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A Descriptive Analysis On Safety Protocols Within Logistics Company's Warehouse Operation

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Abstract*: Our research, "A Descriptive Analysis on Safety Protocols Within Logistics Company's Warehouse Operation," highlights the critical need for enhanced safety protocols in logistics warehouses. Despite Manila's potential as a major logistics hub, significant oversight in warehouse safety persists. This study, conducted at CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc. (PAGSS), focused on warehouse personnel and operators, using a purposive convenience sampling method. The researchers aimed to analyze current safety measures, assess compliance, identify types of accidents and accidents, determine areas for improvement, and evaluate the effectiveness of existing protocols in warehouse operations.The Quantitative analysis indicated strong agreement on the clarity and effectiveness of safety signs and regular equipment inspections. Compliance with safety protocols was high, supported by thorough training and mandatory reporting. Understanding safety protocols and enforcing mandatory safety gear usage reduced workplace accidents, primarily cuts, wound, and fall. Effective safety protocols significantly impacted employees' physical health, enhancing their sense of security. In conclusion, the study offers recommendations to improve safety protocols, equipment, and training, contributing to a safer logistics workplace and informing future research study.*

Keywords—Safety Protocols, Logistics Company, Warehouse Operation

CHAPTER 1 THE PROBLEM AND ITS BACKGROUND

1. 1INTRODUCTION

The logistics industry plays a crucial role in the movement of various goods, involving the coordination, management, and ensuring the smooth and efficient flow of goods and services. They are facilitating the distribution of goods, from their point of origin to the point of consumption. It is essential for the global economy and the distribution of goods. That is why businesses of all sizes need good logistics management systems to work well. Safety is a primary concern in terms of physical safety for workers. Within logistics warehouses, there are inherent hazards, risks, and distractions that can jeopardize the physical safety of employees. Ensuring the safety of workers is a critical factor for the advancement of modern industrial operations and business sustainability. According to L. Agcaoili (2019), said that Manila had the potential to become a major logistics hub. This projection was based on the expectation that the market size in Manila would reach 71 billion units. Despite the promising market opportunity, there was a noticeable lack of emphasis on safety within the logistics sector during that time. While the competition among logistics companies was growing, there was limited attention given to safety measures and standards, particularly in the physical safety of the employees. This oversight in studying and implementing safety protocols raised concerns about the physical safety of workers and the security of goods being transported.

Moreover, prioritizing physical safety within the logistics company warehouses cannot be overstated. These facilities, central to the intricate global supply chain, inherently harbor various hazards and risks that pose potential threats to the physical safety of employees and the integrity of goods. Establishing and implementing comprehensive safety measures are imperative steps to mitigate these risks effectively. Safeguarding the physical safety of warehouse workers involves addressing potential dangers such as machinery-related accidents, falls, and the safe handling of materials. Beyond the immediate concern for employee physical safety, this commitment to safety is foundational for sustaining the physical health of the workforce and ensuring the secure transit of goods. A safety culture not only

minimizes accidents but also enhances operational efficiency and promotes business continuity.

As the logistics industry continues to evolve and expand, with projections of becoming major hubs in global trade, an unwavering dedication to physical safety becomes a cornerstone for success. This commitment not only aligns with ethical standards but also positions logistics companies as responsible stewards in their field, contributing to the longevity and sustainability of the industry.

The history of the logistics industry originates from the earliest civilizations. The early civilizations developed transportation and storage systems to supply their equipment such as the armies, cities, and trade. They simply put their stuff in one place or a closed room that only certain people can have access. Also, they used carts, ships, and pack animals, establishing strategic routes and warehouses.

According to Universal Cargo (2021), in the time of Romans, they have created the first roads in order to transport and distribute their goods for their legions to the distant parts of the empire. Similarly, Alexander the Great employed systematic distribution often referred to as the logistic to support for his impressive and long campaigns. Furthermore, many other empires, this includes the Persian invaders, utilized strategic logistics to facilitate the movement of large troops across the lands. This is remarkable because the fact that there are massive size of their armies and the prolonged periods of warfare. The handling of transportation and effectively replenishing supplies in local regions and establishing depots along their marching routes to assist their campaigns. Commonly, civilian experts on that time such as engineers and technicians played a crucial role in supporting their troops. All this coordination allowed their military units to travel swiftly and expand their influence well beyond their empires' boundaries, facilitating the efficient movement of goods in the process.

During the Middle Ages, marketplaces existed and played a role in shaping how goods were stored and distributed. The Industrial Revolution became the turning point in logistics because of the rise of machinery and equipment that enabled the efficient and fast movement of goods. As mentioned in Universal Cargo (2021), The transition from the Middle Ages to the Industrial Age observed a significant evolution in logistics operations because during the Middle Ages, wide range of transportation routes established for the movement of goods and armies as well as for the storage systems, they can quickly resupply the needs of the army, and a substantial quantity can be supplied because of having a storage rooms, and in this period, the military quarters served several purposes for them. They not only safeguarded regional resources and populations but also operated as central points for the storage and distribution of goods across various regions. Military divisions prepared for deployment were systematically arranged and supplied with animals and baggage carts. However, in this period, there were problems such as accidents and mistakes were encountered with organizing the movement of goods and then became the caused for disruptions in the smooth flow of supplies.

In the Industrial Age, this period brought technological advancements in the 19th century that led to the widespread application of logistics in everyday life that enables rapid transportation for major trading companies. By the early 20th century, advanced railroad systems had been established in Europe and the eastern United States. The 20th century saw the continued development of logistics technologies and infrastructure. The introduction of containerization in the 1950s had a major impact on the industry, making it possible to transport goods more efficiently and cheaply.

The rise of e-commerce in the late 20th century has also led to significant changes in the logistics industry, as businesses have had to adapt to meet the needs of online shoppers. According to Silpl Rathi Group (2023), In this period, this marked as the transformative period empowered businesses to transport goods across extensive distances with remarkable speed and efficiency.

Consequently, companies began to upgrade their storage and transportation systems to meet the growing demands of consumers. Innovations such as trucking, air cargo services, and container shipping revolutionized the movement of goods. This revolution simplified and made more cost effective the process of transferring goods across international borders and even between continents. Additionally, the construction of warehouses, distribution centers, and various other logistics facilities played a pivotal role in enhancing supply chain efficiency. These infrastructure investments notably reduced lead times and minimized inventory expenses, resulting in a more streamlined and responsive supply chain.

Today, the logistics industry is becoming a global powerhouse in which it is evolved significantly because of the advancements in technology, changes in consumer behavior, and global economic shifts that is responsible for the movement of goods and service across the local and international border. The industry employs millions of people, and it is vital to the global economy that are continually adapting to meet evolving customer expectations and respond to external factors that impact their operations. However, accidents in the logistics industry are a significant concern, given the complexity of operations, the use of heavy machinery, and the need for constant movement and handling of goods.

According to R. Adzija (2022), Logistic Industries face various risks and challenges, and just when someone thinks that shipping goods is safe, unexpected events or accidents can disrupt these expectations and smooth flow of goods. It's extremely important to actively identify possible risks in a supply chain and come up with plans to reduce their negative effects. Being prepared and recognizing the risks and challenges in how goods are moved and stored is a crucial part

of managing logistics operations. Additionally, the found that there are weaknesses and barriers that could explore potential risks and accidents and create strategies for managing risks and dealing with significant problems in logistic operations.

Utilizing cameras or sensors is one of the trends to take product photos that can subsequently be analyzed using object recognition algorithms to identify and manage inventory levels, image processing technology can assist in automating this process (Zhao et al., 2021). Utilizing cameras to take photos inside the warehouse can improve safety terms of employee safety, employee safety procedures, such as wearing the appropriate personal protective equipment (PPE) and operating machinery properly, can be monitored utilizing security cameras. By utilizing cameras or sensors to detect and locate products, image processing can assist in automating this process. This information can then be utilized to direct workers to the appropriate locations inside the warehouse and increase warehouse safety (Xu et al., 2020).

