

**KOFORIDUA TECHNICAL UNIVERSITY**

**FACULTY OF BUSINESS AND MANAGEMENT STUDIES**

**DEPARTMENT OF PROCUREMENT AND SUPPLY SCIENCE**

**EFFECTS OF GREEN WAREHOUSE MANAGEMENT PRACTICES ON  
ORGANIZATIONAL PERFORMANCE**

**(A CASE STUDY ON JOY INDUSTRIES LIMITED, KOFORIDUA)**

**BY**

**QUANSAH EWURAMAH VERA (B103210107)**

**&**

**ERNEST OWUSU ADDOH (B103210104)**

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AND SUPPLY CHAIN MANAGEMENT**

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## STUDENTS' DECLARATION

We hereby declare that this submission is our own work towards the attainment of the Bachelor of Technology (B.TECH) Procurement and Supply Chain Management and that, to the best of our knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University except where due acknowledgment has been made in the text.

.....

Quansah Ewuramah Vera

(B103210107)

(Student)

Date: .....

.....

Ernest Owusu Addoh

(B103210104)

(Student)

Date: .....

## **SUPERVISOR'S CERTIFICATION**

I hereby certify that this project work was supervised in accordance with the Koforidua Technical University guidelines for supervision of project work.

.....

MR. E, Harrison Nuertey

.....

DATE

## **DEDICATION**

This research work is dedicated to our beloved parents for their tolerance and encouragement throughout the period of this course.

## **ACKNOWLEDGEMENT**

This project work is the product of the combined efforts of people.

First and foremost, we thank God for showing us His unfailing love in completing this project work.

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## **ABSTRACT**

This study investigated the effects of green warehouse management practices on organizational performance, using Joy Industries Limited, Koforidua as a study area. The study objectives were to identify green warehouse management practices used to enhance organizational performance, determine the drivers of green warehouse management implementation, examine the effects of green warehouse management practices on operational performance and assess the challenges in implementation of green warehouse management practices at the Joy Industries Limited, Koforidua. The researchers used purposive sampling to select a sample size of thirty-five (35) employees. Primary source of data was used for this study and structured questionnaires were the primary data collection tool. The results suggested that Joy Industries Limited has been successful in implementing several green warehouse practices such as promoting green packaging for its products, encouraging recycling programs in its warehouse and reusable containers and pallets for its products. Again, the findings established that Joy Industries Limited faces challenges related to high upfront investment, insufficient customer support, a lack of expertise, inadequate legal frameworks, and limited government support when implementing green warehouse management practices. The study recommended that in addition, to improve the capabilities of staff members involved in managing green warehouses, Joy Industries Limited, Koforidua should fund training initiatives. The success of sustainable efforts will be influenced by internal expertise-building.

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.0 Introduction**

This chapter introduces the overview of the study. It discusses the background of the study, the research problem and objectives, the research questions, significance and scope of the study, limitation of the study and organization of the study.

### **1.1 Background of the Study**

Researchers and academics in logistics have focused on the needs of a green approach over the years, particularly green industrial building techniques. The focus of these studies (Longoni et al. 2018; Agyabeng-Mensah et al., 2020a; Zaid et al. (2018) was on the drawbacks, importance, and capabilities of green industrial construction methods among logistics organizations. It is important to look into green warehouse practices since they are beneficial to the environment, the economy, and societies (Tseng et al., 2019). Green industrial building techniques and green warehouse management practices are frequently associated in the logistics sector. Furthermore, there is a great need for green warehousing operations in the logistics industry because of increasing demand and ecological issues about greenhouse gas emissions.

Green warehouse management is the second-most important part of the entire logistics system, behind transportation services (Feng et al., 2018; Khan et al., 2018). Experts also agreed that the practice of green warehousing is employee-centric with regard to the safety and wellness of workers in warehouse environments (Khan, 2019; Zaid et al., 2018). The number of warehouse

infrastructures has gradually increased over time as a result of the vital role that warehouses play in logistics and supply chain management, which has had a substantial detrimental impact on the environment (Bartolini et al., 2019). A sustainability concept must also be adopted by warehouse infrastructures, just as it is in commercial and residential structures (Torabizadeh et al., 2020). To implement the sustainable idea, a parallel method is required because warehouse infrastructures emit pollutants just like other infrastructures do. Although there is still a paucity of literature on the topic, green warehouse practices are receiving more attention from academics and practitioners. For example, previous studies primarily disregarded the significance of green warehousing in favor of elements affecting green supply chains and logistics (Indrawati et al., 2018; Feng et al., 2018) and sustainable warehouse modeling (Baah & Jin, 2019). Research on the origins of green warehousing practices is scant, and knowledge is still limited. As a result, there is a need to increase knowledge and understanding of green warehouse practices, especially one that addresses the potential antecedents that affect organizational performance and the implementation of green warehouse practices. Therefore, the purpose of this study is to investigate the effects of green warehouse management practices on organizational performance, using joy industries limited, Koforidua as case study.

## **1.2 Problem Statement**

A lot of attention has recently been paid to warehousing issues as a result of their growing significance and contribution to the effectiveness of the supply chain. The storage system was initially used as a typical storeroom, but over time it evolved into a cutting-edge, multimillion dollar complex. However, it is believed that storage is the main factor in the rise in greenhouse gas emissions brought on by the supply chain (Bartolini et al., 2019). Global greenhouse gas

emissions have increased during the past few decades. This scenario has harmed the environment and is closely tied to environmental harm, such as resource depletion and global warming. In addition, the manufacturing sector is under constant pressure from the government, customers, and non-governmental organizations to address a variety of environmental issues (Abu-Seman et al., 2019). This pressure includes the need to improve warehousing operations. As a result, the industrial sector is today required to focus more on streamlining supply chain procedures and coming up with novel solutions to the environmental issues brought on by their operations, particularly from the perspective of warehouse operations. Process improvement techniques have been used by the warehousing sector globally to increase operational effectiveness. Given their popularity in managing sustainable warehousing and their ability to boost a company's performance, green warehouse management strategies were selected as strategic methods (Shaharudin et al., 2019).

A number of publications have been published in the literature, and research on green warehouse management has also been carried out in a number of industrial sectors. Lew, Kang, and Siti (2019), for instance, explored the existing green warehouse practice in Malaysia when they looked at the elements that influence implementing green warehousing. In addition, Agyabeng-Mensah (2019) did research on supply chain sustainability's impact on green warehousing, logistics optimization, social values, and economic performance. The findings demonstrate that green storage and logistics optimization have a negative impact on economic performance, but that supply chain sustainability has a positive impact. Aalirezai, Esfandi, and Noorbakhsh (2018) also examined how green supply chain management practices affected the operational, financial, and environmental sustainability of Iranian automotive companies and found that it actually improved the efficiency of suppliers. Therefore this current study investigates the effects

of green warehouse management practices on organizational performance, using Joy Industries Limited, Koforidua as a study area.

