixed-method approach, utilizing a researcher-made survey questionnaire and an interview guide.

The output of the study was a strategic plan titled *"Safe School is Our Desire, Prevention and Suppression is Self-enforced."* Once implemented, this plan aims to maintain and enhance the community's knowledge of fire safety measures, thereby strengthening and ensuring a safer learning environment.

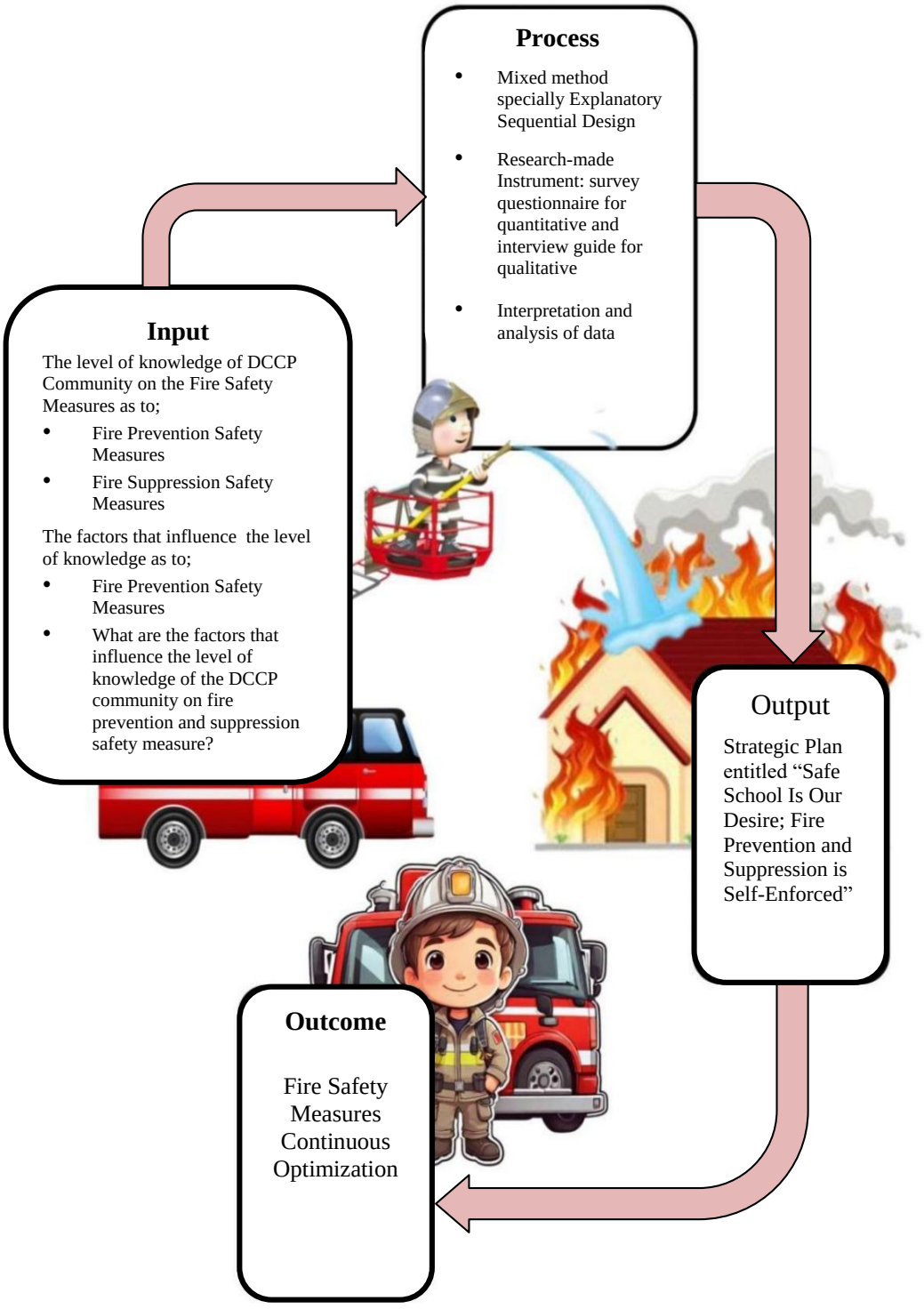

Figure 1. Paradigm of the study.

Significance of the Study

The findings in this study provide a significant understanding and it deemed beneficial to the following:

Students. This study is very important to keep the students aware of the proper use of fire safety equipment and their responsibilities when using it.

Employees. This study helps them implement effective learning strategies for using fire safety equipment in schools and improve policies, procedures, and tactics for better safety measures.

Data Center College of the Philippines (DCCP). This study will enable DCCP to incorporate fire safety knowledge into its community and to develop effective training programs, policies, and procedures.

Bureau of Fire Protection (BFP). The findings will provide the BFP with data on fire safety knowledge in educational institutions and improve fire prevention programs and suppression demonstrations tailored to their needs.

National Disaster Risk Reduction and Management Council (NDRRMC). This study will assist the NDRRMC in preparing educational institutions for fire emergencies, informing disaster preparedness strategies, and contributing to a safer, more resilient educational system in the Philippines.

Community. The result of this study will give them knowledge in relation to fire prevention and fire safety measures.

Researchers. This study will broaden the knowledge of the researchers in discovering a possible solution and also enhance their social skills and critical thinking.

Future Researchers. This study will serve as a basis or reference for future studies regarding the knowledge of fire prevention and fire safety measures.

Scope and Delimitations of the Study

This research study was focused on the assessment of the level of knowledge within the DCCP community regarding fire prevention and suppression measures, as well as the factors that influence their knowledge of these safety measures.

The participants in this study were students enrolled during the second semester of A.Y. 2023-2024, as well as faculty members who were available during that semester at Data Center College of the Philippines, Laoag City, Inc. The college is located in Brgy. 1 San Lorenzo and Brgy. 8 Tupaz St., Laoag City, Ilocos Norte.

The study was conducted during 2nd semester of A.Y. 2023-2024 and 1st semester of A.Y. 2024-2025.

Definition of Terms

Terminologies below are provided for the readers to have a clear understanding of the employed definition of this study;

DCCP Community. It refers to the college students (across all courses) and employees (both teaching and non-teaching staff) of Data Center College of the Philippines, Laoag City, Inc.

Fire Prevention Safety Measures. This refers to proactive actions taken to prevent the occurrence of fires, with a focus on reducing fire hazards before they arise.

Fire Safety Measures. Encompasses the actions and strategies implemented to prevent, detect, and respond to fires effectively, aiming to minimize harm and ensure the safety of individuals.

Fire Suppression Safety Measures. This encompasses the actions and strategies

implemented to prevent, detect, and effectively respond to fires, aiming to minimize harm and ensure the safety of individuals.

Knowledge. It refers to the familiarity, awareness, or understanding of facts, information, skills, or concepts acquired through experience, education, or learning, and gained by perceiving, discovering, or studying.

Proactive. This refers to actions taken before a fire occurs to prevent its initiation or spread.

Reactive. It refers to actions taken during or after a fire to mitigate its effects, control its spread, or provide emergency response.

CHAPTER II

REVIEW OF THE RELATED LITERATURE AND STUDIES

This chapter presents a review of literature and studies that have relevance to the investigation of the problem of the study. It serves as the foundation for the current study and highlights similarities and differences with previous research on the subject.

REPUBLIC ACT NO. 11589

Republic Act No. 11589 is an act strengthening and modernizing the bureau of fire protection and appropriating funds. This Act is also known as Bureau of Fire Protection**.** It is the policy of the State to ensure public safety through the prevention and suppression of all kinds of destructive fires, with the active support of the community. The State shall formulate and implement plans and programs to enhance and modernize the Bureau of Fire Protection, expand its mandate and capability, and ensure its responsiveness to the changing needs of the community. The powers and functions of BFP includes:

- Prevention and suppression of all destructive fires on buildings, houses, and other structures
- Collaborate with various local government units (LGUs) on fire protection services, such as fire prevention and preparedness, response planning, and information sharing, as well as on handling fire management and operational issues.
- Respond to natural or man-made disasters and other emergencies, including the conduct of rescue operations, medical emergencies, and containment of hazardous materials.

- Issue implementing rules and regulations, and prescribe standards, schedule of fees, fire service charges, and administrative penalties, in connection with the enforcement of Republic Act No. 9514, otherwise known as the "Fire Code of the Philippines of 2008" and other related laws which includes investigating all causes of fire and conduct monthly fire prevention campaigns and information drives in partnership with the LGUs, the Department of the Interior and Local Government (DILG), the Department of Transportation, and economic zones.
- Develop, promote, and implement a comprehensive fire safety and protection a program that aims to strengthen the capacity of the national government and LGUs, to build the fire resilience of communities, institutionalize measures for reducing disaster risk, and enhance disaster and emergency preparedness and response capabilities.

D.O. 28, S. 2016

The Department of Education (DepEd) issues the enclosed Guidelines on Strengthening the Fire Safety and Awareness Program (FSAP) (D.O. 28, S. 2016) which aims to establish specific roles, responsibilities, and monitoring and mechanisms of evaluation for the fire safety and awareness program of schools which was launched through DepEd Order Nos. 72, s. 2012 and 13, s. 2013. The roles, responsibilities, monitoring, and mechanisms of evaluation constituting the process shall guide the concerned offices of schools, school divisions, regions, and the central office in addressing fire safety preparedness measures and facilitate the Fire Code compliance of schools through a sustainable program and partnership with the Department of Interior and Local Government (DILG), and the Bureau of Fire Protection (BFP).

Fire safety measures and intervention schemes

The study, Fire safety measures and intervention schemes, aimed to assess the status of fire safety measures in Barangay San Roque. Given that fires are a common hazard, implementing effective fire safety measures is crucial for ensuring public safety and supporting firefighters in their efforts to mitigate fire-related risks.