Cameras can be used, for instance, to keep an eye on the movement of machinery like forklifts and warn people when they might collide. Cameras can also be used to keep an eye on employees and spot potential safety risks, like those caused by employees who aren't wearing proper safety equipment (Liu et al., 2021). Blind spots surrounding machinery, such as those around forklifts and cranes, can be found using cameras. This can aid in preventing mishaps and injuries, and cameras can be used to keep an eye on staff security around equipment. This can verify that staff members are following safety procedures and aren't in danger of getting hurt by the equipment.

According to the study of M. Zhao et al. (2020), the safety protocols in physical logistics are crucial to prevent accidents, protect workers, and ensure the secure and efficient movement of goods. However, there are several key issues and challenges related to safety protocols in physical logistics. In the workplace accident despite of safety protocols, accidents can still occur in logistics settings leading to injuries or even fatalities. Identifying and mitigating the root causes of accidents is an ongoing challenge.
Compliance and Enforcement ensuring that safety protocols are consistently followed can be challenging. Some workers or organizations may prioritize speed and efficiency over safety, leading to non-compliance. As automation becomes more prevalent in logistics, there's a need to develop safety protocols that address the interaction between humans and machines to prevent accidents.

The Training and Education to adequate training and education on safety protocols are essential, but not all workers receive comprehensive training. Improving training programs and ensuring their accessibility to all employees can be challenging. The Supply Chain Complexity safety protocols need to extend beyond individual logistics facilities to the entire supply chain. Coordinating safety efforts across different companies and transportation modes can be difficult. The sustainability and safety balance the sustainability goals such as reducing emissions. Safety protocols can be challenging as some efficiency measures may conflict with safety requirements.

In logistics operations, many preparations, such as storing, processing, and transporting goods, are required in logistics operations. That is why the physical safety is crucial for personnel, as it can lead to significant financial costs, damage, and even loss of life. According to the National Safety Council (2018), work injuries cost the US economy raise up to $170.8 billion in 2018, including both direct and indirect costs. Direct costs include medical expenses, while indirect costs include lost time, productivity dips, and other negative consequences.

The researchers analyzed current safety measures, assess compliance with safety protocols, identify types of accidents and injuries, determine potential areas of improvement, and evaluate the effectiveness of existing protocols in warehouse operations. This research aims to ensure the physical safety of everyone involved in logistics companies while also reducing the potential risks associated with accidents and injuries.
The primary contribution of the study on safety protocols in logistics operations is its comprehensive examination of the multifaceted impact of safety measures within the logistics sector. By investigating various dimensions of safety, including employee physical safety, accident prevention, regulatory compliance, product integrity, risk management, emergency preparedness, equipment maintenance, training, efficiency, and reputation management, this study offers a holistic understanding of the critical role that safety plays in the logistics industry.

Rees (2018) states that the safety of employees within the supply chain industry has garnered significant attention in recent years.
However, the existing literature suggests a notable deficiency in the industry's focus on safety activities and addressing various issues related to employee safety behavior (Singsa, 2019). This oversight has resulted in a concerning prevalence of safety injuries in the workplace. Sriyakul (2019) argues that employee commitment plays a pivotal role in improving supply chain employee safety behavior and reducing accidents. To further explore this, it is essential to delve into the primary factors influencing safety within the supply chain.

Furthermore, the significance of safety in the workplace has gained increasing recognition due to its direct impact on various facets of an organization, such as profitability, workforce productivity, consumer perception, shareholder value, and operational excellence, as underlined by (Yanar et al. in 2018). By delving into the intricate dynamics of employee engagement in safety initiatives specifically within warehouse settings, the study aims to provide valuable insights. These insights can, in turn, be leveraged to enhance

safety practices, subsequently improving the overall performance and reputation of the logistics industry.

1.2 REVIEW OF RELATED LITERATURE

The high rate of injuries and safety incidents related to warehouse operations is the most common challenge. Among other things, while carrying out their everyday tasks, warehouse workers are continuously exposed to risk factors related to safety precautions (Mdlalose 2021). Warehouses are inherently dangerous workplaces due to heavy machinery, moving vehicles, and uneven surfaces. Workers often perform repetitive tasks at a fast pace, leading to fatigue and mistakes. Managers may pressure workers to meet production goals at the expense of safety. Workers may not receive adequate safety training or be reluctant to report injuries. Warehouse employees are constantly subjected to risk factors for a number of reasons. The nature of the work is physically demanding and often involves lifting heavy objects, operating machinery, and driving forklifts. These tasks can all be dangerous if not done properly. Additionally, the fast-paced work environment can lead to workers cutting corners and taking safety risks.
Warehouses also often use a variety of heavy machinery, such as forklifts, cranes, and conveyors, which can be dangerous if not operated properly or maintained. Warehouse safety is so important because of the high rate of accidents and injuries among warehouse employees. Warehouse accidents can lead to serious injuries, such as broken bones, head injuries, and even death.

In any supply chain, warehouses are an essential element. A change in the flow of commodities is taking place there, which calls for the implementation of intensive operations involving product transshipment, transportation, and warehousing. Having safety is essential. more pronounced in many contexts these days.

Within the logistics industry, particularly in the warehousing sector, these demands are particularly prevalent (D. Durdevic, 2022). Warehouses are essential element of the supply chain because they provide a place to store goods until they are needed, and they help to ensure that goods are delivered efficiently and accurately. Safety is essential in all workplaces, but it is especially important in warehouses. The high number of safety hazards in warehouses makes it essential for employers to take steps to mitigate these risks. By providing workers with adequate safety training, implementing safety procedures, and maintaining warehouse equipment in good condition, employers can help to create a safer work environment for their employees.

The company understood its safety concerns, yet due to “high cost” they decided not to address them. According to Klara (2019), in order to compete, logistics facilities are frequently under pressure to reduce costs. Because investing in safety upgrades can be costly, companies that are already having financial difficulties can be hesitant to do so. The business has a responsible approach to its operations if it is conscious of its safety problems. The first step in protecting the safety of workers, clients, and the general public is acknowledging these problems. However, the choice to ignore these issues because of the alleged "high cost" is complicated and poses both practical and ethical issues. Cost factors are an essential component of any business operation since they affect sustainability and profitability. Businesses frequently evaluate the return on investment for safety precautions, but this must be weighed with the moral responsibility to protect both the environment and human life.

According to Hofstra et al., (2018), said that in order to protect worker physical safey, lower expenses related to injuries and downtime, ensure regulatory compliance, maintain a positive company image, and boost staff morale, research into the causes of accidents in warehouses and the development of safety remedies are essential. Businesses cannot only save lives and lower healthcare costs by recognizing accident triggers and putting safety measures in place, but they can also maintain a productive and effective workplace. This study is crucial for decreasing legal obligations, lowering insurance costs, and promoting a culture of ongoing warehouse safety improvement. Additionally, it opens the door for the adoption of innovative methods and solutions, which improves safety over the long run.

Safety assessment is important because it allows to identify the potential risks in complex systems and to maintain their reliable operation at acceptable costs. According to Li et al., (2019), system's operation needs to be viewed in light of its safety. Safety evaluation is crucial since it enables the identification of potential dangers in to maintain complicated systems' dependable functioning at reasonable cost. The consideration of safety in every system's functioning is paramount because it directly affects human physical safety. Neglecting safety can result in accidents, injuries, or even loss of life, making it an ethical and moral imperative. Furthermore, safety considerations are often enshrined in legal and regulatory requirements, and non-compliance can lead to legal consequences. Prioritizing safety also enhances operational efficiency by reducing downtime, accidents, and disruptions, ultimately resulting in cost savings. Moreover, it encourage public trust, protects an organization's reputation, and ensures long-term viability by preventing financial and environmental disasters associated with unsafe systems. Safety assessment is essential because it detects and reduces potential risks and hazards, which lowers the possibility of mishaps and injuries. It provides the safety and security of human life, making it a moral and ethical requirement. Safety evaluations are also frequently necessary for legal and regulatory compliance, ensuring that firms follow set safety standards and rules to avoid legal repercussions. The functioning of every system should be considered in the context of its safety.