### **1.3 Objective of the Study**

The main objective of this current study is to investigate the effects of green warehouse management practices on organizational performance, using Joy Industries Limited, Koforidua as a study area.

Specifically, the study seeks to achieve the following objectives:

1. To identify green warehouse management practices used to enhance organizational performance of Joy Industries Limited, Koforidua.
2. To determine the drivers of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua.
3. To examine the effects of green warehouse management practices on operational performance of Joy Industries Limited, Koforidua.
4. To assess the challenges in implementation of green warehouse management practices at the Joy Industries Limited, Koforidua.

### **1.4 Research Questions**

The study sought to analyses the following research questions in order to achieve the study objectives:

1. What are the green warehouse management practices used to enhance organizational performance of Joy Industries Limited, Koforidua?
2. What are the drivers of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua?
3. What are the effects of green warehouse management practices on organizational performance of Joy Industries Limited, Koforidua?
4. What are the challenges in implementation of green warehouse management practices at the Joy Industries Limited, Koforidua?

### **1.5 Significance of the Study**

Based on the empirical results of this study, manufacturing organizations can use the findings to guide their decisions about the adoption of green warehouse management practices. The results of this study may reveal some important advantages of eco-friendly warehouse management practices for organizational performance, which will help management, make decisions.

This study will aid in the growth of the economy because the manufacturing sector makes a significant contribution to the GDP of the country. As a result, the sector's progress towards sustainability through the adoption of green warehouse management practices will be directly correlated to their economic contribution through increased tax revenue and job creation. Finally, this study will alert the eyes of future researchers to the many research gaps that need to be filled in order to promote knowledge creation.

## **1.6 Scope of the Study**

Contextually, the study aims to investigate the effects of green warehouse management practices on organizational performance. This study particularly focuses on the green warehouse management practices, the drivers of green warehouse management implementation and the effects of green warehouse management practices on organizational performance.

Geographically, the study is limited to Joy Industries Limited, Koforidua in the Eastern Region of Ghana, although could have been carried out in all the other branches but due to time and resources, the Eastern Region branch was used for convenience purpose.

## **1.7 Limitations of the Study**

The researchers were limited by the following:

Due to their perception that the material was confidential, respondents were unwilling to cooperate and provide certain information that was necessary for the study. The researchers were also unable to balance their academics and the research due to time constraints, which prevented them from expanding their work to include all departments inside the corporation. Finally, the research was restricted to one company due to financial constraints. The researchers may have used two or more companies or gained access to more respondents to acquire information.

## **1.8 Organization of the Study**

There are five chapters in this work. The study introduction is presented in the first chapter. It takes into account the study's context, issue statement, research questions, and aims, as well as



the study's importance and its constraints. The second chapter reviews the literature on green warehouse management practices and organizational performance, citing academic works and assessing them in light of relevant theories. The procedures for gathering data, the research design, the population sample size, the sampling strategy, and data analysis methods are all covered in detail in Chapter 3. The analysis of the study and a discussion of the findings are presented in chapter four. The summary of findings, the conclusion, and recommendations for various stakeholders and upcoming researchers are presented in chapter five.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

The relevant research on green warehouse management practices and how they affect organizational performance is presented in this chapter. In addition to analyzing other academic articles pertinent to this specific study, this chapter offers the fundamental ideas and theories guiding this study. The concepts of green supply chain management practices and green warehouse management practices. It also covered drivers of green warehouse management and effects of green warehouse management practices on organizational performance

#### **2.2 Supply Chain Management**

The idea of supply chain management has been studied extensively by academics from a variety of perspectives to fit the environment in which it is used. According to Christopher, (2019) supply chain management is the management of upstream and downstream connections with suppliers and customers to provide higher customer value at lower cost to the supply chain as a whole. According to the aforementioned author, supply chain management is the act of connecting and organizing business operations and maintaining that strategies for the entire supply chain are aligned with the goal of optimizing end users' fulfillment with the supply chain. Green et al., (2019a) argued that supply chain management is the act of linking and establishing business processes and sustaining that technique for the entire supply chain are in line with the objective of maximizing end users' satisfaction in the supply chain. According to Wu et al.,

(2019), supply chain management comprises delivering the right products in the required amount at the right time and in the right place, for the right cost, and in a manner that benefits the target audience. As a result, the author defined supply chain management as a strategy for allocating materials that determines who will receive what and in what quantity at a given time without compromising supply or quality control standards. Despite this managerial approach, the supply chain's complexity and unpredictability, along with other factors, frequently prevent an optimum match between demand and supply from being achieved. Due to overstocking, stock-outs, or lengthy lead times, the so-called bullwhip effect results (Yu, Chavez, Feng, Wong, & Fynes, 2020). The supply chain's implementation is challenging and fraught with risks that demand continuous supervision. One of the key challenges with supply chain management is that sometimes a chain link needs to be severed in order to improve the network's general effectiveness, and this typically results in miscommunication. The compromises made by one party for the benefit of another are considered vital to guarantee the supply chain functions well, despite the fact that it is inappropriate. This is because a supply chain is a network of interlinked processes; as a result, when one part of the chain malfunctions, the entire chain is interrupted. True competition also exists in modern corporations across multiple supply chains, extending beyond only business to company.

### **2.2.2 Green Supply Chain Management**

The idea of managing a green supply chain is gaining importance as society continues to consider and rethink how it will impact future generations. Green supply chain management, according to Xin, Xien, & Wahab, (2019) is the process of integrating environmental concerns into supply chain management practices. The author claimed that supply chain management

integrates several corporate elements, and that supply chain management, often known as "green supply chain management," integrates the environmental factor. Green supply chain management is becoming more popular and is being implemented in the majority of manufacturing companies as a result of the realization that consumers want goods and services that are produced or delivered in line with state environmental laws (Green et al., 2019a). The extent of the concept of green supply chain management cannot be accurately or thoroughly described (Tseng et al., 2019).

Despite the fact that there are similarities among definitions, it is more usually defined in context since it can be challenging to express this notion with a single definition (Tseng et al., 2019). Some academics defined green supply chain management based on the methods employed. For example, in the words of Agarwal et al., (2018), "green supply chain management" refers to a broad variety of activities that are carried out in conjunction with supply chain partners on both an internal and external level. These duties involve green buying, investment recovery, internal environmental management and eco-design. A alternative perspective: According to Placek, (2022), green supply chain management is a rigorous, integrated strategy that can help organizations develop "win-win" strategies that result in the achievement of corporate performance goals and environmental efficiency. These writers' explanation of green supply chain management above is based on the potential benefits that it might provide to businesses who adopt it into their internal procedures.