The research employed a non-experimental descriptive method to collect and analyze data. A total of 324 residing in Barangay San Roque were selected as participants. Statistical tools such as the mean were applied to quantify the level of fire safety measures in terms of community safety, procedures, and awareness.

The high mean values across all indicators underscore the community's commitment to fire safety, with residents showing a proactive approach to understanding, implementing, and raising awareness about safety measures. These findings align with previous research emphasizing the importance of community-wide awareness and active participation in preventing fire incidents. The residents' keen attention to community safety, procedures, and awareness reflects a positive and engaged approach toward fire safety measures, showcasing the effectiveness of educational programs and interventions. (Muico et al., 2024).

Fire Safety Awareness and Practices of Science, Technology, Engineering, and Mathematics Students in a Philippine Public Secondary School

Delaliarte et al. (2024) conducted a study on the fire safety awareness and practices of STEM students in a public secondary school to ascertain the extent of their fire safety awareness.

The methodology employed in this study followed a descriptive, comparative, and correlational design. The findings revealed that students' level of fire safety practice is not influenced by gender. Both male and female students demonstrated equal capability in implementing fire protection measures before, during, and after a real fire. This suggests that individuals, regardless of gender, can exhibit appropriate behaviors to prevent, contain, and mitigate fire incidents.

STEM students in public secondary schools displayed a strong understanding of fire safety precautions, preparedness, and response strategies before, during, and after an actual fire. Moreover, they acquired these fire safety principles through participation in various academic programs led by the Department of Education, orientation programs conducted in collaboration with the Bureau of Fire Protection, and the Disaster Readiness and Risk Reduction curriculum's Most Essential Learning Competencies. These experiences likely enhanced their skills and preparedness in responding to real-life fire incidents.

Students with a higher level of fire safety knowledge were more likely to properly use fire extinguishers, follow correct evacuation protocols, and maintain good school hygiene, further contributing to a safer learning environment.

Understanding the Level of Awareness and Knowledge for Fire Safety for Fire Safety Among Kindergarten Teachers in Perak, Malaysia

Schools are intended to provide a safe learning environment for students under the care of teachers. However, ensuring that appropriate safety measures are in place to prevent catastrophic incidents, particularly fire disasters, is crucial. Fires can cause significant damage, financial losses, and loss of life. To prevent such incidents,

appropriate safety precautions must be taken. A safe school environment is essential, especially regarding fire safety, as it allows students to learn and teachers to teach without fear. It is important that both teachers and students are aware of fire hazards, safety measures, and emergency procedures to respond effectively in case of a fire incident. Therefore, educational institutions must prioritize fire safety and ensure that teachers possess the necessary knowledge and awareness to protect the safety of both students and staff.

The study employed a cross-sectional design and involved 112 kindergarten educators from the Hilir Perak district. The participants were selected using random sampling. Data was collected through a self-administered questionnaire consisting of 37 items, designed to assess the teachers' awareness and knowledge of fire safety measures.

The majority of respondents exhibited a moderate level of knowledge regarding fire safety measures. Approximately 70.5% of the teachers demonstrated good awareness of fire safety. The study found that preschool teachers were significantly more concerned about fire safety than their counterparts in private kindergartens. There was also a significant association between the level of education and fire safety awareness, with higher education levels corresponding to greater awareness. Teachers who had attended a fire safety course showed a higher level of knowledge compared to those who had not attended any course.

Although most kindergarten teachers displayed a good level of awareness regarding fire safety, their knowledge of the subject was moderate. The study revealed gaps in awareness between teachers in preschools and those in private kindergartens, with preschool teachers demonstrating higher levels of fire safety awareness. Additionally,

higher education levels and attendance at fire safety courses positively impacted both knowledge and awareness levels. The findings highlight the importance of continuing to improve teachers' knowledge and awareness of fire safety to ensure they are prepared to respond effectively in emergencies (Samad et al., 2023).

Fire Hazards Awareness and Preparedness Among the Residents of Bwari Area Council, Abuja, Federal Capital Territory, Nigeria

A study of Akanmo & Akarokoyo, 2023 assessed the fire hazard awareness and preparedness among the residents of Bwari Area Council, Abuja, Federal Capital Territory, Nigeria.

The study employed probability sampling techniques to select elements from the population. Stratified sampling was used within the probability sampling method to improve the accuracy of estimates regarding the characteristics of the entire population and to ensure that subgroups—potentially excluded by other sampling methods due to their small numbers—were included.

The study revealed that the majority of respondents were educated adults striving to make a living, engaging in various activities that unintentionally created fire hazards or caused fire outbreaks. Most of these respondents had at least a Senior School Certificate Examination (SSCE), indicating that while their awareness of fire hazards was average, their level of preparedness was significantly lower in comparison.

According to the study, sensitivity to fire hazards and disasters varied by population density. Fire hazards such as illegal wiring, fuelwood/black market sales near residential areas, the use of substandard electric poles, and the installation of electric poles and transformers within residential structures were prevalent, particularly in high-

and medium-density areas. The study found that fire risk in the area could be reduced if both the community and the government demonstrated unwavering commitment to fire safety initiatives.

The findings also indicated that the majority of residents in the study region had never received formal fire safety training, learning only the basics through chance encounters. As a result, they were more vulnerable to the destructive power of fire. Their level of preparedness was not directly influenced by their financial status or educational level, as these two factors had no direct impact on their awareness or readiness. Instead, negligence, ignorance, apathy, and poverty were identified as the root causes of most fire incidents.

Fire Safety Risk Assessment of Workplace Facilities

The paper of Hassanain et al., 2022, synthesize the relevant published literature in the domain of fire safety in office properties to identify the various types of combustible contents and causes of fire, and the set of factors that render office properties as high-risk facilities in fire events. Analyzing the fire codes to describe the pertinent requirements for fire safety precautionary measures, for office properties. Provision and maintenance of mandated fire prevention and protection measures result in less number of fires, injuries, fatalities, and property losses

This paper presented a systematic approach to assess the level of compliance with compulsory active and passive fire protection and prevention measures, in office properties. The study provides ground for enhancing the behavioral-based fire safety knowledge of design professionals, real estate developers, owners, and facilities managers about the possible fire hazards in office properties.

It also presented a risk assessment tool for assessing the compliance level for fire safety requirements, for the purpose of mitigating fire occurrence. The risk assessment tool was utilized during a walk-through inspection in a case study office building.

A Framework for Fire Safety Management in School Facilities

Schools are communal facilities that provide a variety of educational services to students. Schools must have a thorough management and control system to identify and mitigate the incidence of all types of hazards. Fires are a major concern in school facilities. According to statistics, a substantial number of fatalities and injuries have occurred in schools worldwide as a result of fire accidents.

A case study on the development of general framework for fire safety management in school facilities to serve as a practical reference for administrators and facility managers on the processes that must be followed to prevent fires in schools was conducted at a secondary school facility in Saudi Arabia's Eastern Province.

The case study provided a methodological approach to fire safety management in school facilities. The implementation of the framework served to identify all the shortcomings in the case study building. These shortcomings included: (1) exceeding the allowable travel distance for reaching the fire exit in one compartment, (2) placement of the fire extinguishers in invisible locations at the science laboratories, (3) lack of implementing fire drills periodically, (4) blockage of the apparatus road by the school gate, and (5) placement of the fire hydrants in visible and accessible locations in the street. The implementation of the framework served to develop an action plan of recommendations, to improve the fire safety condition in the case study building (Hassanain et al., 2022).

Fire Disaster Preparedness among Students in Kenya Medical Training Colleges in Eastern Kenya

The study Fire Disaster Preparedness among Students in Kenya Medical Training Colleges in Eastern Kenya by Kishoyian et al. (2021) examines the level of readiness to help the crisis management process make informed plans and decisions, ultimately reducing the frequency of catastrophic school fires, particularly those that result in human casualties.

The study employed a mixed-method approach with a descriptive cross-sectional design to gather data from the target population. Semi-structured surveys with both closed-ended and open-ended questions were used to get quantitative data, and focus group discussions were used to gather qualitative data. Findings from quantitative data were supplemented and enhanced by qualitative data. The actual estimated sample size used was 336 because the population of the sample comprised all four Kenya Medical Training College campuses in the Eastern Kenya region, which were purposefully chosen.

Results showed that 218 pupils, or 64.9%, did not know that fire safety policy guidelines were available in their college as it appears. More than 90% of the respondents in this study were found to be fairly and inadequately prepared on readiness for fire. This result is consistent with research conducted in Kisumu, Kenya, which found inadequate preparation for fire knowledge.

This highlights the condition of these institutions, revealing insufficient preparation that could lead to fatalities and the destruction of property in the event of a fire. Institutions must urgently invest in and install firefighting equipment, as the lack of

fire safety resources and awareness contributes to the low level of fire preparedness. Effective initiatives within local communities and institutions are essential to improving fire safety awareness and preparedness.

Fire Hazards in Dhaka City: An Exploratory Study on Mitigation Measure

Islam and Hossain (2018) explore on the fire hazards mitigation measure in Dhaka City.

The study has used both qualitative and quantitative methods and used the general sampling guidelines. A total sample size of 101 was considered in the study. Both households, such as those who live in high-rise buildings or semi-structured slums, as well as commercial representatives, such as RMG owners, shopping mall owners, employees, representatives of educational institutions, and hospital staff, are included in this sample size.

In order to examine the shortcomings in the management or mitigation strategies for fire accidents in the residential and commercial sectors in Dhaka, Bangladesh, the qualitative research approach has been used for subjective evaluation based on secondary sources.

About 47% of respondents claimed that the fire was an accident, followed by 24% who claimed that it was man-made, and 5.0% who claimed that it spread and caught organically. However, over 24% of respondents who typically reside in slums are unaware of the reasons why fire hazards exist.