Risk analysis is considered a common approach to ensuring sustainability of systems. According to Athar et al., (2019), since it makes it easier to recognize and evaluate potential threats and vulnerabilities that could interfere with system operations or cause failures, risk analysis is a typical strategy for assuring the sustainability of systems. Organizations can take proactive steps to avoid these risks by comprehending and quantifying them, which is crucial for preserving system lifetime and stability. Informed decision-making, resource allocation, and emergency planning are made possible by it, guaranteeing that systems can adjust and persevere in the face of shifting conditions and difficulties. Safety management helps to correctly shape the organizations' safety decision-making processes because it offers a formal framework for detecting, evaluating, and controlling safety hazards, safety management is essential in determining how businesses make safety related decisions. It sets clear rules, regulations, and processes for safety and makes sure that everyone in the business is aware of their responsibility for upholding a safe workplace. Additionally, safety management encourages employees at all levels to report safety issues and events without worrying about facing consequences.

Organizations can gather useful information using an open and transparent method, which can then be utilized to guide safety decisions and attempts at continuous improvement. According to Yanar et al., (2018), prior to turning to Personal Protective Equipment (PPE), the employer's responsibility under this legislation is to offer information, teaching, training, supervision, and safe work methods. This act's purpose is to safeguard workers from occupational injuries. The purpose of this study is to determine the variables that influence employee involvement in workplace safety initiatives, specifically in a warehouse. Accidents occur because of passive employee involvement in workplace safety initiatives (Reese, 2018). Additionally, there has been a growing understanding of safety's direct effect on company profitability, staff productivity, consumer perception, shareholder value, and operational excellence.
In the study conducted by Yanar, it is noted that prior to resorting to Personal Protective Equipment (PPE), employers are obligated under the relevant legislation to provide information, education, training, supervision, and safe work methods to their employees.

The primary objective of this legislation is to ensure the protection of workers from occupational injuries. The main aim of this literature review is to identify the factors that impacts the employee engagement in workplace safety initiatives, with a specific focus on warehouse settings. It is highlighted that accidents often result from passive employee involvement in workplace safety efforts (Reese, 2018). Furthermore, there is an increasing recognition of the direct impact of safety on various aspects of a company, including profitability, employee productivity, consumer perception, shareholder value, and operational excellence.

Fruhen et al., (2019) argued that employees safety behavior must demonstrate to follow safety rules and procedures. Hence, management safety commitment should be an observable activity to maintain safety performance. This make a compelling case for the importance of employees adhering to safety rules and procedures as a demonstration of their commitment to safety. Furthermore, the study emphasizes that management's commitment to safety should be visible and tangible, as this plays a significant role in maintaining and improving safety performance within an organization.

According to Kattepur (2019), employee education and encouragement are necessary for both accident prevention and personal safety. Employees that take an active role in hazard identification, risk assessment, and the recommendation of preventative actions to avoid occurrences and accidents.
Employees of all ranks should be provided with the required abilities to detect risks, propose appropriate control measures, and give sufficient feedback, thus assuming full responsibility of workplace safety. It is a significant point that is made regarding the vital role of employee education and encouragement. This is essential not only in preventing accidents but also in ensuring personal safety. The study asserts that employees should be proactive in identifying hazards, assessing risks, and suggesting preventive measures to minimize the occurrence of accidents. Furthermore, it stresses the importance of equipping employees at all organizational levels with the skills needed to identify risks, propose effective control measures, and provide valuable feedback.

This approach places the responsibility for workplace safety firmly in the hands of employees. A. Forcina, (2021) states that systematic literature review explores the role of Industry 4.0 enabling technologies in safety management. The study focuses on the impact of these technologies on safety within an industrial context.
The research highlights that Industry 4.0 technologies can have a significant positive impact on safety management. The main enabling technologies identified as beneficial for safety are the Industrial Internet of Things (IIoT) and Cloud computing. These technologies, when harnessed with smart devices, advanced monitoring systems, and digital information processing, have the potential to improve safety. The study indicates that Industry 4.0 can enhance safety levels in various domains, including warehousing, logistics, and the building sector. It enables safety management in these areas through the use of smart methods, such as RFID and IoT technology, to optimize processes and minimize risks.

The study recommends the adoption of these technologies, the development of necessary skills, and a sector-specific approach to leverage the benefits of Industry 4.0 for safety. Additionally, the research encourages the development of

quantitative evaluation methods to measure the impacts more effectively.

Improved safety culture, when properly implemented, offers several advantages. According to a study by Otilaye et al. (2022), it can lead to a decrease in work injury claims, an increase in employee confidence, and greater safety innovation. When organizations prioritize safety and create a culture that values employeephysical safety, they can reduce workplace accidents, boost employee morale, and encourage innovative safety solutions.

According to Schwartz et.al, (2021), study underscores the vital importance of analyzing and addressing safety in warehouse systems, particularly in terms of minimizing injury risks for workers. This analysis is justified because it prioritizes worker physical safety, conducts risk assessments, implements preventative measures, emphasizes continuous improvement, involves workers in the safety process, ensures regulatory compliance, and adopts a data-driven approach. The study's findings and recommendations are essential for creating a safer warehouse environment and have the potential to drive regulatory changes, improved safety training, enhanced safety protocols, and technology investments, all while emphasizing the shared responsibility of employers, employees, regulators, and researchers in ensuring worker safety.

Logistics remains an integral component of everyday operations across various industries. Nevertheless, the effectiveness of logistics within business processes depends on its efficiency. The factors causing these accidents are based on the specific tasks performed by workers. In the freight logistics industry, several variables contribute to accidents, including the safety provided by the tools and equipment used such as handling objects, can lead to injuries and accidents. The safety of individuals and other valuable resources is also influenced by the working environment. Kant et.al (2019) said that enhancing safety protocols in logistics is instrumental when it comes to boosting the efficiency and productivity of the workforce within the freight logistics industry. When safety standards are improved, this can reduce the risk of accidents and injuries and contributes to a more conducive working environment. Employees are more likely to perform at their best when they feel secure and valued, resulting in increased productivity and effectiveness. By prioritizing safety measures, companies in the freight logistics sector can optimize their human resources, leading to better overall performance, reduced downtime, and enhanced operational outcomes.

According to Lutchman et al., (2019) Warehouse operations are inextricably linked to safety measures. Warehouse safety is all about always protecting the safety of workers. This is achieved by making sure that protective gear, referred to as Personal Protective Equipment (PPE), is always worn, by eliminating all potential hazards such as trips and falls, by labelling danger zones, by always using safe lifting techniques, by providing training, and by promoting safety awareness throughout the warehouse.

According to Hofstra et al., (2018), safety procedures are often disregarded in workplaces due to inadequate resources, ignorance, cost cutting and time constraints. However, when these are correctly implemented, they bear major benefits for the company such as employee satisfaction and improved increased productivity. This is done by reducing the risk of injury, workplace disruptions and absenteeism associated with workplace injuries.

Employee education and encouragement are necessary for both accident prevention and personal safety. Employees that take an active role in hazard identification, risk assessment, and the recommendation of preventative actions to avoid occurrences and accidents. Employees of all ranks should be provided with the required abilities to detect risks, propose appropriate control measures, and give sufficient feedback, thus assuming full responsibility of workplace safety.