According to the aforementioned Seman et al., (2019) noticed green supply chain management as a strategy that has a possibility to lower risks associated with ecological instability during the production of the final product within manufacturing businesses due to the benefits it provides. Younis et al., (2019) claimed that while sustainability is a generally acknowledged efficiency

benefit of green supply chain management strategies, it is not the only one. They cited other authors who argued that green supply chain management practices have a variety of performance outcomes, including capacity to absorb and creative efficiency (Hong et al., 2019), financial performance and intangible efficiency (Laosirihongthong et al., 2018), operational efficiency, economic performance, and social performance (Qorri et al., 2018), and operational efficiency, economic performance, and social performance. Supply and demand dynamics and population growth drive enterprises to expand, especially during periods of high demand. Most companies tend to pay little to no attention to the environment at these periods as they focus more on ways to increase output and profit from increased demand. Due to this, the dangerous substances released into the atmosphere do not receive the necessary attention. If there are no effective external controls in place to govern their behavior, both the workers' and the society's health are seriously at risk. This view contends that to effectively manage any environmental risk associated with a firm's activities, environmental considerations must be integrated into organizational procedures. Green supply chain management strategies have been developed by numerous authors. According to Agarwal et al., (2018), examples of practices related to green supply chain management include green warehouse, eco-design, internal environmental management, investment recovery, and customer cooperation, as well as green production, green marketing, and green logistics collaboration with customers. The researchers' present study focuses on environmentally friendly warehouse management techniques.

### **2.3 Green Warehouse Management**

One of the essential aspects of internal and external logistics and distribution is warehousing. Mckinnon, (2020) estimated that warehousing and commodities handling are responsible for 2 to

3 percent of all global carbon dioxide emissions connected to energy. Due to the multiple tasks required for warehouse operation, according to Abushaikh, (2018) they may be a source of non-value added activities. In order to lessen the negative effects that warehousing activities have on the environment and human life, methods and policies that limit waste must be adopted throughout the supply chain (Abushaikh, 2018). Once again, when employees' knowledge is restricted and correct labeling methods are not used, warehouse activities, especially those where hazardous substances are stored, offer many threats to the environment's safety and the health of the workforce. Moving automobiles between warehouses, for example, increases the amount of carbon dioxide emitted into the atmosphere. This demonstrates that warehousing is an area of logistics that requires significant focus from businesses pursuing supply chain sustainability programs to meet stakeholder needs and achieve competitive advantage (Abushaikh, 2018).

The term "green warehouse" refers to the integration and application of a managerial concept and ecology of warehouse operations to reduce energy consumption, energy waste, energy expense, and gas emissions for environmental protection (Bartolini et al., 2019). Green warehousing, according to Lee et al., (2017) refers to improvements that cut down on energy consumption, use sustainable energy and materials, and lessen the quantity of non-recyclable trash generated during warehouse operations. The process of managing warehouse operations in a resource- and environmentally-conscious way is referred to as "green warehouse management," also known as "sustainable warehouse management" or "eco-friendly warehouse management." Green warehouse management's main objective is to lessen the effect of warehouse operations on the environment while also cutting costs and increasing overall effectiveness.

## **2.4 Green Warehouse Management Practice**

Scholars and researchers have been focusing on the criteria for a green approach, in particular, green warehousing methods, for a long time. Given the rising demand and environmental concerns over carbon footprint, green warehousing techniques are crucial for the logistics industry. Given the significance of warehouses in the logistics sector, the number of warehouse infrastructure has continuously increased over time. If green practices are not implemented, it will have a substantial detrimental influence on the environment (Jha, Raut, Gardas, & Raut, 2018). The key benefits of implementing green warehousing techniques include faster reaction times, greater efficiency, and lower inventory levels. Despite the increased interest in green warehousing methods among academics and practitioners, there is still a dearth of literature on the subject. Green warehousing strategies rely on a number of cutting-edge technologies, including barcoding, RFID, electronic data interchange, robotics, and drone technology. Warehouse robots has gone from being a curiosity to being a common practice for larger companies searching for a competitive edge in a time of labor shortages and incredibly demanding clients. Paperless operations in a warehouse can be a useful green warehouse technique that not only minimizes the impact on the environment but also increases productivity and cost-effectiveness, according to Tseng, Wu, Lim, & Wong (2019). Tang and Jiang's (2019) stated that organizations encouraging the use of reusable containers and pallets for products are an environmentally friendly practice that many businesses adopt to lessen their consumption of single-use packaging materials like cardboard boxes and wooden pallets, which frequently end up in landfills.

Due to the increasing requirement to save costs and carbon footprints, warehouse owners are more concerned and dedicated to improving warehousing operations and functions (Wahab et al.,

2018). This makes sense given that the infrastructure and operations related to warehousing are among the essential ones since the impact that these operations have on the environment has grown. Thus, it is believed that it is crucial to explore the possibility of reducing carbon emissions through the use of green warehousing practices since doing so may have positive effects on the economy and society at both the micro and macro levels (Xin et al., 2019). Yildiz and Sezen, (2019) recommended using green energy sources and techniques as well as the use of energy-efficient handling technologies to handle the warehouse and its associated concerns. Tan et al., (2019) proposed that businesses embrace information technology like ithink, which helps to create dynamic links between social, environmental, and economic challenges. Sustainability in the warehouse is improved by using green packaging, which entails using green packaging materials, working with suppliers to guarantee consistency of packaging, minimizing material usage and unpacking time, adopting returnable packaging strategies, and encourage reuse and recycling activities (Ninlawan et al., 2020). Environmental sustainability may be ensured by the repackaging of goods in warehouses using recyclable and biodegradable materials. Green packaging may also cut down on the need for resources and maximize the use of available space in the warehouse to guarantee effectiveness. Businesses that want to enhance the economic performance and sustainability of their supply chains may implement an appropriate warehouse management system, according to Harris et al., (2021). Green warehousing relies on just-in-time (JIT) and space maximization (Tan et al., 2019). JIT intends to use less storage and warehouse space while lowering inventory expenses and waste (Green et al., 2019a,). Agyabeng-Mensah et al. (2020a) claimed that by supporting green building design for its warehouse, a firm can benefit from lower operating costs and a favorable corporate image while also making a contribution to a more sustainable future.



Additionally, Agyabeng-Mensah et al., (2020a) claimed that JIT lowers overhead costs and resource consumption through effective inventory management. According to Wu and Dunn, (2018), effective storage space use, lower retrieval costs, and reduced energy consumption are key objectives of green warehousing. The importance of recycling facilities in fostering green storage to enhance supply chain sustainability was underlined by Wang et al., (2019). For green warehousing to deliver the anticipated sustainability performance result, supply chain participants must work together. According to Ries et al., (2018), green warehouse design features include the utilization of renewable energy sources, daylighting, artificial lighting, temperature management, noise pollution reduction, and biodiversity.