Regretfully, Dhaka City is expanding in an unsafe and uncontrolled manner. To create a city that is safe and tranquil for its residents. Priority should be given to fire safety issues first. One or two organizations would find it extremely challenging to

manage the fire problem and offer all of their citizens help. Therefore, an integrated approach ought to be used. In this study, we discovered numerous causes of fire dangers.

Fire Safety Awareness and Management in Multi-Storey Student Hostels

This study assessed the perceptions of students on fire safety awareness and management in multi-story hostels around the Kwame Nkrumah University of Science and Technology (KNUST) campus in Ghana. It brings attention to the importance of achieving an acceptable level of fire safety in university students' hostels due to the devastating effects of fires

A questionnaire survey was conducted among continuing students living in 11 multi-story hostels around the KNUST campus. Data analysis was done using mean score rankings and percentages to evaluate the responses from the respondents.

The majority of the respondents did not prioritize fire safety in the hostels, leading to low awareness and management practices among occupants. It is important to practice fire safety management, such as storing flammable materials in safe areas, providing clear signage for exit routes and fire safety equipment, and regular inspection and maintenance of electrical installations and fire safety equipment. The essential function of fire safety management is preventing fire outbreaks and ensuring the safety of occupants in multi-story hostels. (Agyekum et al., 2016).

Knowledge and Practices regarding Fire Safety amongst Health Care Workers in Tertiary Care Teaching Hospital in Marathwada Region of Maharashtra

A study by Kulkarni et al. (2016) investigated the level of knowledge and firesafety practices among healthcare workers in a tertiary care teaching hospital in the Marathwada region of Maharashtra. The study aimed to assess their awareness,

preparedness, and adherence to fire safety protocols in a healthcare setting.

A cross-sectional study was carried out among 202 healthcare workers in a tertiary care teaching hospital in the Marathwada region.

The findings revealed that 96.4% of them knew exactly what to do in the event of a fire. Eighty-four percent of the respondents had never received any kind of training on fire safety preparedness, and the majority of respondents (86.5%) felt that staff members should receive basic training on the subject. Merely 48.2% of the participants possessed a sufficient understanding of fire safety readiness. Across all the institutions, the majority (83.3%) of the documentary materials (fire safety preparedness policy document, staff responsibility copies for fire management, evacuation plan, evacuation priority list, annual fire audit reports, and fire drill reports) were missing. Regular fire safety preparedness classes are necessary in order to address fire safety preparedness (Kulkarni et al., 2016).

Fire Risk Perception and Building Evacuation by Vulnerable Persons: Points of View of Laypersons, Fire Victims and Experts

This study investigated the fire risk perception among vulnerable groups and its influence on evacuation decisions.

The study employs qualitative research methods employs in the study to explore the perceptions and behaviors regarding fire risk and evacuation. Data were collected through interviews based on a structured questionnaire covering general, fire-related, and evacuation experience questions.

The individual-environment-risk paradigm, human and physical environments, and the safety climate in shaping fire risk perception. A building evacuation is perceived

as a psychological process involving both emotion and cognition, it contributes to existing literature on risk perception and evacuation behavior. Fire risk perception is a blend of psychometric and cultural paradigms, and evacuation decisions are influenced by a combination of subjective judgments, trust, and situational awareness. Understanding the nuanced perceptions of fire risk and evacuation among vulnerable individuals for developing effective evacuation strategies. The importance of trust and tailored communication, enhancing the safety and preparedness of vulnerable populations during fire emergencies (Tancogne- Dejean & Laclémence, 2015).

CHAPTER III

RESEARCH METHODOLOGY

This chapter presents the methods, design, population and locale of the study, data gathering tool, procedure, and treatment of data that was used.

Research Method and Design

This study employed a mixed research method, integrating elements of both quantitative and qualitative research. This approach is commonly used in behavioral, health, and social sciences, particularly in multidisciplinary settings and complex societal research. The mixed-method approach allows for a more comprehensive understanding of the topic by placing findings in context and providing richer details in the conclusions (George, 2021).

Specifically, the study utilized an explanatory sequential design, wherein quantitative data was collected first, followed by qualitative data to further elaborate on the quantitative findings with additional insights (Garnham et al., 2023). This design effectively captures the level of knowledge of students and employees at Data Center College of the Philippines regarding fire safety measures, ensuring a well-rounded analysis of their awareness and preparedness.

Population and Locale of the Study

This study involved a total of 459 respondents, comprising 374 students and 85 employees. The selection of respondents was carried out using simple random sampling to ensure an unbiased representation of the population. Additionally, nine participants were selected for an in-depth interview through purposive sampling, allowing for a more focused exploration of insights related to fire safety awareness and practices. The study

was conducted at Brgy. 1 San Lorenzo and Brgy. 8 Tupaz St., Laoag City, Ilocos Norte.

Data Gathering Tool

A survey questionnaire was utilized as the primary tool to assess the level of knowledge of the DCCP community regarding fire safety measures. The survey questionnaire was composed of two parts. Part one gathered information on the level of knowledge on the fire prevention and the second part gathered information on the level of knowledge on the fire suppression.

This was complemented by a secondary tool, an interview guide, which aimed to gain deeper insights into the factors influencing their knowledge of fire safety measures. Both instruments were researcher-made and underwent validation by an appropriate expert to ensure reliability and accuracy. Additionally, a recording device was used to document the statements of the participants for accurate data collection and analysis.

Data Gathering Procedure

The researchers initially prepared a letter of request for approval to conduct the study. Upon receiving approval, they printed multiple copies of the questionnaire. The researchers then met with the respondents, presented the approved letter, and provided an overview of the study's purpose. They distributed the printed questionnaires while offering explanations and clarifications on any terms to ensure the respondents fully understood the importance of the study.

Furthermore, the researchers reviewed the completed surveys to identify respondents with the highest and lowest levels of knowledge on fire safety measures. To gain deeper insights, follow-up interviews were conducted using an interview guide to explore the factors influencing their knowledge. Finally, the researchers tallied, tabulated,

and interpreted the collected data using both statistical and non-statistical methods to draw meaningful conclusions from the results.

Treatment of Data

The following statistical tools were used in the analysis and interpretation of data.

Mean. These tools were used in describing the level of knowledge within the DCCP community regarding fire prevention and suppression measures

Interpretation of the scores was based on the following:

Value	Scale	Descriptive Interpretation	Verbal Interpretation
5	4.21 - 5.00	High Knowledge	Have deep understanding of fire safety measures that they can apply effectively.
4	3.41 - 4.20	Good Knowledge	Have a good understanding of fire safety measures that they can apply in practical situations.
3	2.61 - 3.40	Moderate Knowledge	Have a basic understanding of fire safety measures; however, they may struggle to apply them.
2	1.81 - 2.60	Low Knowledge	Have a limited understanding of fire safety measures, which they may recall but cannot apply.
1	1.00 - 1.80	Poor Knowledge	Lack understanding of fire safety measures, which may cause them to struggle.

Moreover, thematic analysis was used in analyzing the data collected in a qualitative approach, thematic analysis is a highly popular technique among qualitative researchers for analyzing qualitative data, which usually comprises thick descriptive data (Naeem et al., 2023).

Ethical Consideration

Ethical considerations in research are a set of principles that guide research designs and practices. These principles include voluntary participation, informed consent, anonymity, confidentiality, potential for harm, and results of communication (Bhandari, 2021).

The researchers adhered to ethical principles throughout the study. Informed consent was obtained from all respondents and participants, ensuring that participation was voluntary and without coercion. The questionnaire and interview questions were

designed to be clear, concise, and comfortable for them to answer. To maintain confidentiality, their personal information was kept anonymous. These ethical practices were followed to prevent any harm to the respondents and participants and to ensure the integrity and reliability of the study, contributing to valid and meaningful results.

CHAPTER IV

PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This chapter presents the analysis and interpretation of the collected data from the respondents and participants of the study that correspond to the statement of the problem.

Level of Knowledge of DCCP Community on Fire Prevention Safety Measures

This section outlines the perceived knowledge of students and employees on their level of knowledge on fire prevention safety measures. The results are presented in tables 1 and 2.

Level of Knowledge of Students on Fire Prevention Safety Measures

The level of knowledge of students regarding fire prevention safety measures is essential in ensuring a safe environment. This section assesses students' awareness of fire hazards, safety equipment, and preventive practices

Table 1 reveals that the students possess a high level of knowledge regarding fire prevention safety measures, as indicated by an overall mean score of 4.23, which is interpreted as high knowledge. This finding is supported by the mean scores across all indicators, which range from 3.81 (Good Knowledge) to 4.61 (High Knowledge).

A closer examination of the individual items shows that the highest mean score of 4.61 was associated with the statement, "I know that papers, wood, plastics, chairs, tables, curtains, and other flammable or combustible materials are fire hazards." Conversely, the lowest mean score of 3.81 was found for the statement, "I know where the portable fire extinguishers, fire hose, standpipes, and other fire safety equipment are placed in the school." Despite this, the overall results suggest that the students have a comprehensive understanding of fire safety.