Kattepur (2019) states that safety and risk management, as articulated by Jokkaw and Tongthong (2018), it involves the systematic process of defining and implementing safety measures within a business, specifically focusing on a warehouse context. This encompasses rules, procedures, and standards aimed at mitigating risks and ensuring a secure working environment. They likely dig deeper into strategies and practices for effective safety implementation, contributing valuable insights to the field.

As mentioned by Hofsrta et al., (2018), the goal of warehouse safety is to reduce accidents to a minimum to maintain a constant level of staff productivity. This may be accomplished by defining the safety policy's goals and objectives, collecting benchmark resources, and forming your team to guarantee that safety is communicated effectively from top management to operational workers. When this is completed, a safety policy may develop, and it should be reviewed on a regular basis to identify areas for improvement.

According to Auyong et.al., (2019), in Malaysia's logistics industry, they have enacted the safety policy which is the Occupational Safety and Health Act (OSHA) of 1994 to help logistics industry to expand their growth and in order to focus on safety to reduce accidents and health issues. This study looked at safety practices in logistics, especially regarding workers' perspectives. They scored highest in fire safety, safety emphasis, and safety policies. The study shows that company management plays a big role in safety. Maintaining good relations between employers and employees can reduce workplace injuries.

It highlights the need for every worker to take personal responsibility for their physical safety. The focus is on the quality and productivity of the workforce in the logistics industry that have strong safety practices. According to

Zulkifly et.al., (2018) that organizations should not take safety lightly. It highlights that inadequate safety measures and performance may result in a substantial increase in workplace accidents.

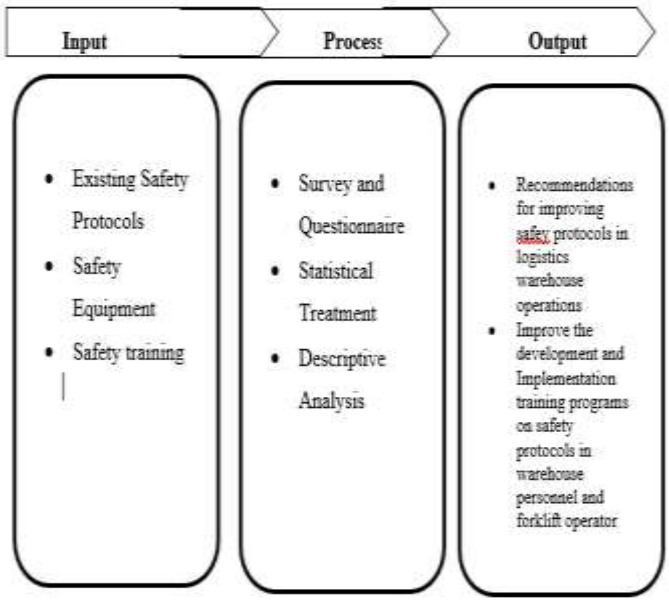
Even seemingly minor accidents can have serious consequences for an organization. It's crucial for logistics companies to prioritize and invest in safety measures to prevent harm to employees and protect the overall physical safety of the organization.

The term safety performance refers to numerous types of safety outcomes ranging from employee safety behavior such as following procedures, wearing personal protective equipment, and participation in safety meetings, to organizational level safety outcomes like accident and injury rates (Morrow et al., 2018). The safety management variables include safety training, safety rules procedures, safety promotion policies, safety communication & feedback, and management commitment. Therefore, the research lacks a clear understanding of how safety management practices, such as training, rules, and communication, specifically impact different aspects of safety performance in the logistics industry. By delving into these nuanced relationships, future research can provide a more comprehensive understanding, addressing this specific gap in the literature.

1.3 THEORETICAL AND CONCEPTUAL FRAMEWORK

The study will be illustrate using the Input Process-Output (IPO) system approach. In the figure, the Input will encompass existing safety protocols, safety equipment, and safety training for personnel in logistics companies. The process will involve conducting surveys and questionnaires. Statistical treatment including frequency, average, and percentage will be use to analyze the data. The output will consist of the collected data from the input and process. The formulated recommendations will guide specific actions for implementing improvements on physical safety within logistics operations. This structured framework will ensure a thorough examination of safety practices to minimize potential risks and enhance overall safety in logistics company warehouse operations.

Figure 1: Framework of the Study



1.4. STATEMENT OF THE PROBLEM

The study aims to assess the physical safety in logistics warehouse operations by addressing the following key questions.

1. What are the existing safety protocols in logistics warehouse operations?
2. How compliant are warehouse personnel and forklift operators with established safety protocols?
3. Why is it important to understand the safety protocols of logistics companies before starting work, particularly concerning the requirement for high-visibility clothing?
4. Does enforcing safety protocols, such as mandatory safety gear usage, lead to a reduction in workplace accidents in logistics warehouses over a three-month period?
5. What are the most common types of accidents and injuries that occur in logistics warehouse operations?
6. Does the effectiveness of existing safety protocols have a significant effect on the physical health of employees?
7. Based from the findings, the researchers will develop a program to enhance safety protocols in logistics company warehouses.

1.5 SIGNIFICANCE OF THE STUDY

This study is conducted to benefit the following:

Students. This research helps the students to gain knowledge and understanding about the practical application of safety protocols within the logistics industry as well as enhances their understanding of real-world safety challenges and equips them with the knowledge and critical thinking skills needed for future careers in logistics, industrial management, and workplace safety.

Researchers. This research serves as a valuable resource for future researchers who wish to explore and expand workplace safety, particularly physical safety within logistics companies.

Logistics Employee. This study will help logistics employees understand its potential to directly impact their working conditions, safety awareness, and overall well-being. By actively engaging with the findings and recommendations, logistics employees can contribute to a safer, more supportive work environment, benefiting both individuals and the industry.

Logistics Industry. For logistics companies, this study offers insights to enhance the well-being of their employees, help minimize accidents and injuries, and streamline their safety protocols.

1.6 SCOPE AND DELIMITATION OF THE STUDY

The study focuses on assessing and improving physical safety protocols in logistics company warehouses. The logistics industry chosen to involve respondents is CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc. located in Clark, Mabalacat City, Pampanga. The researchers aim to identify and analyze safety measures, compliance with existing safety protocols, and types of accident and injury. This includes variables such as types of accidents and injuries, training programs and safety equipment, and personnel awareness of safety procedures.
Moreover, the study excludes the examination of occupational health hazards, environmental impacts, and public health considerations related to logistics operations. It is delimited to maintain a focused approach on physical safety protocols of the employees within logistics warehouses, with data collection conducted through surveys and questionnaires. The findings will be used to develop evidence-based recommendations for improving logistics warehouse safety protocols. Lastly, the study is planned to be completed within a three-month timeframe.

1.7 DEFINITION OF TERMS

The following terms were defined according to how they are used in the study:

Efficiency: The quality or degree of being efficient.
Efficiency in logistics signifies the effective use of resources, time, and processes to achieve optimal performance and productivity in the movement and management of goods.

Forklift Operators: A forklift is a powered industrial truck or vehicle equipped with forks at the front that can be raised and lowered.

Logistics: The handling of the details of an operation.
Logistics is the process of coordinating, managing, and ensuring the smooth and efficient flow of goods and services from the point of origin to the point of consumption, covering every step of the supply chain, from the acquisition of raw materials to the delivery of finished goods to the consignee.

Logistics Industry: Logistics is the management of supply and transportation deliver the goods on time and in good shape. handling of operations is a part of the logistics industry, and the need to perform efficient and cheap operations is of utmost importance in the modern competitive world. The logistics industry involves the planning, coordination, management, and execution of the efficient movement of goods and services from their point of origin to their point of consumption. It encompasses the entire supply chain, from sourcing raw materials to delivering finished products.