Tang and Jiang, (2019) asserted that green warehouses prioritize energy efficiency by using energy-efficient lighting systems, (heating, ventilation, and air conditioning) systems, and insulation. They may also incorporate renewable energy sources such as solar panels to reduce reliance on non-renewable energy. Tang and Jiang, (2019) added that green warehouses aim to minimize waste generation by implementing recycling programs, reusing materials, and reducing packaging waste. This can include using reusable containers, pallets, and packing materials. Efficient warehouse layout and design can reduce the distance traveled by goods, which not only saves time but also reduces fuel consumption and emissions from forklifts and other equipment (Tseng, Wu, Lim & Wong, 2019).

In accordance with Afum et al., (2020) effective inventory management lessens the need for additional resources and storage space by preventing overstocking. Less waste and less energy use may result from this. Green warehouses take the effects of shipping on the environment into account. To cut the emissions caused by product distribution, they can combine shipments, use eco-friendly transportation methods, and apply route optimization. The implementation of water-

saving techniques, such as the use of low-flow faucets and the optimization of water usage in cooling systems, can support sustainable warehouse management, according to Placek (2022). The author also noted how employing best practices for materials handling and adopting energy-efficient equipment, such as electric forklifts, may lower energy usage and emissions. A crucial component of green warehouse management is embracing technology, such as warehouse management systems that streamline operations, cut waste, and increase efficiency (Zhang & Chen, 2018).

## **2.5 Drivers of Green Warehouse Management Implementation**

It is crucial to identify the drivers of green warehouse management in order to provide the backdrop for the current study. As a result, the section below focuses on the key drivers encouraging companies to adopt green practices.

### **2.5.1 Government rules and legislation**

The rule of law, in accordance with Bhool and Narwal, (2018), is a type of government where a community creates a body of morally sound, just, and equitable laws that are then used to control both society and its government. The norms are set by government legislation, and enterprises must follow by regional, global, and domestic laws while also satisfying customer needs (Luthra et al., 2021). Rehman and Shrivastava, (2021) claimed that regulatory pressure is one of the driving causes behind the development of green supply chains. According to Routroy, (2019), rules from the government can act as a stimulant for the growth of green supply chains. Governments can act as catalysts for the growth of green supply chains in three different ways (Routroy, 2019): they should support environmentally friendly technologies in the key green

warehouse management sectors, encourage the transparency of environmental laws, and launch public awareness campaigns about the importance of environmental protection.

Companies are encouraged to limit their use of non-renewable resources and greenhouse gas emissions through government rules and laws. Chien and Shih, (2019) mentioned that an environmental policy strategy that specifically targets emissions is the most important part of an economical environmental policy strategy. According to Agan, Acar, and Borodin, (2022), regulations increase the fear of fines for non-compliance among enterprises. Bhool and Narwal, (2018) claimed that rules increase the costs of companies that don't adopt green practices by levying fines and penalties. Global environmental rules have altered, affecting everything from pollution control at manufacturing facilities to the real life cycle of the products. As a result, the government is better able to fund initiatives for a green supply chain. Lee, (2018) argued that by offering tax benefits and constructing green construction infrastructure, governments may aid enterprises. This serves as an example of the power that governments may have in promoting the growth of green warehousing.

### **2.5.2 Green Image and Competitive Advantage**

The green warehousing management driver known as "green image" must be present for a manufactured item to be employed in order to give a "greening image" (Bhool & Narwal, 2018). More importantly, the phrase "green image" relates to how well customers view companies that employ environmentally friendly production techniques. An organization's reputation and image can both be improved by implementing green warehouse management (Chin, Tat, & Sulaiman 2018). A business can gain a competitive edge and be eligible for benefits including easier access to financing, cheaper tax rates, and a higher likelihood of landing government contracts by

presenting a good green image to its target market. According to Chin, Tat, and Sulaiman (2018), a business's ability to provide a suitable green image can result in better sales and lower costs, which will strengthen its competitive edge.

### **2.5.3 Public Pressure and Customer Awareness and Pressure**

Consumer demand for eco-friendly products and services, according to Hajikhani, Wahat, and Idris (2021), is one of the major forces behind green efforts. Customers are becoming more and more aware of how certain business activities affect the environment. Businesses are under pressure from customers and the wider public to embrace more ecologically friendly supply chains, which eventually reduces the environmental impact these companies have. According to Trowbridge, (2018), consumers expect the usage of eco-friendly methods and/or green products. Customers consider the environment when making purchases, according to Paco, Raposo, and Filho, (2019). Customers who want environmentally friendly products ask for ISO14001 certification (Agan et al., 2022). All of these researchers agreed that firms implement green warehouse management techniques in response to client pressure.

The media's vital role in educating and informing the public about environmental deterioration has led to a rise in customer concern for environmental issues (Hansen, 2021). People might buy fewer products that they consider to be harmful to the environment as a result. Customers now expect ecologically friendly products in addition to high-quality products, according to Liu, Zhang, Wang, Chen, and Shen, (2018). Enterprises are compelled to think about implementing green warehouse management techniques as a result of this impacting every stage of manufacturing, from product design to end-of-life.

#### **2.5.4 Environmental and Social Responsibility**

Bhool and Narwal, (2018) contended that the motivation for green warehouse management, which aims to assess and accept responsibility for the company's impact on the environment and its impact on social welfare, is social and environmental responsibility. Modern companies engage in corporate social responsibility because they believe they have social and environmental responsibilities. It is a collection of voluntary policies, codes, and recommendations that are pushed by organizations (Broomhill, 2018). Environmental issues are being treated far more seriously than ever before, and corporate social responsibility can help set a company apart from its rivals. Businesses that want to boost their image usually publicize their environmental conservation initiatives to show their commitment to their stakeholders and the broader public (Agan et al. 2022). Rehman and Shrivastava, (2021) suggested that businesses look into corporate social responsibility (CSR) initiatives in order to raise their brand's profile and enhance their reputation. The implementation of green warehouse management is motivated by corporate social responsibility, which seeks to distinguish and improve the organization's reputation.

#### **2.5.5 Financial Advantage**

Green warehouse management can be fueled by the ability to reduce unit costs of manufactured goods or rendered services without compromising the intended use of the product or diminishing its quality (Bhool & Narwal 2018). Remembering that cost savings shouldn't result in a decrease in product quality is essential (Liu et al., 2018). The elimination of non-value-adding components may lead to cost savings. By protecting the environment and reducing manufacturing costs, using less energy, water, and raw materials in the production process can

also have a positive economic impact (Kamolkitiwong & Phruksaphanrat 2018). The implementation of green warehouse management is generally viewed as a win-win situation because it reduces costs, improves operational efficiency, and boosts the organization's reputation (Routroy, 2019). According to Agan et al. (2022), embracing green warehouse management strategies can result in cost savings, increased customer satisfaction, new market opportunities, an improved company image, and increased profitability. According to Rao and Holt, (2018) implementing green warehouse management has the potential to boost competitiveness and economic growth.