Table 1. Level of Knowledge of Students on Fire Prevention Safety Measures (n=374)

No	Description	Weighted Mean	Descriptive Interpretation
1	I am aware of the fire hazard that exists in my environment.	4.05	Good Knowledge
2	I know that papers, woods, plastics, chairs, tables, curtains, and other flammable or combustible materials are fire hazards.	4.61	High Knowledge
3	I know that a loose electric connection is also a kind of fire hazard.	4.36	High Knowledge
4	I take good care in handling laboratory equipments, cooking media, and other items used in school that can cause fire.	4.36	High Knowledge
5	I turned off the lights, unplugged electric fans, and other electrical equipment before leaving the classroom.	4.44	High Knowledge
6	I understand the importance of maintaining a clean and organized classroom to prevent fires	4.47	High Knowledge
7	I know where the portable fire extinguishers, fire hose, standpipes, and other fire safety equipment placed in school.	3.81	Good Knowledge
8	I am familiar toall the exit routes in school.	4.09	Good Knowledge
9	I am confident in my ability to evacuate the building safely in case of a fire.	4.10	Good Knowledge
10	I understand the use of fire safety equipment in preventing fires.	4.06	Good Knowledge
Overall Weighted Mean		4.23	High Knowledge

Legends:

Value	Scale	Descriptive Interpretation	Verbal Interpretation
5	*4.21 - 5.00*	*High Knowledge*	*Have deep understanding of fire safety measures that they can apply effectively.*
4	*3.41 - 4.20*	*Good Knowledge*	*Have a good understanding of fire safety measures that they can apply in practical situations.*
3	*2.61 - 3.40*	*Moderate Knowledge*	*Have a basic understanding of fire safety measures; however, they may struggle to apply them.*
2	*1.81 - 2.60*	*Low Knowledge*	*Have a limited understanding of fire safety measures, which they may recall but cannot apply.*
1	*1.00 - 1.80*	*Poor Knowledge*	*Lack understanding of fire safety measures, which may cause them to struggle.*

The findings imply that the students not only have a solid grasp of fire hazards, such as flammable materials and loose electrical connections, but they also understand the importance of proper safety measures. Furthermore, they recognize the significance of turning off laboratory equipment, cooking media, lights, and unplugging electrical devices before leaving the classroom to prevent potential fire risks.

According to Kodur et al. (2020), fire safety drills are the most direct way to improve fire safety education. Occupants should be provided with basic knowledge of available fire escape routes, fire safety symbols, location of fire extinguishers, and places of assembly in case of fire. In social learning theory, students and employees can learn about fire safety by observing and imitating others. When they see positive reinforcement

for practicing fire safety, they are most likely to adopt those behaviors. On the other hand, witnessing negative consequences for improper fire safety practices can discourage them.

Level of Knowledge of Employees on Fire Prevention Safety Measures

The level of knowledge among employees regarding fire prevention safety measures plays a crucial role in maintaining a safe workplace. This section evaluates the employees' awareness of fire hazards, safety protocols, and fire prevention strategies. The employees demonstrated a high level of knowledge regarding fire prevention safety measures, as reflected by the overall weighted mean of 4.49. This is further supported by the mean scores of the various indicators, which range from 4.18 (Good Knowledge) to 4.85 (High Knowledge).

The highest mean score of 4.85 was associated with the statement, "I know that papers, wood, plastics, chairs, tables, curtains, and other flammable or combustible materials are fire hazards." On the other hand, the lowest mean score of 4.18 was found for the statement, "I know where the portable fire extinguishers, fire hoses, standpipes, and other fire safety equipment are placed in the school." Nevertheless, these results suggest that the employees possess a strong overall understanding of fire safety measures.

Table 2. Level of Knowledge of Employees on Fire Prevention Safety Measures (n=85)

No	Description	Weighted Mean	Descriptive Interpretation
1	I am aware of the fire hazard that exist in my environment.	4.59	High Knowledge
2	I know that papers, woods, plastics, chairs, tables, curtains, and other flammable or combustible materials are fire hazards.	4.85	High Knowledge
3	I know that a loose electric connection is also a kind of fire hazard.	4.71	High Knowledge
4	I take good care in handling laboratory equipments, cooking media, and other items used in school that can cause fire.	4.54	High Knowledge
5	I turned off the lights, unplugged electric fans, and other electrical equipment before leaving the classroom.	4.69	High Knowledge
6	I understand the importance of maintaining a clean and organized classroom to prevent fires	4.67	High Knowledge
7	I know where the portable fire extinguishers, fire hose, standpipes, and other fire safety equipment placed in the school.	4.18	Good Knowledge
8	I am familiar to all the exit routes in school.	4.18	Good Knowledge
9	I am confident in my ability to evacuate the building safely in case of a fire.	4.28	Good Knowledge
10	I understand the use of fire safety equipment in preventing fires.	4.26	High Knowledge
Overall Weighted Mean		4.49	High Knowledge

Legends:

Value	Scale	Descriptive Interpretation	Verbal Interpretation
5	*4.21 - 5.00*	*High Knowledge*	*Have deep understanding of fire safety measures that they can apply effectively.*
4	*3.41 - 4.20*	*Good Knowledge*	*Have a good understanding of fire safety measures that they can apply in practical situations.*
3	*2.61 - 3.40*	*Moderate Knowledge*	*Have a basic understanding of fire safety measures; however, they may struggle to apply them.*
2	*1.81 - 2.60*	*Low Knowledge*	*Have a limited understanding of fire safety measures, which they may recall but cannot apply.*
1	*1.00 - 1.80*	*Poor Knowledge*	*Lack understanding of fire safety measures, which may cause them to struggle.*

The findings emphasize their high awareness of potential fire hazards within their environment, as well as their clear understanding of the importance of fire safety equipment in preventing fires. The employees demonstrate caution when handling laboratory equipment and cooking media. They also maintain a clean and organized classroom environment, minimizing the risk of fire hazards from common flammable or combustible materials such as papers, wood, plastics, and other items found in schools. Furthermore, employees consistently turn off lights, unplug electric fans, and disconnect other electrical equipment before leaving the classroom, demonstrating their recognition of the potential fire hazards posed by loose electrical connections.

These consistent actions in adhering to fire safety protocols indicate that employees are highly knowledgeable in fire prevention practices. As noted by Hassanain et al. (2022), the actions, ignorance, and inadequate workplace safety management by occupiers can contribute to an increased fire risk. Therefore, fire safety risk assessments are crucial in promoting workplace fire safety culture and equipping staff with the necessary training to respond effectively to fire emergencies.

Level of Knowledge of DCCP Community on Fire Suppression Safety Measures

This section outlines the perceived knowledge of students and employees on their level of knowledge on fire suppression safety measures. The results are presented in tables 3 and 4.

Level of Knowledge of Students on Fire Suppression Safety Measures

The level of knowledge among students regarding fire suppression safety measures is critical to ensuring they can respond effectively in fire-related emergencies. This section explores students' awareness of fire suppression systems as well as the proper procedures for their use.

The results show that students possess a good level of knowledge regarding fire suppression safety procedures, with an overall mean score of 3.85. This is further supported by individual mean scores ranging from 3.51 (Good Knowledge) to 4.22 (High Knowledge).

Table 3. Knowledge of Students on the Fire Suppression Safety Measures n=374

No	Description	Weighted Mean	Descriptive Interpretation
1	I understand the importance of early fire detection and reporting.	4.15	Good Knowledge
2	I alarm the others when there is a fire emergency by triggering the fire alarm.	4.22	High Knowledge
3	There are different types of portable fire extinguishers, and I can determine which type of portable fire extinguisher is appropriate to use for such a class of fire.	3.65	Good Knowledge
4	I am confident to use the portable fire extinguisher properly without any hesitation.	3.62	Good Knowledge
5	I know when to escape the building when the fire cannot be fought by a portable fire extinguisher and other fire safety equipment	3.97	Good Knowledge
6	I call immediately the Bureau of Fire Protection in times of fire emergency.	4.21	High Knowledge
7	I know how to help others evacuate safely during a fire broke out.	4.00	Good Knowledge
8	I am confident to perform first aid and CPR.	3.51	Good Knowledge
9	I know what to do in case I was trap or caught by fire.	3.63	Good Knowledge
10	I know the proper procedures in using fire hose and standpipes.	3.52	Good Knowledge
Overall Weighted Mean		3.85	Good Knowledge

Legends:

Value	Scale	Descriptive Interpretation	Verbal Interpretation
5	*4.21 - 5.00*	*High Knowledge*	*Have deep understanding of fire safety measures that they can apply effectively.*
4	*3.41 - 4.20*	*Good Knowledge*	*Have a good understanding of fire safety measures that they can apply in practical situations.*
3	*2.61 - 3.40*	*Moderate Knowledge*	*Have a basic understanding of fire safety measures; however, they may struggle to apply them.*
2	*1.81 - 2.60*	*Low Knowledge*	*Have a limited understanding of fire safety measures, which they may recall but cannot apply.*
1	*1.00 - 1.80*	*Poor Knowledge*	*Lack understanding of fire safety measures, which may cause them to struggle.*

The highest mean score of 4.22 was associated with the statement, "I alarm the others when there is a fire emergency by triggering the fire alarm." In contrast, the lowest mean score of 3.51 was recorded for the statement, "I am confident to perform first aid and CPR." Despite this, the overall results suggest that students have a solid understanding of fire safety measures.

The findings indicate that students have a practical understanding of fire safety that they can apply in real-life situations. Their knowledge includes the importance of

early fire detection and reporting, as well as the ability to identify the appropriate portable fire extinguishers for different classes of fire. They also demonstrate confidence in executing procedures involving fire hoses and standpipes. Additionally, students understand when to evacuate a building in the event of an uncontrollable fire, emphasizing safe evacuation practices and helping others. Furthermore, their knowledge of first aid and CPR equips them to assist in emergencies involving trapped individuals.

These findings suggest that students are well-prepared to respond effectively in the event of a fire emergency. According to a survey conducted by Fu (2023), 19.45% of students would choose to escape, while 36.89% would escape directly and activate the alarm during a fire emergency. Additionally, the Protection Motivation Theory posits that an individual's response to a fire emergency is influenced by the interaction of their threat and coping appraisals, ultimately affecting the likelihood of taking the necessary precautions.

Level of Knowledge of Employees on Fire Suppression Safety Measures

This section presents the perceived knowledge of employees, assessing their understanding of Fire Suppression.