Physical Safety: Physical safety refers to the protection of all stakeholders, including families, caregivers, students, school staff, and the community, from violence, theft, and exposure to weapons and threats, to establish a secure learning environment.

Risk Management: It is the continuing process to identify, analyze, evaluate, and treat loss exposures and monitor risk control and financial resources to mitigate the adverse effects of loss. Loss may result from the following: financial risks such as cost of claims and liability judgments.
Risk management involves identifying, assessing, and mitigating potential risks or hazards within logistics operations, with the aim of preventing accidents and minimizing their impact.

Safety in Logistics: This are the program that goes way beyond a set of policies and procedures, posters, and a training schedule.
Safety in logistics pertains to ensuring the safety physical of workers and the protection of the environment within the logistics operations. This includes measures to prevent accidents, protect employees, and mitigate potential risks associated with the handling, storage, and transportation of goods.

Safety Measures: An action, procedure or contrivance designed to lower the occurrence or risk of injury, loss and danger to persons, property, or the environment.
Safety measures can include practices such as wearing protective gear. adhering to safety protocols, using safety equipment, and implementing emergency response plans. They aim to minimize risks and promote a safe environment.

Safety Protocols: Workplace safety protocols, often called safety procedures, are step-by-step safety plans guiding employees through the safe performance of a given workplace procedure. As such, the protocol refers to both the process itself and the internal document put together by an organization.

Safety protocols serve as a framework for safe practices in various settings, including logistics. They dictate how tasks should be performed, how equipment should be used, and how to respond to emergencies, all with the goal of ensuring the highest level of safety.

Supply Chain: The chain of processes, businesses, etc. by which a commodity is produced and distributed.
A supply chain encompasses all the processes and activities involved in the production and distribution of goods, from the acquisition of raw materials to the delivery of finished products to consumers.

Warehouse: A structure or room for the storage of merchandise or commodities
A warehouse is a key component of logistics operations, where goods are stored, managed, and prepared for distribution.

Warehouse Personnel: Employees who work in a warehouse setting. These individuals are responsible for various tasks such as receiving, storing, picking, packing, and shipping goods or products.

CHAPTER 2 RESEARCH METHODOLOGY

This chapter will prepare the research design, research locale, respondents of the study, research sample, research instrument, data processing and statistical treatment and ethical considerations used by the researchers. It will present the process of how the researchers conducted their study and how they analyzed it

2.1 Research Design

this study will use quantitative research because this will enable objective measurement, statistical analysis, and descriptive assessment of safety measures, compliance with the safety protocol, types of accidents, and protocol effectiveness. This method is efficient with large datasets commonly encountered in safety studies. Quantitative research involves the systematic collection and analysis of numerical information, facilitating the identification of patterns, computation of averages, prediction-making, standardization of data collection, and the formulation of broad conclusions applicable to broader populations (Bhandari, 2022).

Specifically, this study utilized a descriptive-quantitative research design to accurately describe a situation or phenomenon (McCombes, 2022). Similarly, Cristobal and Cristobal (2018), said that the descriptive method of research may be used to develop theories, justify current practices, or determine what other practitioners in similar situations are doing. This research designs aligns with the study's goal of analyze current safety measures, assess compliance with safety protocols, identify types of accidents and injuries, determine potential areas of improvement, and evaluate the effectiveness of existing protocols in logistics operations. Moreover, no manipulation of variables was involved in this descriptive-quantitative research.

2.2 Research Locale

The study will be conducted during the Academic Year 2023–2024 at the CargoHaus Inc. And Philippine Airport Ground Support Solutions, Inc, all of which have been in open for operation since July 19, 2013 and June 16, 1996 respectively. The said companies were all located in Clark Freeport Zone, Mabalacat City Pampanga specifically, Cargohaus Inc, is located at 7550 Cargohaus bldg. Bonifacio Avenue, Clark International Airport, while Philippine Airport Ground Support Solutions, Inc. Bldg.7590 A. Bonifacio Ave. Sector 6, Clark Aviation Complex, Clark Freeport Zone, 2023.

The locale will be convenient for the researchers since some of them have done on the job training from one of these companies, they would have no difficulty in communicating with the employees-respondents, and would save time, energy, money, and effort.

2.3 Respondents

The respondents for this study will be comprised of warehouse personnel, forklift operators, security guards, utilities such as janitors, and Bureau of Customs Personnel from distinct logistic companies, particularly from CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc. The choice of these companies will deliberate, focusing the study on businesses in Clark, Mabalacat Pampanga to ensure a specific geographic context and potentially similar working conditions, minimizing external factors that could influence the results. Additionally, the researchers will select respondents from each company because collecting data from this number of employees per site was often feasible within time and budget constraints. Employees will be invited to grant permission for participating in the study by responding to the survey questionnaires prepared by the researchers.

2.4 Sampling Design

The researchers will select their sample using the purposive convenience sampling technique. According to Andrade C (2021), purposive convenience sampling is a method where the sample's characteristics are specified for a particular objective, and the sample is taken from a source that is easily accessible to the researcher. This approach will be suitable when the researchers will possess a well-defined understanding of the specific characteristics or attributes they aim to investigate and to assemble a sample that accurately

reflected those identified traits. Furthermore, this method will be used by the researchers since the said companies had overall outstanding performance in logistics, consequently maintaining a considerable number of personnel that will help the researchers gain a deeper understanding of the particular aspects within a population. The researchers will select two (2) nearby warehouse operations, namely, CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc., to gather employees as respondents for the study.

2.5 Research Instrument

The researcher will utilize a printed survey questionnaire, providing ease of access and real-time collection of data. The questionnaire will be employed closed-ended questions to minimize potential bias and reduce the risk of errors in data collection and analysis. It will consist of two parts: the first part will be a four-point Likert-type scale with statements focusing on the existing safety measures, compliances, common accident types related to the mentioned physical safety protocols in logistics, and the effectiveness of the safety protocols, followed by four answer options; the second part will be an ending and thank-you section. The research questionnaire will also be validated by three experts. As well as will be conducted a reliability test to ensure the survey's consistency and accuracy.

2.6 Data Collection Procedure

This study will involve several key parts, each contributing to the quality and validity of the findings. Initially, to prepare for this, the researchers will design a questionnaire that will be related to "A Descriptive Analysis Within Logistics Company Warehouse Operation." The researchers will be also crafted a letter of approval, requesting participation from employees of CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc. Finally, they will proceed with the data analysis.

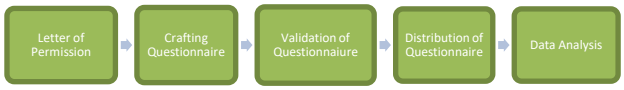


Figure 2. The Data Collection Procedure

Once the letter of approval will be granted, the researchers will select respondents based on their willingness to participate in the study. Subsequently, the researchers will administer a closed-ended questionnaire to allow respondents to provide detailed responses. The researchers will also establish a specific time frame for the administration and collection of the respondents' answers to the interview questions. This questionnaire will be validated by three (3) experts in the field. In summary, the researchers will look the respondents' permission to be part of the study. After gathering all the necessary data, the researchers will conduct the data analysis.

2.7 Data Processing and Statistical Treatment

This study will be utilized quantitative analysis, and descriptive data that will be analyzed statistically by using measures such as mean and standard deviation. According to Cherry (2022), the mean was defined as the average of the data, computed by adding all the data together and then subsequently dividing it by the quantity of data. The standard deviation will be measured how dispersed the dataset was in relation to the mean, calculated by taking the square root of squared differences from the mean, divided by the sample size. The study will provide proper interpretation and data results and employed appropriate graphical presentation.