## **2.6 Benefits of Implementing Green Warehouse Management**

Green warehouse management strategies are now viewed by corporations as a strategic move in response to consumer demands for items made utilizing operations designed and managed to promote environmental sustainability. Zhu and Sarkis, (2018) found a link between the implementation of green warehouse management strategies and improvements in economic and environmental performance. They also talked about how extending green procurement techniques from direct suppliers to additional providers could have a "green multiplier effect." Green supply policies are therefore expected to improve economic, social, and environmental performance. The companies' profits rise as a result of producing environmentally friendly goods, according to green warehouse management. Green warehouse management, in accordance with Ottman et al., (2019), also encouraged environmental preservation inside the company and its surroundings and takes into account suggestions from employees on how to enhance the performance of the supply chain, which has an effect on the environment. By maximizing the usage of all packages and wrappings and reducing waste production, it

minimizes the cost of packaging (Zhu et al., 2018). The author further emphasized that green warehouse management practices provide a strong emphasis on waste control because it is connected to environmental sustainability. Waste reduction can improve economic performance by lowering costs. Rao and Holt, (2018) noted a connection between green supply chains and economic performance and said that green warehouse management practices are intended to boost both economic performance and corporate competitiveness. According to Zhu et al. (2018), businesses utilize green warehouse management strategies to lower the cost of product packaging, lessen their environmental impact, and perhaps even improve their brand image by showing a dedication to sustainability.

Green warehouse management, according to Klassen and McLaughlin, (2018) improves economic, operational, and environmental performance, lowers costs, and demonstrates its ability to meet consumer needs for products and services linked to environmental sustainability. As a result of price and marketing effects of environmental, economic, and operational performance, overall financial and marketing performance ought to improve. The buyer's interest in manufacturing businesses improves marketing and financial performance (Dieste et al., 2019). The authors further emphasized that manufacturers need to create environmental education that addresses changing consumer demands as people want environmentally responsible products and services.

## **2.7 Barriers to Green Warehouse Management Implementation**

Koho, Torvinen, and Romiguer, (2019) conducted a study on the challenges faced by Spanish enterprises seeking to achieve sustainable growth. According to their investigation, a lack of client demand, a lack of established metrics or performance benchmarks, and a lack of precise

concepts are the largest barriers to the implementation of green warehouse management. Green warehouse management strategies are nonetheless hampered by a few other factors, such as top management support, technology risk, trade-offs, and regulatory limitations. Similarly to this, according to Bhateja, Babbar, and Singh, (2021)'s research, cost and complexity are thought to be the main barriers to implementing green warehouse management, whereas brand building is one of the top incentives. Using interpretive structural modeling, Luthra et al., (2021) examined the difficulties in implementing green warehouse management in the Indian automobile industry. This study found that the absence of green practices, market competition and uncertainty, cost considerations, and customer ignorance are the top level barriers to implementing green warehouse management in the Indian automobile industry, while a lack of government support systems is the top level barrier at the bottom.

Similar findings were made by Singh et al., (2018), who identified twelve barriers or impediments to the successful implementation of green warehouse management concepts in the Indian manufacturing industry. These challenges included: a dearth of empirical research; a lack of knowledge among clients, vendors, and shareholders; higher costs; a lack of management expertise and knowledge; a lack of company awareness, a lack of management commitment, and a lack of coordination between various departments; a dearth of government support; a requirement for the creation of new analytical tools and models; an incompatibility with various management and manufacturing systems; and a failure to implement necessary measures.

According to Barve and Muduli (2019), when green warehouse management was adopted, the Indian mining sectors encountered a variety of challenges. Eleven distinct significant barriers have been found, according to the study's findings. Implementing green warehouse management has several significant challenges, including insufficient legal frameworks, a lack of



environmental consciousness, insufficient societal pressure, a knowledge gap, and capacity constraints. Similar to this, Mathiyazhagan et al., (2021) concentrated on Indian SMES when talking about the difficulties in implementing green warehouse management. The findings showed that challenges with attitudes, a lack of information, and a lack of skills to guide implementation are the biggest barriers to the adoption of green warehouse management in enterprises. The difficulties posed by Chinese enterprises wishing to use extended supply chain approaches for carbon and energy reduction were also examined by Zhu and Geng, (2021). The study employed both descriptive and hierarchical analysis on 299 questionnaires. The results of this study indicate that a lack of financial rewards, resources, and capability are the main internal barriers keeping Chinese manufacturers from adopting green practices. Mathiyazhagan et al., (2021) drew attention to barriers to the adoption of green warehouse management within the context of the Indian automobile industry based on current studies. According to the study's findings, a lack of corporate social responsibility, a lack of training programs, a lack of organizations that watch over and mentor the industry, a lack of customer awareness, and a lack of interdepartmental cooperation in communication are the main barriers to the implementation of green warehouse management.

Furthermore, Faisal, (2018) talked about how pharmaceutical companies in Karachi act in response to the difficulties associated with managing green warehouses. In this study, exploratory and confirmatory factor analyses were both employed. The findings of this study demonstrated the existence of both internal and external barriers to the adoption of green warehouse management. Gábríel, (2019) examined the difficulties Hungarian automakers had implementing green warehouse management. The findings of this study showed that economic factors (high investment requirements and customer cost pressure) are the main barriers to green

warehouse management. Rozar et al., (2021) also looked into a study of 153 Malaysian manufacturing companies. The study's findings indicate that problems about environmental resources, government support, strategies and awareness, and customer demand are the main barriers to the implementation of green warehouse management. In addition to attitude and perception, weak external collaborations, firm regulations, a lack of customer demand, insufficient expertise, and environmental commercial benefits, green innovation is also impacted by these factors.

Ninlawan, Seksan, Tossapol, and Pilada, (2020), identified and highlighted challenges to implementing green warehouse management in the manufacturing sector of Mozambique. Costs, culture, and governmental laws are said to be the major barriers to the adoption of green warehouse management solutions in the Mozambican context. The most significant challenges that prevent the adoption of green warehouse management methods are identified. Furthermore, corruption is thought to be a hindrance, but the literature contains little to no research on the subject. Wang, Mathiyazhagan, Xu, and Diabat, (2019) highlighted the primary challenges to implementing green warehouse management in the food packaging company. This study discovered a number of problems that act as barriers to the adoption of green warehouse management. The results of this study show that some of the biggest barriers include a lack of effective training and progress monitoring, a lack of consumer education, and a lack of pressure to expand the usage of green warehouse management.