Table 4 shows that employees demonstrated a high level of knowledge regarding fire suppression safety measures, as evidenced by an overall mean score of 4.21. This is further supported by the individual indicators, which range from 3.85 (Good Knowledge) to 4.61 (High Knowledge).

Table 4. Level of Knowledge of Employees on Fire Suppression Safety Measures (n=85)

No	Description	Weighted Mean	Descriptive Interpretation
1	I understand the importance of early fire detection and reporting.	4.59	High Knowledge
2	I alarm the others when there is a fire emergency by triggering the fire alarm.	4.61	High Knowledge
3	There are different types of portable fire extinguishers, and I can determine which type of portable fire extinguisher is appropriate to use for such a class of fire.	4.00	Good Knowledge
4	I am confident to use the portable fire extinguisher properly without any hesitation.	4.07	Good Knowledge
5	I know when to escape the building when the fire cannot be fought by portable fire extinguisher and other fire safety equipment.	4.40	High Knowledge
6	I call immediately the Bureau of Fire Protection in times of fire emergency.	4.42	High Knowledge
7	I know how to help others evacuate safely during a fire broke out.	4.28	High Knowledge
8	I am confident to perform first aid and CPR.	3.85	Good Knowledge
9	I know what to do in case I was trap or caught by fire.	3.98	Good Knowledge
10	I know the proper procedures in using fire hose and standpipes.	3.86	Good Knowledge
Overall Weighted Mean		4.21	High Knowledge

Legends:

Value	Scale	Descriptive Interpretation	Verbal Interpretation
5	*4.21 - 5.00*	*High Knowledge*	*Have deep understanding of fire safety measures that they can apply effectively.*
4	*3.41 - 4.20*	*Good Knowledge*	*Have a good understanding of fire safety measures that they can apply in practical situations.*
3	*2.61 - 3.40*	*Moderate Knowledge*	*Have a basic understanding of fire safety measures; however, they may struggle to apply them.*
2	*1.81 - 2.60*	*Low Knowledge*	*Have a limited understanding of fire safety measures, which they may recall but cannot apply.*
1	*1.00 - 1.80*	*Poor Knowledge*	*Lack understanding of fire safety measures, which may cause them to struggle.*

The highest mean score of 4.61 was recorded for the statement, "I alarm the others when there is a fire emergency by triggering the fire alarm." In contrast, the lowest mean score of 3.85 was found for the statement, "I am confident to perform first aid and CPR," which still indicates that employees possess a good level of knowledge.

These results highlight employees' strong understanding of the importance of early fire detection and reporting. Employees consistently demonstrate this by promptly

alerting others during a fire emergency, activating fire alarms, and assisting in the safe evacuation of others. Additionally, they display a clear understanding of the proper procedures for contacting the Bureau of Fire Protection during an emergency. Employees also know when to evacuate the building, particularly in situations where the fire cannot be effectively controlled using portable fire extinguishers or other safety equipment.

According to Robinson et al. (2022), emergency communications aim to reduce risk by improving situational awareness and guiding potential responses. However, the effectiveness of these communications may vary depending on factors such as timing, the ability to grasp the situation, and the choice of exit. Furthermore, Rational Choice Theory supports this outcome, suggesting that employees' rational decision-making and good judgment can prevent fire occurrences. Knowing the correct procedures to follow without hesitation allows them to act confidently and effectively when it comes to fire safety.

Factors that influence the level of knowledge of the DCCP community on fire prevention and fire suppression safety measures

This section presents the formulated themes that address the factors influencing the participants' knowledge of fire safety measures, encompassing both fire prevention and fire suppression practices.

The DCCP community, comprising both students and employees, identified three key themes: Education, Training, and Self-Awareness.

Education

Education is the cultivation of learning and change, undertaken with the belief that everyone should have the opportunity to participate fully in life (Smith, 2024). Through education, individuals gain the ability to identify risks, enabling them to select

the appropriate equipment, implement suppression strategies, and safely address various types of fires. This understanding minimizes damage and saves lives. In the context of fire safety, education refers to the knowledge gained through their studies, where fire safety measures are integrated into the curriculum, as well as through their social networks.

This is supported by Participant No. 7, 5, and 9.

As Participant No. 7 from the Criminology Department shared,

"Adda ngamin subject mi idi nga Fire Protection and Arson Investigation, dijay ko nga na amwan nu ana dagijay combustible materials nga mang fuel iti fire."

[We have a subject called Fire Protection and Arson Investigation, where I learned about the combustible materials that fuel fires.]

Moreover, Participant No. 5 from BEED department stated that;

"Dagiti banag nga mangteted kanyak iti nalawa nga pannakaamo iti fire safety measures ket contribution ti pammagbaga iti nagannak mi kada mabuybuya mi dita social network."

[The factors contributing to my extensive knowledge of fire safety measures include the valuable advice from my parents and the information I have gained from social networks.]

Additionally, Participant No. 9 from the Criminology Department disclosed that,

> ***"Adda nukwa mabuy buyak dijay facebook nga ways iti pinag prevent iti fire ken adda pay dagijay mabas basak nukwa nga ways manen iti pinag prevent iti apoy, kaspagarigan aguksot iti saksakan ken agiddep kandela nu haan nga mausar.***

[I often watch videos and posts on Facebook related to fire prevention, such as tips on unplugging appliances and blowing out candles when not in use.]

The results of the study implies that the knowledge of the participant on implies that fire safety measures is influenced by both formal education and informal sources, such as advice from parents and social media content. This suggests a well-rounded approach to learning, where practical tips and insights from family, as well as broader awareness gained from online resources, contribute to your understanding of fire prevention. Additionally, it indicates that you actively engage with fire safety information, reflecting a proactive attitude toward staying informed and applying safety practices in everyday life.

One of the causes of fires is a need for a more sufficient understanding of fire safety. Students have a responsibility to study diligently and ensure that they are in a healthy, safe, and comfortable environment at school. Every student should know how to avoid dangers that could jeopardize their safety. Fire safety training and education are necessary for fire prevention and management within the fire management system. This training should be provided to students, educators, and

school staff to enhance their awareness of how to extinguish fires, evacuate, and recover from fires (Situngkir, et al., 2024).

Training

Training equips individuals with practical skills to identify hazards, respond promptly and effectively in emergencies, and adopt preventive measures. It enables individuals to use firefighting equipment, implement evacuation plans, and administer first aid, ultimately saving lives and protecting property. In the context of this study, training refers to the knowledge and skills gained from participating in activities related to fire safety measures. This is supported by Participants 1, 2, 4, and 6, who highlight the importance of such training in enhancing their fire safety awareness and capabilities.

As Participant No. 1 from Criminology Department stated that,

"Agpar-participate nak kadagijay fire drills iti iskwela idi highschool nak, ibaga ni mestra mi idi nu ana iti ubraen kaspagarigan nu adda mapasamak nga uram."

[I've always participated in fire drills during high school, where our teacher would also brief us on the proper actions to take in the event of a fire.

Moreover, Participant No. 2 from the Criminology Department claimed that,

"Ag lecture da umuna ken ag demo then ipa padas da kanyami, kaslang kuma deta tangke, pagapuyen da tapos dakam mang patay through the use of wet cloth"

[They would first lecture and demonstrate, and then allow us to practice. For example, they would ignite a gas tank and then let us suppress the fire using a wet cloth.

Furthermore, Participant No. 4 from the IT Department disclosed that

"Idi ngamin Senior High kami, nag immersion kami dijay BFP Piddig, diyay ko nga napadas ken nasursuro nu kasanut agpatay ti apuy and nu anat usaren nga pang patay ti apuy"

[During our Senior High years, we had the opportunity to experience and learn how to extinguish fires and the proper methods for doing so through our work immersion at BFP Piddig.]

Additionally, Participant No. 6 from the Criminology Department asserts that,

"Nag join nak ngamin iti junior fire marshall diyay BNCHS sir ket diyay nga insuro da iti pinag first aid, CPR ken pinag rescue. Dakami pay nukwa iti mangi le-lead nu adda ti fire drills nga ma-angay."

[I joined the Junior Fire Marshall program in high school, where we were taught CPR, first aid, and rescue techniques. Additionally, we took the lead in organizing and conducting fire drills.)

The result implies that training plays a crucial role in equipping one with practical skills and knowledge in fire safety. The involvement in activities such as fire drills, first aid and CPR training, and work immersion suggests that hands-on experience and real-world practice are essential components of fire safety education. This type of training not only enhances technical ability to respond to emergencies but also fosters leadership skills. Overall, it indicates that practical training helps solidify theoretical knowledge and prepares individuals to effectively handle fire-related

situations.

One key component of fire safety in educational institutions is the regular conduct of fire drills. These drills not only familiarize students and staff with evacuation procedures but also help them respond calmly and efficiently during a real emergency. In addition, it is crucial to ensure that all fire safety equipment, such as fire alarms and extinguishers, are regularly maintained and remain in working condition (Kaushal, 2023).

Self-Awareness

Self- awareness empowers individuals to recognize their role in fire safety, identify potential risks, and take proactive measures. By understanding their environment, behaviors, and limitations, individuals can spot hazards, make informed decisions, and respond effectively in emergencies. This, in turn, reduces the risk of fires and helps save lives. In the context of this study, self-awareness refers to personally knowing and understanding fire safety measures. This is supported by the statements of Participants 2, 3, 4, and 6.

As Participant No. 2 from Criminology Department states that,

> ***"Ammuk iti ayan da ta kanayun ko nga makita, ken ammuk usaren dagita ta malagip ko pelang met dagijay naisur suro idi agbas basa nak pelang."***

[I know where the fire safety equipment is located because I can easily see it, and I am familiar with how to use it. Additionally, I still recall the knowledge I gained as a student regarding its proper use.)