The data will be analyzed using a 4-point Likert scale with a verbal interpretation of "strongly agree," "agree," "disagree," and "strongly disagree" for the interpretation of safety protocols within a logistics company's warehouse. The highest to the operations lowest mean of responses will be calculated to decide the current safety measures, assess compliance with safety protocols, identify types of accidents and injuries, determine potential areas of improvement, and evaluate the effectiveness of existing protocols in warehouse operations.

Point	Scale Range	Interpretation
4	3.26–4.0	Strongly Agree
3	2.51–3.25	Agree
2	1.76–2.50	Disagree
1	1.0–1.75	Strongly Disagree

CHAPTER 3 PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Statement of the Problem

1. What are the existing safety protocols in logistics warehouse operations?

	Mean	Standard Deviation	Verbal Description
	4.00	0	Strongly Agree
Safety signs that were displayed throughout the warehouse effectively address potential hazards for pedestrians and forklift operations.	3.67	0.47	Strongly Agree
Forklifts and other equipment were inspected regularly to ensure that they are in proper working condition and	3.60	0.49	Strongly Agree
safety features are functioning correctly			
	Grand Mean 3.26		Strongly agree

TABLE 1: SAFETY PROTOCOLS

Table 1 presented the factors that determine the existing safety protocols in warehouse logistics operations. The results revealed a grand mean of 3.76. This indicated that warehouse personnel, forklift operators, security guards, utilities personnel, and BOC personnel in CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS) generally agree on the three (3) key factors conveying existing safety protocols in warehouse logistics operations.

Specifically, the indicator stating "The company has safety signs that were displayed throughout the warehouse and are clear and easy to understand" received a strong agreement rating from 100% of the respondents. Additionally, the average score (mean) for this indicator, at 4.00, further emphasizes strong agreement.

According to Duarte et, al., (2018), they found that signs that change or move (dynamic signs) were the most effective in getting worker or employee to follow safety instructions. However, even signs that didn't move (static signs) were still helpful, especially when people weren't expecting them. This mean that both types of signs could make a difference in how people behave in emergencies.

2. How compliant are warehouse personnel and forklift operators with established safety protocols?

TABLE 2: SAFETY PROTOCOLS

	Mean	Standard Deviation	Verbal Description
The company had established physical safety protocols that I comply with.	3.73	0.45	Strongly Agree
All personnel in the company were mandated to undergo thorough training specifically focused on physical safety, equipment operation, and emergency procedures	3.56	0.50	Strongly Agree
Training on fire drills, evacuation routes, firstaid response, and reporting procedures for accidents or safety concerns were required by the company in warehouse operations	3.54	0.53	Strongly Agree
Training on maintaining safe distances from moving equipment, implementing proper communication, and avoiding blind spots in the warehouse were required by the company in warehouse operations	3.54	0.50	Strongly Agree
Grand Mean	3.59		

Table 2 illustrated the factor representing the compliance of warehouse personnel towards established safety protocols in a warehouse logistics company. Based on the results of a 4-point Likert Scale, the majority was strongly agree. The grand mean of 3.59 indicated that respondents strongly agree. The four key indicators suggested a positive safety culture in the workplace. With a majority strongly agreeing, it was implied that warehouse personnel and other respondents in CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS) endorse the importance of safety protocols. This finding was encouraging, indicating widespread acceptance of safety practices. The safety reputation of mostly all companies ranks among the most important of all assets. Certain future uncertainties made reputation difficult to protect. As Warren Buffet (2020) said, “It takes 20 years to build a reputation and 5 minutes to destroy it.” Even the most well-established companies with apparently impenetrable reputations can suffer from unforeseen reputational damages. “Negligence of safety” costs business owners and property managers adverse publicity, huge liability awards, insurance rate hikes and even exposure to criminal prosecutions.

3. Why is it important to understand the safety protocols of logistics companies before starting work, particularly concerning the requirement for high-visibility clothing?

TABLE 3: SAFETY PROTOCOLS

Mean	Standard Deviation	Verbal Description
3.56	0.50	Strongly Agree

Table 3 presented the mean value of 3.56 that indicated the strong agreement among respondents in CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS) regarding the necessity of safety protocols for their physical safety in warehouse logistics companies. Specifically, the indicator "All personnel in the company required to wear high-visibility clothing to increase their visibility in warehouse operations" garnered strong agreement from 55.7% of respondents, agreement from 44.3%, and no disagreement or strong disagreement from any respondent. According to Achilleas Mina et.al., (2021), the proper use of high-visibility safety apparel (HVSA) increases conspicuity and reduces accident rates. The main factor affecting daytime conspicuity was the color contrast between HVSA and the ambient background environment. Selecting HVSA without considering their contrast to the worksite environment may result in unsafe situations where HVSA not only fail to provide the desired conspicuity but also act as camouflage.

4. Does enforcing safety protocols, such as mandatory safety gear usage, lead to a reduction in workplace accidents in logistics warehouses over a three-month period?

TABLE 4: SAFETY PROTOCOLS

	Mean	Standard Deviation	Verbal Description
All the personnel in the company always wore the provided safety glasses, gloves, and footwear while working in the warehouse			Strongly Agree

Table 4 showed the list of safety protocols enforced in logistic warehouse. The result revealed a mean of 3.47 which means that the respondent in CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS) strongly agreed that the one (1) one indicator was a list of safety protocols enforced in a warehouse.
Specifically, the indicator stated that "All the personnel in the company always wore the provided safety glasses, gloves, and footwear while working in the warehouse" was strongly agreed by 47.1% of the respondents,52.9% of them agreed,0% disagreed and 0% strongly disagree. In addition, the average/mean (3.47) of this indicators means strongly agreed.

According to Miao Su et.al (2021), in this study, a developed safety management framework for dangerous goods storage, informed by accident data and literature review. They utilized the analytic hierarchy process to establish a factor importance questionnaire, identifying critical safety factors. Analysis revealed a reduction in accidents over the past decade, primarily due to stringent adherence to safety protocols during inbound transportation and warehouse storage. Notably, factors such as practitioner expertise, regulatory compliance, and safety awareness played pivotal roles in minimizing incidents, underscoring the efficacy of enforcing safety measures.

5. What are the most common types of accidents and injuries that occur in logistics warehouse operations?

	Mean	Standard Deviation	Verbal Description
Is it your experience that receiving cuts and wounds from handling packaging materials is a frequent issue in warehouse work	2.49	0.85	Agree
Do you agree that slips, trips, and falls are common incidents for personnel in the warehouse	2.04	0.73	Agree
Do you agree that accidents involving falling objects occur frequently in the warehouse.	2.04	0.73	Agree
Do collisions with racks or shelves often occur during forklift operations in warehouses.	2.14	0.77	Agree
Grand Mean	2.07		Agree

Table 5 indicated the factor pertaining to understanding the most common types of accidents and injuries in warehouse operations within a warehouse logistics company. The results revealed a grand mean of 2.07, indicating agreement among respondents in CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS). The indicators suggested

mixed opinions regarding the frequency of warehouse accidents.

Some respondents likely selected options on the agree side of the scale and this indicated a belief that accidents occur fairly often. Conversely, others likely chose disagree options suggesting they perceived accidents as less frequent. "What are the most common types of accidents and injuries that occur in logistics warehouse operations?" In warehouses, most accidents were related to the use of forklift trucks. According to Kelloway et al., the year 2018 counted 1700 serious injuries in the Netherlands in warehouses due to forklifts. Traffic in warehouses was often heavy, forklifts and workers on foot work in close proximity, and the work is often under time pressure (due times must be realized, regardless of the order volume to be handled). Many companies therefore have invested in improving occupational safety. Well-organized warehouses were cleaned and well-lit, personnel was properly trained for the job and for safety, they had floor markings to indicate where loads should be stored or buffered, had forklift flows separated from manual flows, and pay attention to safe working.