Majumdar and Sinha, (2018) examined the considerable challenges associated with managing the supply chain for environmentally friendly textiles and clothing in the context of the Indian fashion industry. Twelve important barriers have been identified through literature reviews and questionnaire surveys. Interpretive structural modeling has been used to examine the contextual

connections between the barriers. According to the study's findings, complexity in the design of green systems and processes was the main obstacle that posed the biggest driving force. According to the poll, the supply chain for green textiles has additional basic obstacles such as high implementation and maintenance costs, a lack of regulatory authority guidance and support, and a lack of customer support and encouragement. Lack of green suppliers is the challenge that is most reliant on and impacted by all other challenges in this study.

## **2.8 Organizational Performance**

The concept of organizational performance is crucial for all companies since achieving the initial goals and objectives of an organization is one of its most important management tasks. Organizations must employ management, planning, and performance evaluation to do this. However, what matters is that organizations use performance management that is focused on measurement and planning to close the gap between them (Zhang et al., 2020). According to Barakat, (2005) organizational performance is the outcome of a complex web of interactions between people, the tools, techniques, and equipment they utilize, as well as between these people and the environment and culture in which they work.

Performance is typically best defined as how a person, group of people, or thing carries out a task or activity. Performance can be represented visually in organizational research at many levels of examination. In this study, organizational, team, and individual levels are distinguished (Knies et al., 2019). According to Chen and Barnes, (2020) organizational performance is also the relationship between minimum and reasonable cost, economy, high cost and valued output, or efficiency among production and realized effectiveness. According to Lee et al., (2018) organizational performance is the effort and activity of individuals to carry out and enhance a

certain task in many ways; it executes the work plans without violating the essential requirements. Environmental performance is used to gauge environmental protection and corporate environmental management, as noted by Chuang & Huang, (2018). As a result, ISO created a definition of environmental performance for the ISO 14001:2004 standard for the management of environmental systems. Businesses can manage the environmental system in a way that produces quantifiable results by controlling environmental elements through environmental policies, objectives, and indicators.

In this context, Jain and Sharma, (2020) argued that climate change is to blame for rising global temperatures, greenhouse gas emissions, energy prices, and resource costs. Additionally, market competition, international expansion, and growth all attest to the fact that more businesses are choosing to be environmentally friendly. According to Alvarez Gil et al., (2021), the company's environmental performance focuses on lowering air emissions, wastewater production, solid waste generation, material consumption, minimizing the frequency of environmental mishaps, and improving the overall state of the environment. According to Vachon and Klassen, (2019) dealing with suppliers who adhere to environmental norms and standards or reviewing and monitoring them may not be enough to improve a company's environmental performance. However, by working with suppliers to implement green warehouse management techniques, design green products, organize consciousness seminars, and assist suppliers in developing their environmental program; greater environmental performance can be accomplished.

### **2.8.1 Measures of Organizational Performance**

Every organization aspires to increase performance, but doing so requires precise performance measurement. Profit, cost, return on investment, and sales was some of the characteristics of

organizational performance that were utilized to evaluate green warehouse management (Mbah et al., 2019). A range of operational, organizational, corporate, and financial measures had been used to evaluate performance in green warehouse management. Financial performance and customer performance are the suggested indicators of firm performance in this current study.

### **2.8.1.1 Financial Performance**

According to Lee et al. (2019), a company's financial performance refers to how it does in terms of its total assets, sales growth, and income growth in comparison to its primary competitors. According to Fombrun (2020), comparable to brand equity, a positive reputation can give a company a competitive edge. Gimenez et al. (2021) have demonstrated that adopting green warehouse management measures increases the likelihood that purchasing organizations would experience beneficial economic outcomes. According to research by Yawar and Kauppi (2018), the financial or economic performance of dairies has a major impact on how much they engage in green warehouse management techniques that address environmental challenges in the supply chain. If a corporation engages in green warehouse management, its environmental performance can have a direct impact on its financial success. Businesses that are more environmentally conscious demand the same conduct from their suppliers and establish higher social criteria for them. By reducing adverse environmental effects and ensuring seamless productivity, which translates to better financial performance, this will benefit the entire supply chain.

### **2.8.1.2 Customer Performance**

Customer performance is the quantified financial or non-financial result of a customer connection over a set time period (Chuang & Huang, 2018). Since customers serve as a conduit

between a firm and its clients, any business entity must deliver excellent performance for them. Effective customer performance is demonstrated by green product innovation, product quality, on-time delivery, and competitive pricing. Green warehouse management has a big impact on customer performance outcomes. To establish and keep a firm's competitive edge, customers must perform well (Li et al. 2019). According to Krause et al., (2019), green warehouse management is increasingly becoming a source of competitive advantage for several rival companies. Gonzalez and Quesada (2021) accurately observed that the most crucial management practice for guaranteeing product quality and customer satisfaction is green warehouse management. Businesses should put more focus on their ability to develop and strengthen their green practices in a strategically important area, like green warehouse management, in order to achieve this goal.

## **2.9 Green Warehouse Management Practices and Organizational Performance**

In order to increase their economic performance and lessen their impact on the environment, a number of businesses engage in green initiatives (Feng et al., 2018; Baah & Jin, 2019). Green warehousing, according to Coyle et al. (2019) and Amemba et al., (2021), entails using the least amount of energy possible while making the most of available space in order to cut costs, assure efficiency, and improve economic performance. Additionally, green warehousing uses clean energy, which may spare businesses from paying environmental fines. Furthermore, according to Indrawati et al., (2018), warehouses constructed with high-energy performance certificates use less energy, which lowers energy costs and increases profitability.

Additionally, green warehousing may result in enhanced economic performance by eradicating the expense of pollution control through zero production of waste and emission. Once more, energy usage is reduced thanks to ecological initiatives involving lighting, airtightness, and thermal insulation in the Warehouses. Cox and Graham, (2020) contended that green warehousing makes the best use of available capacity to boost profitability. Like other green supply chain techniques, green warehousing operations are recognized as an effective strategy for enhancing operational performance (Wong et al., 2022; Zailani et al., 2021). Utilizing green technologies in warehouses may reduce waste management efforts and raise process quality, giving businesses the flexibility to adapt to shifting consumer demand and boost revenue and profitability. According to Zhu et al., (2018) sustainable green storage management enables businesses to maximize effective inventory management and storing capacity.

Green warehouse management reduces the negative consequences of manufacturing processes, strengthening a company's competitive edge. Green warehouse management practices improve innovative managerial leadership, increase organizational effectiveness, and build brand recognition for the business. Simper et al., (2019), survey found that 43% of respondents claimed their companies want to align green warehouse practices with their company goals. Prior studies have shown that well-designed environmental management in supply chains can give companies a competitive advantage and improve their financial performance (Shi et al., 2018). The effectiveness of businesses is impacted by green warehouse management practices, according to a study by Tseng et al, (2019). In their empirical investigation of the effects of JIT, TQM, and green warehouse management on environmental sustainability, Green et al. (2018b) discovered that JIT and TQM had positive, direct effects on green warehouse management practices.