Also, Participant No. 3 from Criminology Department claimed that,

"Kas maysa nga empleyado, ammok nga dagituy nga banag iti kangrunaan nga mauram nu maipanggep iti apoy aglalo ket adda tay dituy establismento nga prone iti fire incidents ngamin ket dagituy dagijay banag nga nalaka nga mauram."

[As an employee, I know that these are the main materials that are likely to burn in the event of a fire. This is particularly important in our establishment, which is prone to fire incidents, as these are the items that are most easily combustible.)

Moreover, Participant No. 4 from the IT Department shared that,

"Ammok nga ti danum iti nangruna nga mang patay iti apoy ta kasjay pang sebsebseb mi nukwa kadagijay sungrod mi nga kayo nu malpas kami nga ag luto"

[I know that water is an effective way to extinguish fire because we use it to put out the flames on the wood we use as fuel after cooking.)

Additionally, Participant No. 6 from the Criminology Department asserts that,

"Kasmakitak met detuy ag lawlaw ko, aware nak nga dagita nagango nga kay kayo kada bulbulong ket nalaka nga mauram aglalo nu napudot iti panawen, ken ammuk nga danum iti nangruna a pang sebseb kadetuy nga uram"

[As I observe my surroundings, I am aware that dead branches and dried leaves can easily ignite, especially during hot weather. I also know that water is the primary substance used

to suppress fire.)

The results imply that the DCCP community have a strong awareness of fire hazards in the environment and the appropriate methods for fire prevention and suppression. They recognize that certain materials, like dead branches and dried leaves, are highly flammable, particularly in hot weather. Additionally, they understand the fundamental role of water in extinguishing fires, highlighting their practical knowledge of fire safety. This indicates that they are observant, proactive, and knowledgeable about how to prevent and respond to fire risks in the surroundings.

Experiences may have enhanced individuals' abilities and procedures during actual fire incidents. Those with a deeper understanding of fire safety are more likely to use fire extinguishers correctly, follow proper evacuation protocols, and maintain a clean and organized environment to reduce fire risks (Delaliarte et al., 2024).

Strategic Plan: “Safe School Is Our Desire; Fire Prevention and Suppression is Self-Enforced”

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Rationale

Fire is a powerful force with both destructive and constructive potential, and its volatility presents significant risks. In the Philippines, a country prone to natural disasters, effective fire mitigation practices are crucial to prevent, reduce, or eliminate fire hazards, thereby safeguarding human life, property, and the environment. Fire safety is a collective responsibility that requires individuals and communities to implement precautions such as training, evacuation drills, and awareness programs. Schools, with their abundance of combustible materials, are particularly vulnerable, making proactive fire safety measures essential to protect students and staff. The devastating consequences of fire extend beyond immediate damage, with long-term economic and emotional impacts, underscoring the importance of preparedness and effective response strategies (Muico et al., 2024; Hassanain et al., 2022).

The knowledge of the DCCP community regarding fire safety measures has been thoroughly assessed. Students exhibit a high level of understanding in fire prevention safety measures and a good level of knowledge in fire suppression safety measures. Meanwhile, employees consistently demonstrate a high level of proficiency in both fire prevention and suppression safety measures. As a place of learning, a school must prioritize safety, and while the DCCP community's fire safety knowledge is commendable, it is essential to maintain and further strengthen this knowledge. This will ensure the continued safety of all members of the DCCP community and promote a secure environment for both students and staff.

Objective

The objective of this strategic plan is to continuously improve and strengthen the knowledge of fire safety measures among the students and employees of the Data Center College of the Philippines in Laoag City, Inc. This plan aims to ensure that all members of the community are well-informed and equipped to prevent, respond to, and mitigate fire-related incidents, fostering a safer and more secure environment for everyone.

Strategy

The following strategies will be implemented to continuously enhance the DCCP Community's knowledge of fire safety measures, ensuring ongoing awareness, preparedness, and effective response in fire-related situations.

- **Regular Fire Safety Training and Workshops.** Organize periodic fire safety training sessions for both students and employees, covering topics like fire prevention, fire suppression techniques, evacuation procedures, and the use of fire safety equipment. These sessions should include hands-on demonstrations and practical applications to ensure participants gain real-world skills.
- **Fire Drills and Emergency Simulations.** Coordinate with the Fire Bureau to conduct semi-annual fire drills in simulated scenarios. These drills should be varied to simulate different scenarios, ensuring everyone knows how to react in a variety of fire situations.
- **Awareness Campaigns and Information Dissemination.** Launch fire safety awareness campaigns, including posters, videos, and online

content, to continually reinforce important fire safety tips and procedures. Make use of social media platforms to reach a wider audience, engaging students and employees with regular updates and reminders.

- **Collaborations with Fire Safety Experts.** Coordinate with the Bureau of Fire Protection and/or City Disaster Risk Reduction Management Office to conduct seminars. These professionals can provide valuable insights and real-world experiences that will deepen the community's understanding of fire safety measures.
- **Fire Safety Equipment Accessibility and Familiarization.** Ensure that fire safety equipment, such as fire extinguishers, alarms, and fire hoses, is easily accessible and that everyone in the community is familiar with their location and proper use. Regular checks and demonstrations should be conducted to ensure the equipment is in good working condition.

Strategic Plan: "Safe School Is Our Desire; Fire Prevention and Suppression is Self-Enforced" **(MATRIX)**

Title: Safe School Is Our Desire; Fire Prevention and Suppression is Self-Enforced
Target Audience: DCCP Community

Objectives	Activities	Strategies	Persons Involved	Budgetary Allocation
These sessions should include hands-on demonstrations and practical applications to ensure participants gain real-world skills.	Regular Fire Safety Training and Workshops	Organize periodic fire safety training sessions for both students and employees, covering topics like fire prevention, fire suppression techniques, evacuation procedures, and the use of fire safety equipment.	Students, Employees and the BFP Personnel	Php 5,000.00
These drills should be varied to simulate different scenarios, ensuring everyone knows how to react in a variety of fire situations.	Fire Drills and Emergency Simulations	Coordinate with the Fire Bureau to conduct semi-annual fire drills in simulated scenarios. These drills should be varied to simulate different scenarios, ensuring everyone knows how to react in a variety of fire situations.	Students, employees, and the BFP personnel	Php 5,000.00
Make use of social media platforms to reach a wider audience, engaging students and employees with regular updates and reminders.	Awareness Campaigns and Information Dissemination.	Launch fire safety awareness campaigns, including posters, videos, and online content, to continually reinforce important fire safety tips and procedures.	Students and Employees	Php. 5,000.00
These professionals can provide valuable insights and real-world experiences that will deepen the community's understanding of fire safety measures.	Collaborations with Fire Safety Experts	Coordinate with the Bureau of Fire Protection and/or City Disaster Risk Reduction Management Office to conduct seminars.	DCCP and BFP	Php. 2,000.00
Ensure that fire safety equipment such as fire extinguishers, alarms, and fire hoses, is easily accessible and that everyone in the community is familiar with their location and proper use	Fire Safety Equipment Accessibility and Familiarization..	Regular checks and demonstrations should be conducted to ensure the equipment is in good working condition.	Students and Employees	Php. 2,000.00

CHAPTER V

SUMMARRY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the research summary, conclusions, and recommendations of the study about the Knowledge of the DCCP Community on Fire Safety Measures

Summary of the Findings

This study aims to assess the level of knowledge on fire safety measures among students and employees of Data Center College of the Philippines (DCCP) of Laoag City Inc., with a focus on their awareness and understanding of fire prevention and fire suppression safety measures.

The findings revealed that both students and employees of the DCCP community demonstrated a high level of knowledge regarding fire prevention safety measures, as reflected in their overall mean scores of 4.23 and 4.49, respectively. In terms of fire suppression safety measures, students exhibited a good level of knowledge, with a mean score of 3.85, while employees displayed a high level of proficiency, scoring 4.21.

Furthermore, the study identified three key factors influencing their knowledge of fire safety measures: Education, Training, and Self-Awareness**.** These elements played a crucial role in shaping the community's preparedness and response capabilities in fire-related emergencies.

Conclusion

In conclusion, the study highlights that both students and employees of DCCP Laoag City Inc. possess a strong understanding of fire safety measures, particularly in fire prevention, where they demonstrated high levels of knowledge. While students

exhibited a good level of awareness in fire suppression, employees displayed a higher proficiency in this area. The findings emphasize the crucial role of education, training, and self-awareness in enhancing fire safety knowledge within the community. These results underscore the importance of continuous fire safety programs and initiatives to further strengthen preparedness and response capabilities in fire emergencies.

Recommendation

The following are therefore recommended:

The Data Center College of the Philippines

1. To conduct regular fire safety training and drills to reinforce knowledge on fire prevention and suppression, ensuring both students and employees are well-prepared for emergencies.
2. To ensure that fire extinguishers, alarms, and emergency exits are easily accessible, properly maintained, and that safety protocols are clearly communicated across the campus.
3. To adapt the Strategic Plan to continuously improve and strengthen the knowledge of fire safety measures among the students and employees of the Data Center College of the Philippines in Laoag City, Inc.

To the DCCP Community

1. To actively engage in fire drills, hands-on training, and awareness programs to enhance their ability to respond effectively in emergencies.
2. To foster responsible practices such as proper handling of electrical equipment, reporting fire hazards, and adhering to fire safety guidelines to minimize fire risks.

3. To continuously seek information on fire prevention and suppression techniques through workshops, online resources, and training sessions to stay informed about best practices.

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APPENDICES

APPENDICES "A"

DATA CENTER COLLEGE OF THE PHILIPPINES
COLLEGE OF CRIMINAL JUSTICE EDUCATION
LAOAG CITY

August 24, 2024

Cherry Joy M. Tadeo
School Registrar
Data Center College of the Philippines
Laoag City

Ma'am,
Christian Greetings!