6. Does the effectiveness of existing safety protocols have a significant effect on the physical health of employees?

	Mean	Standard Deviation	Verbal Description
Do the existing safety protocols in the warehouse enable employees to focus on their jobs without worrying about potential hazards	3.44	0.65	Agree
Do the existing safety measures in the warehouse provide employees with a sense of security and protection from physical harm	3.56	0.56	Agree
Grand Mean	3.5		Agree

Table 6 showed the list of safety protocols enforced in logistics warehouse. Based on the result, a grand mean is 3.5 which means that the respondents in CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS) strongly agree that the effectiveness of existing safety protocols in warehouse logistics companies significantly affects employees' physical health, providing them with a sense of security and protection from harm. Specifically, the indicators stated that "Do the existing safety protocols in the warehouse enable employees to focus on their jobs without worrying about potential hazards. "received a strong agreement rating from 100% of the respondents. Additionally, the average score (mean) for his indicator, at 3.44, further emphasized a strong agreement.

According to De Koster et, al (2022), safety is becoming more and more an issue in warehouses that's why in their study conducted exploratory research on measures that actually enhance warehouse safety. They focused on three main factors: safety-related work procedures, safety leadership, and workers' safety consciousness. Through a survey, they found that safety leadership and safety-related work procedures notably influence workers' safety consciousness, which subsequently improves overall safety performance in warehouses**.**

7. Based from the findings, the researchers will develop a program to enhance safety protocols in logistics company warehouses.

Based from the findings, the researchers will develop a program to enhance safety protocols in logistics company warehouses.

Program/Policies/Guidelines	**Objectives**	**Participants**	**Time Frame**	**Implementations**
A. Maintain Existing Protocols (Safety Signs, High-visibility clothing, safety glasses, gloves, and footwear.)	To keep ensured that safety protocols are consistently followed and helps maintain and monitor operational efficiency and reduces errors in warehouse logistics warehouse operations	Warehouse personnel, Forklift operators, BOC personnel, Security guards, Utilities	Quarterly (April, August and December)	Based on the identified existing safety protocols, warehouse personnel would improve and review their orientation with such materials like presentations, handouts, and videos. These materials would help to clearly communicate the importance of safety in warehouse operations and provide detailed information about specific protocols to be reminded and followed
B. Annual Refresher Training and Practice Session for the Respondents	To ensure that all personnel are familiar and attentive with evacuation procedures	Warehouse personnel, Forklift operators, BOC personnel, Security guards, Utilities	During Fire Prevention Month (March) Typhoon and Flood Awareness (June)	To further extend knowledge about safety and emergency drills, which are structured

	and are practicing responses to various emergencies.		January to March	exercises designed to simulate real-life emergencies, to train warehouse personnel to respond effectively, mitigate risks, and ensure the safety of personnel and logistics company warehouse.
C. Feedback Mechanism	To allow all the personnel in the logistics company address issues, concerns and suggestion.	Warehouse personnel, Forklift operators, BOC personnel, Security guards, Utilities	Quarterly	Establish a regular feedback sessions where employees can anonymously provide input on safety concerns and suggest improvements, ensuring continuous refinement of safety protocols and promoting a culture of open communication and collaboration. Additionally, researchers could develop an online platform or suggestion box system to collect feedback from warehouse personnel, allowing for convenient and confidential submission of suggestions and concerns to management for timely resolution.

Program A. Maintain Existing Safety Protocols. This program focuses on maintaining existing safety protocols within the warehouse environment to ensure maintain and monitor the operational efficiency and minimize errors. Quarterly reviews are scheduled for April, August, and December to carefully monitor adherence among warehouse personnel, forklift operators, BOC personnel, security guards, and utilities staff. These reviews include comprehensive orientations utilizing presentations, handouts, and videos, emphasizing the critical importance of safety measures. The materials are designed to reinforce the specific protocols regarding safety signs, high-visibility clothing, safety glasses, gloves, and footwear. By consistently updating and improving orientation materials, the program aims to enhance awareness, understanding, and compliance with safety standards throughout warehouse operations, thereby fostering a safer working environment and optimizing logistical processes.

Program B. Annual Safety Refresher Training and Practice Session for Warehouse Personnel. This program focuses on conducting annual refresher training and practice sessions to ensure warehouse personnel, forklift operators, BOC personnel, security guards, and utilities staff are well-versed in evacuation procedures and emergency drills. These sessions are strategically scheduled during key safety awareness months: March for Fire Prevention Month and June for Typhoon and Flood Awareness. The training includes comprehensive reviews of evacuation protocols, emergency contacts, assembly points, and roles during crises. Practical drills simulate various emergency scenarios to test personnel readiness and improve responsiveness. Additionally, hands-on training with fire extinguishers and other safety equipment reinforces safety measures. Collaboration with safety officers and external experts ensures the delivery of current safety practices and guidelines. Educational materials and feedback mechanisms are utilized to continuously enhance emergency preparedness and reinforce proactive safety behaviors throughout warehouse operations.

Program C. Feedback Mechanism. This program focuses on implementing a robust feedback mechanism within the logistics company to facilitate communication and continuous improvement. Quarterly feedback sessions are established to allow warehouse personnel, forklift operators, BOC personnel, security guards, and utilities staff to anonymously or openly address issues, voice concerns, and propose suggestions for safety enhancements and operational improvements. These sessions aim to cultivate a culture of open communication and collaboration, ensuring that all employees have a platform to contribute their insights towards refining safety protocols and optimizing warehouse operations. Additionally, an online feedback platform or suggestion box system will be developed to provide a convenient and confidential channel for submitting feedback. This approach enables management to promptly address and resolve concerns raised by employees, thereby promoting a proactive approach to safety management and enhancing overall workplace satisfaction and effectiveness.

CHAPTER 4 SUMMARY of FINDINGS, CONCLUSION, and RECOMMENDATION

Summary of Findings

This chapter consisted of the researchers' results and interpretation of the data that had been collected from the result of the safety protocols within logistics company's warehouse operation.

1. What are the existing safety protocols in logistics warehouse operations?

The survey findings indicated strong agreement among warehouse personnel, forklift operators, security guards, utilities personnel, and BOC personnel on the existing safety protocols in logistics warehouse operations. Respondents particularly agreed that safety signs displayed throughout the warehouse were clear and easy to understand, effectively addressing potential hazards for pedestrians and forklift operations. Regular inspections of forklifts and equipment to ensured proper functioning and safety features also received positive feedback. Overall, these findings highlighted a positive perception of safety measures within CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS).

2. How compliant are warehouse personnel and forklift operators with established safety protocols?

Warehouse personnel and forklift operators exhibited strong compliance with established safety protocols, as evidenced by the survey findings. The majority of respondents, including both groups, strongly supported these protocols. The key indicators such as thorough training, mandatory reporting procedures, and maintaining safe distances from moving equipment were widely endorsed by employees. The grand mean further confirmed the strong agreement across all aspects of safety protocols. Overall, the results suggested a high level of awareness and adherence to safety practices among employees at CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS), encouraging a safe working environment.

3. Why is it important to understand the safety protocols of logistics companies before starting work, particularly concerning the requirement for high-visibility clothing?

Understanding safety protocols, especially regarding the requirement for high-visibility clothing, was crucial before starting work in logistics companies. The survey resulted from CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS) highlighted a strong agreement among respondents regarding the necessity of such protocols for physical safety in warehouse operations. It emphasized the importance of being visible to prevent accidents, particularly in environments with moving equipment and vehicles. This requirement ensured that workers were easily identifiable, reducing the risk of collisions and enhancing overall safety in the workplace. Thus, understanding and adhering to safety protocols, including wearing high-visibility clothing, were vital practices for maintaining a safe working environment in logistics companies.