Additionally, they discovered that JIT, TQM, and green warehouse management strategies work well together because they each have a stronger impact on the sustainability of the environment.

Inman and Green, (2018) claimed that over the previous ten years, the majority of research has been conducted to look at the effects of motivations for implementing green warehouse management practices as industries adopt or start implementing them, shifting the research focus to the effect of green warehouse management practices on organizational performance. Research was done by Khan, Kusi-Sarpong, Arhin, and Kusi-Sarpong, (2018) to examine how the identical situation would perform when using green warehouse management strategies. Liang, et al., (2020) conducted research to examine how performance in the same situation will be affected by green warehouse management strategies. The empirical information was supplied by 159 factory managers and was compiled using SEM. However, the managers who provided the data showed the degree to which their organizations worked with customers and suppliers to improve the supply chain's environmental sustainability. According to the survey, businesses who adopted green warehouse management performed better economically and environmentally, which benefited operational effectiveness. In order to better understand how operational efficiency boosts business success, Wang, Mathiyazhagan, Xu, and Diabat, (2019) looked at the effect of green warehouse management strategies on the corporate efficiency of Jordan's food industry.

They also used a survey instrument to collect empirical data from six experts in the food sector and companies that employed the concept of green manufacturing. The study's conclusions showed how eco-friendly warehouse management practices affect the efficiency of organizations. Bastas, and Liyanage, (2019), looked at top management positions and social capital in connection to how institutional pressures affected green warehouse management and company performance. The results show a significant relationship between green warehouse



management and firm success. Baah, (2019), looked into how green warehouse management techniques affected organizational performance in Pakistan. The findings revealed a link between the independent variables and organizational success, with the exception of the green buy. The ecological design of green practices and green information systems, however, has demonstrated a major impact on the performance of the company.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.0 Introduction**

This chapter contains the research design, population of the study, sample size and sampling technique, sources of data, data collection instrument and procedures, data analysis as well as the brief profile of the organization.

#### **3.1 Research Design**

The study employed descriptive research for the purposes of this investigation. This is due to the fact that descriptive research is also quick and economical. Additionally, it may be applied to a wide range of objectives, making it an extremely flexible form of data collection.

#### **3.2 Research Approach**

The researchers used a quantitative research approach for this specific study. This technique was used to assist the researcher in performing an empirical investigation into the phenomena under

study in order to develop a quantifiable link between the researched variables. Additionally, this approach made it possible for the researchers to quantitatively define the link between the variables and foresee how one variable would affect another. Predictions are often of importance to quantitative research methods, which aim at improving objectivity, reproducibility, and generalizability of findings.

### **3.3 Population of the Study**

The population for this study comprises of all the staff of Joy Industries Limited, Koforidua. The company has a total population of seventy-one (71) employees. The subdivision population are; Procurement Department (5), Finance and Accounting Department (4), Warehousing and Distribution Department (11), Quality Control and Assurance Department (5), Engineering Department (4), Production Department (15), Marketing and Sales Department (6), IT Department (5) Maintenance and Facilities Department (5), Research and Development (R&D) Department (6) and Human Resources (HR) Department (5).

### **3.4 Sample Size and Sampling Techniques**

For the purpose of this study, purposive sampling technique was used. The study used purposive sampling technique since it allows the researchers to select a sample with experience and knowledge about the study variables. In addition, the researchers used purposive sampling to ensure that the selected cases provide the richest and most informative data for the research question.

A sample size of thirty-seven (37) was chosen for the study. The researchers focused on the staffs within the following departments of the company namely; Procurement Department (5),

Warehousing and Distribution Department (11), Research and Development (R&D) Department (6) and Production Department (15). Staffs within these departments were selected because they are directly involved in the supply chain process and will contribute to giving credible information related to the study.

### **3.5 Sources of Data**

For the purpose of this project, primary source of data was used. The primary source of data for this study was obtained from the questionnaire administered to employees and management of the Joy Industries Limited. Primary sources of data were used because it helps the researchers to gain concrete information and ideas from persons who are directly on the field of study.

### **3.6 Data Collection Instrument**

Structured questionnaires were the primary data collection tool. The researchers administered the closed-ended surveys themselves. The researchers used a manual method of data collection for the initial data collection. The questionnaire included questions meant to address the study's objectives. As a result, the questionnaire was split into two parts. While sections B, C, D and E contained questions addressing the study's objectives, section A asked for bio information of the respondents. On a 5-point Likert scale, which ranges from strongly disagree to strongly agree, these questions were assessed. The respondents' level of agreement with the numerous questions posed about their company was indicated by the respondents using this scale.

### **3.7 Data Collection Procedures**

Prior to the research work, an introductory letter was taken from the Faculty of Business and Management Studies (Procurement and Supply Science Department) of Koforidua Technical University and was submitted to the case study area (Joy Industries Limited). Upon approval of the request by the Managing Director, the necessary means of collecting data was employed in order to get the required information. The data collection process took place during a three (3) day period. The questionnaire was distributed to respondents personally by the researchers. After

the process, some of the questionnaires were not clearly answered by the respondents. This made the researchers to go back to the institution to explain the questions to the respondents, so they can provide more clarification.

### **3.8 Data Analysis**

To characterize the variables, descriptive statistics are employed, including frequency counts, percentages, and descriptions. The completed questionnaires were collected, classified, and organized to make identification simple. The data was analyzed using the Statistical Package for Social Science (SPSS), and the graphics were created using Microsoft Excel. To determine the frequencies of the variables, responses were totaled and later translated into percentages. Data was presented statistically in tables and chart formats.

### **3.9 Profile of Joy Industries Limited**

Joy Industries Limited engages in the manufacture, distribution and sale of alcoholic and non-alcoholic beverages and their ancillary products. The firm operates through the following segments: Alcoholic Beverages, Non-Alcoholic Beverages and Spirits. Joy Industries Limited started about 10 years ago and through prudent management and hard work of employees, it has risen to be counted as one of the leading alcoholic beverage producers in the country. Products made by the company now apart from Joy Ointment include Joy Dadi Bitters, Joy Medicated Soap, Joy Twedea Bitters and Joy Mmaa Twedea Bitters.

It all began in a humble single bedroom apartment with just one product, Joy Ointment, then being managed by Dr. Takyi, Dr. Harrison and Dr. Enoch Sorgin. Joy Industries offer unrivaled high standards, from a selection of highest grade materials to perfection processing techniques

that ensure maximum quality, efficacy, and safety. Every Lot of products are routinely tested by its Quality Control Department. They are tested for heavy metals, purity and microbial content to eliminate any contaminant.