We, the Data Center College of the Philippines, Laoag City, Inc. Criminology Students, are currently working on a research study entitled "Knowledge of DCCP Community on Fire Safety Measures". The purpose of this study is to determine the level of fire safety measure knowledge among employees, including teaching and non-teaching staff, and students across the board.

The population of the study is very important to carry out a study therefore, we are humbly writing to request a copy of the students list for the 1st semester A.Y. 2024-2025 for the study's sample size.

We are looking forward to your positive response, which will have a significant impact on the completion of this study. Thank you very much!

Sincerely,

Researchers:

DENNIELLE NICOLLIE CADANO

ARYANA MAY S. LAGPACAN

CARL ANGELO B. LUMANG

MARK JOHN U. NATIVIDAD

RICA MAE B. GARASI

Noted by:

8-24-24

Ms. JESSICA A. ACERET
Research Adviser

RECEIVED 08/24/24

APPENDICES "B"

DATA CENTER COLLEGE OF THE PHILIPPINES
COLLEGE OF CRIMINAL JUSTICE EDUCATION
LAOAG CITY

August 29, 2024

Mr. Danilo T. Dumlao
Head of Student Affairs
Data Center College of the Philippines
Laoag City

Sir,
Christian Greetings!

We, the Data Center College of the Philippines, Laoag City, Inc. Criminology Students, are currently working on a research study entitled "Knowledge of DCCP Community on Fire Safety Measures". The purpose of this study is to determine the level of fire safety measure knowledge among employees, including teaching and non-teaching staff, and students across the board.

The population of the study is very important to carry out a study therefore, we are humbly writing to request a copy of the employees list for the 1st semester A.Y. 2024-2025 for the study's sample size.

We are looking forward to your positive response, which will have a significant impact on the completion of this study. Thank you very much!

Sincerely,

Researchers:

DENNIELLE NICOLLIE CADANO

ARYANA MAY S. LAGPACAN

CARL ANGELO B. LUMANG

MARK JOHN U. NATIVIDAD

RICKMAE B. GARASI

Noted by:

Ms. JESSICA A. ACERET 8-29-24
Research Adviser

APPENDICES "C"

DATA CENTER COLLEGE OF THE PHILIPPINES
COLLEGE OF CRIMINAL JUSTICE EDUCATION
LAOAG CITY

August 24, 2024

FCINSP CLAIRE C SIMBOL
City Fire Marshal
Laoag City Fire Marshal

Ma'am,
Christian Greetings!

We, the Data Center College of the Philippines, Laoag City, Inc. Criminology Students, are currently working on a research study entitled "Knowledge of DCCP Community on Fire Safety Measures". The purpose of this study is to determine the level of fire safety measure knowledge among employees, including teaching and non-teaching staff, and students across the board. In gathering data for this study, we create a questionnaire that should be validated by an appropriate validator that has knowledge on the fire safety measures.

In connection with this study, we humbly request to your good office to validate our research questionnaire for a better gathering of data. This is very helpful to us students conducting research to use a questionnaire that is validated by a professional that is an expert in the field of fire.

We are looking forward to your positive response, which will have a significant impact on the completion of this study. Thank you very much!

Sincerely,

Researchers:

DENNIELLE NICOLLIE CADANO

ARYANA MAY S. LAGPACAN

CARL ANGELO B. LUMANG

MARK JOVIN U. NATIVIDAD

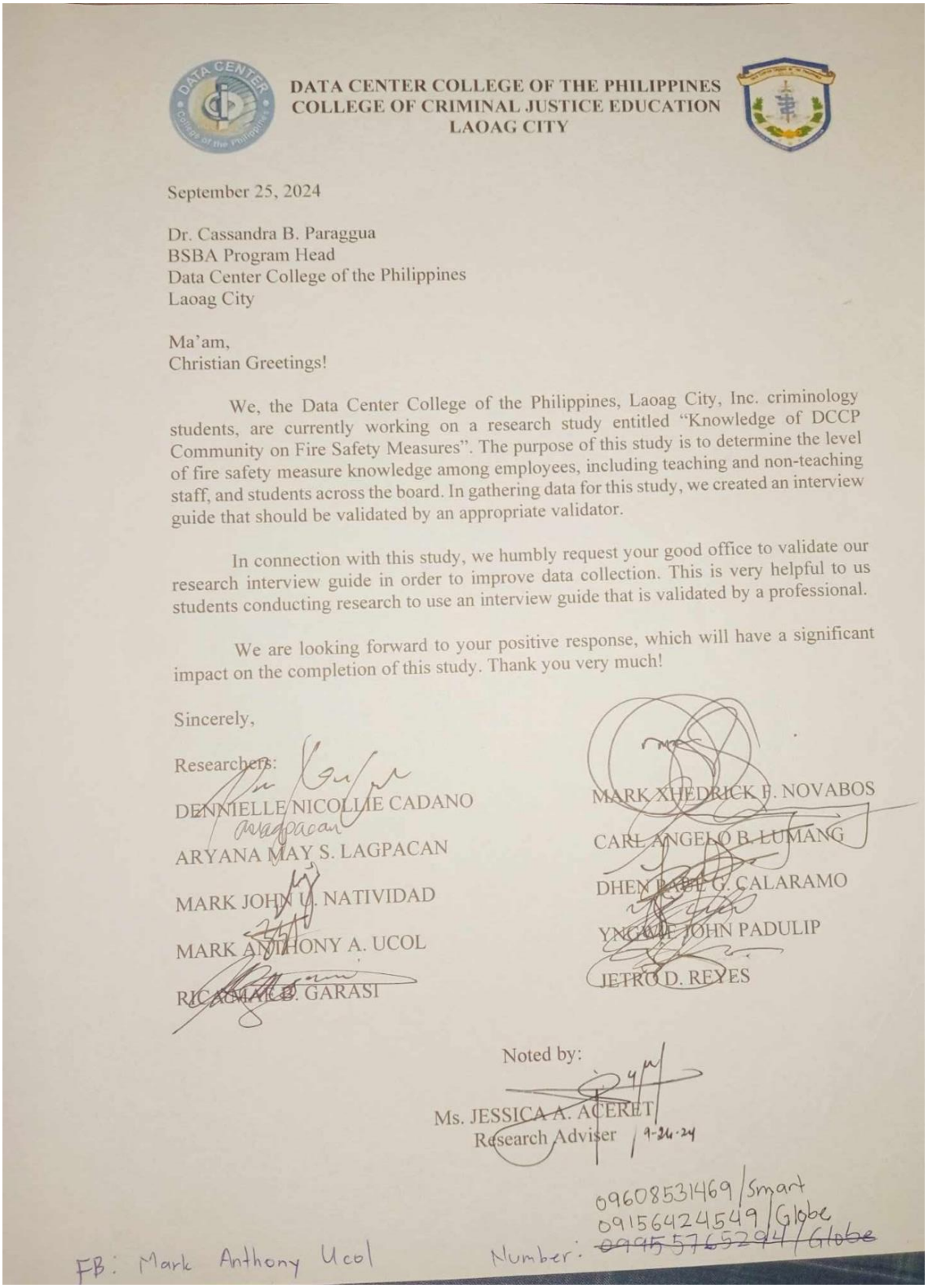
RICA MAE B. GARASI

Noted by:

8-24-24

Ms. JESSICA A. ACERET
Research Adviser

APPENDICES "D"



DATA CENTER COLLEGE OF THE PHILIPPINES
COLLEGE OF CRIMINAL JUSTICE EDUCATION
LAOAG CITY

September 25, 2024

Dr. Cassandra B. Paraggua
BSBA Program Head
Data Center College of the Philippines
Laoag City

Ma'am,
Christian Greetings!

We, the Data Center College of the Philippines, Laoag City, Inc. criminology students, are currently working on a research study entitled "Knowledge of DCCP Community on Fire Safety Measures". The purpose of this study is to determine the level of fire safety measure knowledge among employees, including teaching and non-teaching staff, and students across the board. In gathering data for this study, we created an interview guide that should be validated by an appropriate validator.

In connection with this study, we humbly request your good office to validate our research interview guide in order to improve data collection. This is very helpful to us students conducting research to use an interview guide that is validated by a professional.

We are looking forward to your positive response, which will have a significant impact on the completion of this study. Thank you very much!