4. Does enforcing safety protocols, such as mandatory safety gear usage, lead to a reduction in workplace accidents in logistics warehouses over a three-month period?

The findings indicated a high level of agreement among respondents from CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc. (PAGSS) regarding the enforcement of safety protocols in logistics warehouses. Specifically, the majority of respondents agreed or strongly agreed that all personnel consistently wearing provided safety glasses, gloves, and footwear while working. There were no respondents who disagreed or strongly disagreed with this protocol. The mean score suggested strong overall agreement, reinforcing the effectiveness of enforcing safety gear usage. Therefore, it can be interpreted that enforcing such safety protocols likely contributes to a reduction in workplace accidents over a three-month period.

5. What are the most common types of accidents and injuries that occur in logistics warehouse operations?

The survey findings shed light on prevalent accidents and injuries in logistics warehouse operations. Respondents generally agreed that receiving cuts and wounds from handling packaging materials was a common issue. Similarly, slips, trips, and falls were recognized as frequent incidents. Moreover, accidents involving falling objects and collisions with racks or shelves during forklift operations were perceived to occur regularly, garnering agreement from respondents. The overall consensus suggested that these types of accidents were common in warehouse environments, underscoring the importance of implementing effective safety measures to mitigate risks and ensured personnel physical safety.

6. Does the effectiveness of existing safety protocols have a significant effect on the physical health of employees?

The findings suggested a strong correlation between the effectiveness of existing safety protocols in logistics warehouses and the physical safety of employees. Respondents overwhelmingly agreed that these protocols enabled them to focused on their jobs without worrying about potential hazards. Additionally, there was strong agreement that the safety measures provided a sense of security and protection from physical harm. The overall consensus further underscored the unanimous belief among respondents that these safety protocols significantly affected employees' physical safety. This highlighted the importance of maintaining effective safety measures to ensure a safe and productive work environment.

7. The proposed table program for warehouse operations. It outlines three intervention programs designed to enhance safety and operational efficiency, Program A focuses on maintaining existing safety protocols through quarterly

reviews in April, August, and December, emphasizing adherence to safety standards like signage, clothing, glasses, gloves, and footwear across all personnel roles. Program B conducts annual safety refresher training during March (Fire Prevention Month) and June (Typhoon Awareness), encompassing evacuation procedures, emergency roles, and practical drills to ensure readiness and collaboration with safety experts for effective delivery of practices. Program C implements a robust feedback mechanism with quarterly sessions and an online platform for anonymous input from warehouse personnel, forklift operators, BOC personnel, security guards, and utilities staff to address safety concerns and propose operational improvements. This approach fosters a culture of communication, continuous improvement, and proactive safety management to enhance workplace safety, efficiency, and satisfaction.

Conclusion

Based on the preceding findings, the following conclusions are drawn:

The study had been explored the area of safety measures in warehouse logistics operations, particularly focusing on CargoHaus Inc. and Philippine Airport Ground Support Solutions, Inc (PAGSS). The findings underscored the importance of existing safety protocols in ensuring the physical health of the personnel engaged in warehouse activities. Through the analysis of various indicators, it became an apparent that there is a general consensus among respondents regarding the presence and effectiveness of safety protocols.

Following the limitations of this study, particularly the inability to disclosed specific details about safety protocols and accident rates over a three-month period due to confidentiality agreements, the findings on respondents agreement with mandatory safety gear usage highlight the potential value of further research. Future studies employing a qualitative design and broader data access across diverse logistics warehouses could provide a more comprehensive understanding of safety practices and their impact on accident rates.

The study also sheds light on the opinions regarding the types of warehouse accidents, answered varying perceptions among respondents. While some believe accidents occurred fairly often such as cuts, wounds, and falls while others perceive them as less frequent occurrences. Notably, understanding the most common types of accidents and injuries was crucial for developing targeted interventions aimed at minimizing workplace hazards and promoting employee's physical safety.

The findings underscored a significant correlation between the effectiveness of existing safety protocols in logistics warehouses and the physical health of employees. The data revealed that employees overwhelmingly agreed that these safety measures allow them to concentrate on their tasks without the constant concern of potential hazards. This sentiment was supported by the strong consensus that the protocols provide a vital sense of security and protection from physical harm. The unanimous belief among respondents that these safety protocols played a critical role in safeguarding their physical health highlighted the importance of continuously maintaining and improving the existing safety protocols in warehouse logistics operations. By doing so, logistics company warehouse can reduced the risks associated with accidents and injuries, ensuring the safety and security of their personnel while implementing a safety work environment.

Recommendation

1. **Safety Performance Monitoring** - Safety Performance Monitoring - Implement a reporting system for near misses and incidents to identify trends and areas requiring additional attention.To find possible safety concerns before they cause accidents, it is essential to implement a reporting system for near misses and incidents. Organizations can proactively address systemic issues and enhance safety processes by monitoring trends in near misses. This strategy not only stops similar incidents from happening in the future, but it also encourages workers to report near-misses and make their workplace safer.
2. **Recognition and Incentive Programs** - Implementing incentives for departments or teams that achieve milestones in safety performance encourages a collective effort towards maintaining a safe work environment. By rewarding groups for long periods without incidents, organizations can foster a sense of teamwork and shared responsibility in adhering to safety protocols. This approach not only motivates employees to prioritize safety but also celebrates the success of their collective safety efforts, reinforcing the importance of continuous vigilance in preventing accidents.
3. **Adequate Supply of High-Visibility Clothing** - Maintaining an adequate supply of high-visibility clothing is essential for ensuring that workers remain easily visible in warehouse environments, reducing the risk of accidents. Regular inspection of these garments can identify any wear and tear that may compromise their effectiveness, such as fading or tears that diminish visibility. Prompt replacement of damaged clothing is crucial to uphold the safety standards and protect employees from potential hazards in the workplace.
4. **Feedback Mechanism** - Employees can express their worries, share their experiences, and recommend changes to safety procedures by setting up a feedback mechanism. Employee participation in the safety management process empowers them, and it provides insightful data that may improve current safety procedures. Companies may solve possible safety gaps and promote a culture where safety is a shared responsibility by actively seeking out and taking into account employee feedback. This will ultimately result in a safer work environment
5. **Safety Equipment and Gear** - To prevent cuts and wounds from handling sharp packaging materials, it is crucial to equip warehouse employees with cut-resistant gloves, which act as

a barrier against sharp edges and reduce the risk of injury. Non-slip footwear is essential for navigating warehouse floors, especially in areas prone to spills or wet surfaces, as it enhances traction and stability, thereby minimizing the likelihood of slips, trips, and falls. Additionally, protective helmets should be provided to safeguard employees from potential head injuries caused by falling objects, with regular inspections and maintenance of all safety gear to ensure they remain in optimal condition and effective in preventing accidents.

6. **Emergency Preparedness and Response** - Emergency preparedness involves equipping the warehouse with the necessary resources and training employees to respond effectively in case of unforeseen incidents such as fires, chemical spills, or severe weather. This includes providing clear emergency protocols, ensuring access to first aid supplies and equipment, and designating evacuation routes. Regular drills and simulations are essential to familiarize employees with these procedures, ensuring a swift and coordinated response when an actual emergency arises.

7. **Progressive Discipline Approach** - A progressive discipline approach involves a series of consequences that escalate in severity based on the nature of the safety protocol violation and the employee's past behavior. For minor infractions, such as a first-time failure to wear required personal protective equipment, a verbal warning might be issued, serving as a reminder of the importance of adhering to safety rules. In contrast, for more serious violations or repeated non-compliance, such as causing an accident due to reckless behavior, the response could include suspension without pay or, in extreme cases, termination of employment, reflecting the need for accountability in maintaining a safe work environment.

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