Sincerely,

Researchers:

DENNIELLE NICOLLIE CADANO
ARYANA MAY S. LAGPACAN
MARK JOHN U. NATIVIDAD
MARK ANTHONY A. UCOL
RICARMAE B. GARASI
MARK XHEDRICK F. NOVABOS
CARL ANGELO B. LUMANG
DHEN PAUL G. CALARAMO
YNGWIE JOHN PADULIP
JETRO D. REYES

Noted by:

Ms. JESSICA A. ACERET
Research Adviser 9-24-24

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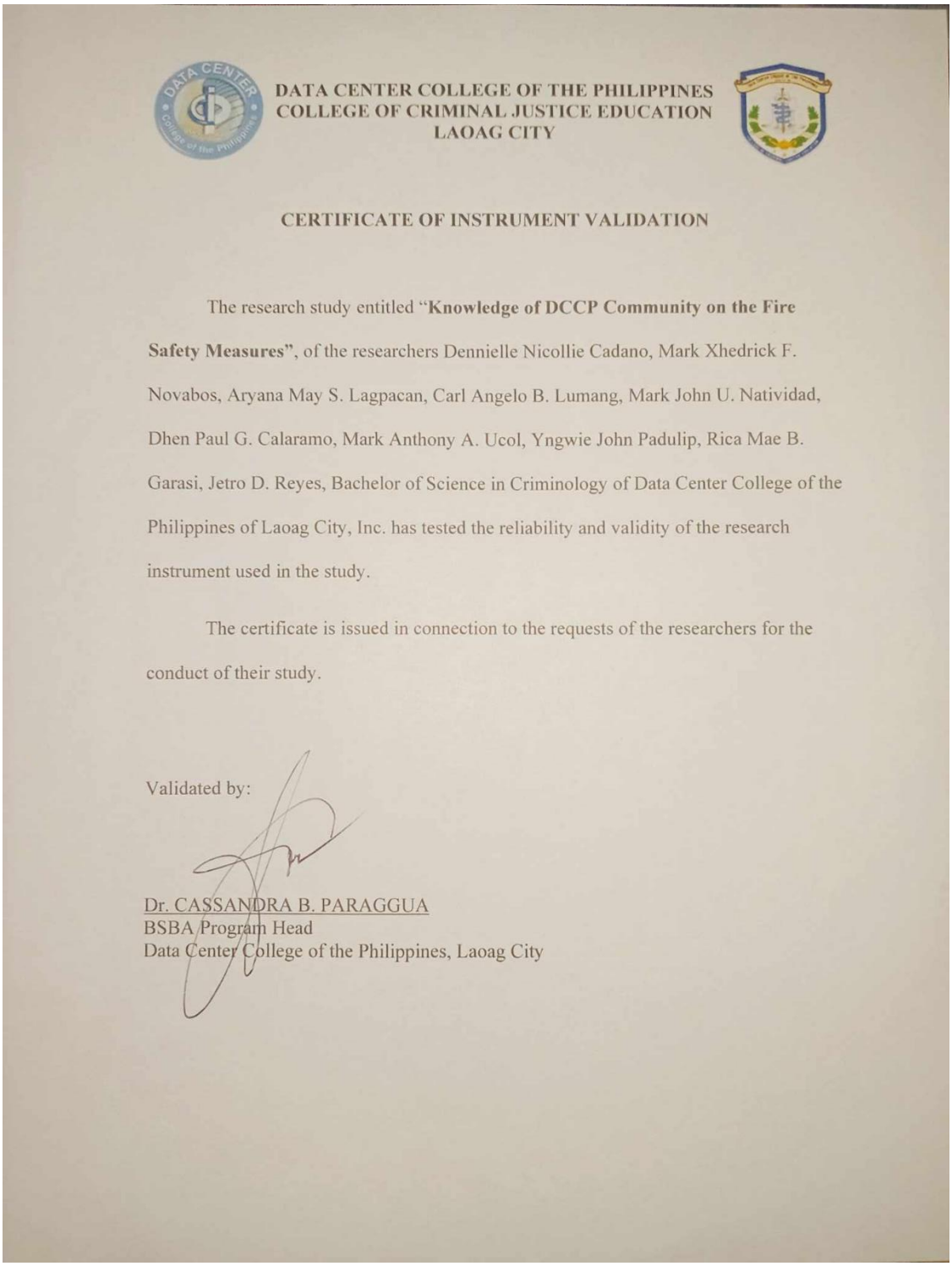
FB: Mark Anthony Ucol

Number:

APPENDICES "E"



DATA CENTER COLLEGE OF THE PHILIPPINES
COLLEGE OF CRIMINAL JUSTICE EDUCATION
LAOAG CITY

CERTIFICATE OF INSTRUMENT VALIDATION

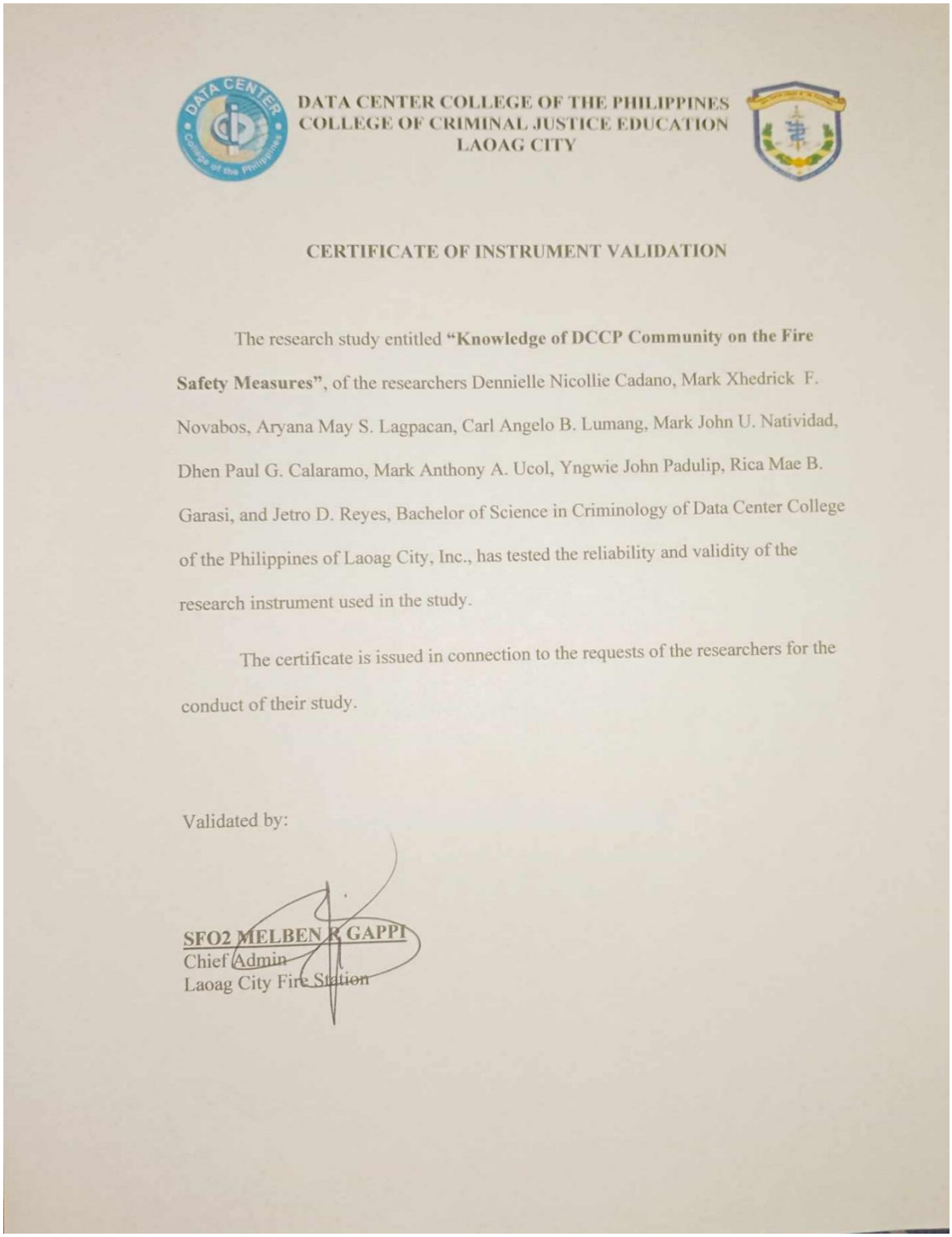
The research study entitled "**Knowledge of DCCP Community on the Fire Safety Measures**", of the researchers Dennielle Nicollie Cadano, Mark Xhedrick F. Novabos, Aryana May S. Lagpacan, Carl Angelo B. Lumang, Mark John U. Natividad, Dhen Paul G. Calaramo, Mark Anthony A. Ucol, Yngwie John Padulip, Rica Mae B. Garasi, Jetro D. Reyes, Bachelor of Science in Criminology of Data Center College of the Philippines of Laoag City, Inc. has tested the reliability and validity of the research instrument used in the study.

The certificate is issued in connection to the requests of the researchers for the conduct of their study.

Validated by:

Dr. CASSANDRA B. PARAGGUA
BSBA Program Head
Data Center College of the Philippines, Laoag City

APPENDICES "F"



DATA CENTER COLLEGE OF THE PHILIPPINES
COLLEGE OF CRIMINAL JUSTICE EDUCATION
LAOAG CITY

CERTIFICATE OF INSTRUMENT VALIDATION

The research study entitled **"Knowledge of DCCP Community on the Fire Safety Measures"**, of the researchers Dennielle Nicollie Cadano, Mark Xhedrick F. Novabos, Aryana May S. Lagpacan, Carl Angelo B. Lumang, Mark John U. Natividad, Dhen Paul G. Calaramo, Mark Anthony A. Ucol, Yngwie John Padulip, Rica Mae B. Garasi, and Jetro D. Reyes, Bachelor of Science in Criminology of Data Center College of the Philippines of Laoag City, Inc., has tested the reliability and validity of the research instrument used in the study.

The certificate is issued in connection to the requests of the researchers for the conduct of their study.

Validated by:

SFO2 MELBEN R GAPPI
Chief Admin
Laoag City Fire Station

APPENDICES "G"

CERTIFICATION OF ENGLISH CRITIQUE

This is to certify that the undersigned has read, reviewed, and edited the manuscript entitled **"PROACTIVE & REACTIVE KNOWLEDGE ASSESSMENT ON FIRE SAFETY MEASURES: DCCP COMMUNITY"** by adano, Dennielle Nicollie, Calaramo, Dhen Paul G., Garasi, Rica Mae B., Lagpacan, Aryana May S., Lumang, Carl Angelo B., Natividad, Mark John U., Novabos, Mark Xhedrick F., Padulip, Yngwie John, Reyes, Jetro D., and Ucol, Mark Anthony A., as a partial fulfillment of the requirements for the course Criminological Research 2. This further certifies that the scope of editing is within the technical preparation of the manuscript only. This certification is issued to the aforementioned researchers for English Critic requirements. Issued this 14th day of February 2025.

CASSANDRA B. PARAGGUA, Ph.D.
English Critic

APPENDICES "G"