The safety of our people, contractors, customers and consumers is fundamental to our business. We are also committed to the highest standard of quality alcoholic and non-alcoholic beverages every day, everywhere. We demonstrate the highest standards of integrity in everything we do. Our engagement with consumers, customers, employees, government officials, suppliers, shareholders and other stakeholders is driven by our values, beliefs and principles. We view diversity as one of the key enablers that helps our business to grow; and our values, purpose and standards set the conditions for us to respect the unique contribution each person brings.

### **3.9.1 Purpose of Joy Industries Limited**

Celebrating life every day, everywhere.

### **3.9.2 Vision of Joy Industries Limited**

To be the best performing, most trusted and respected consumer Products Company in Africa.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND DISCUSSIONS**

#### **4.0 Introductions**

This chapter presents the analyzed data together with their interpretation as well as the discussion of findings.

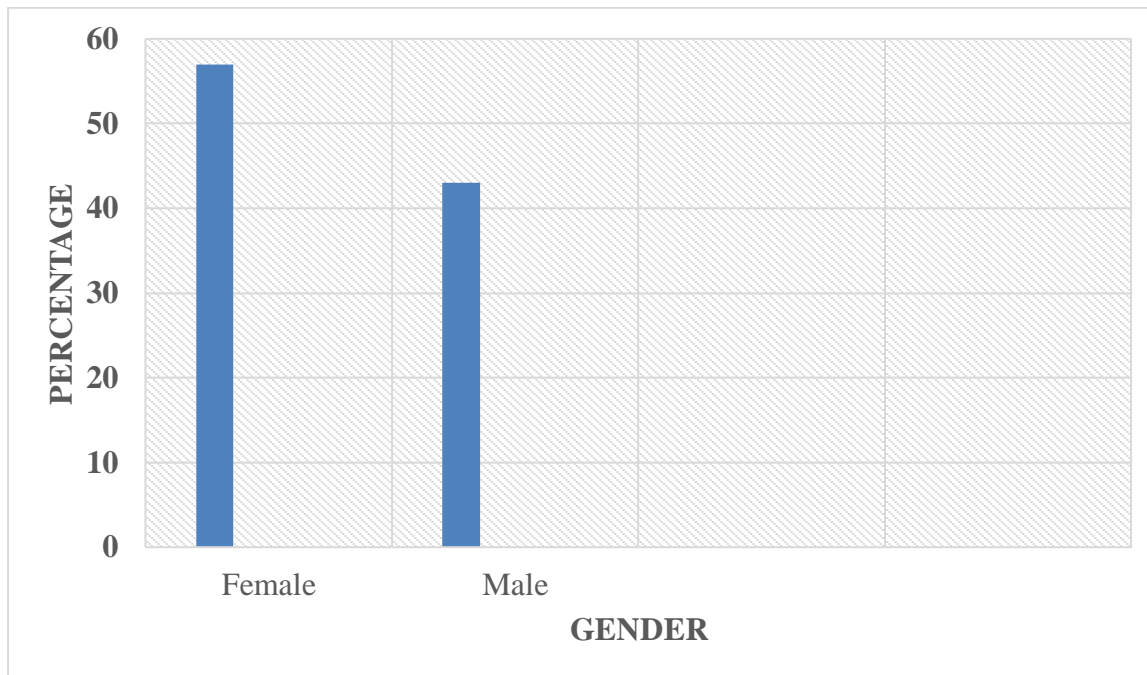
#### **4.1 Response Rate**

Thirty-seven questionnaires were administered to respondents who are employees at Joy Industries Limited, Koforidua. In all thirty-five (35) answered questionnaires were retrieved. This gives 95% response rate i.e.  $(35 \div 37) \times 100$ .

#### **4.2 Biodata of the Respondents**

The static or demographic characteristics of the workers, such as their gender, level of experience, and department, appear to be the focus of this section of the data analysis.

**Figure 4.1: Gender of Respondents**

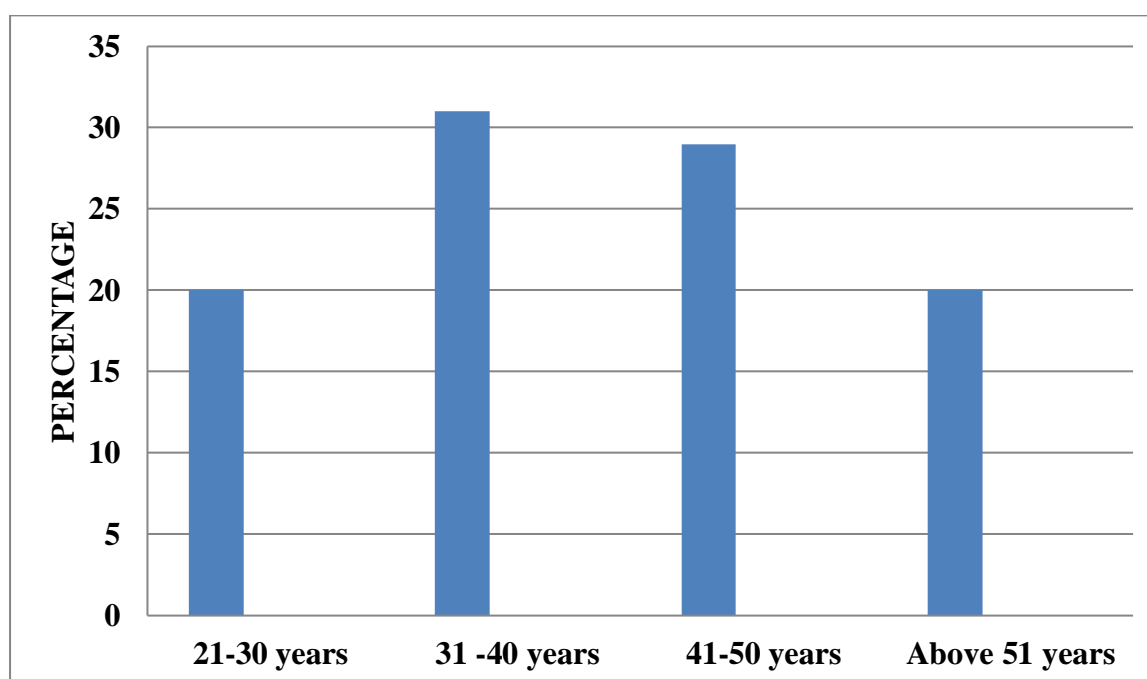


**Source: Field Survey, 2023**

Male respondents make up 15 (43%) and female respondents make up 20 (57%) of the respondents, according to Figure 4.1. This indicates that respondents who are female make up the majority. However, the aforementioned data reveals that there were more female respondents than male respondents, indicating a high level of gender diversity inside the organization. The conclusion is that a firm that prides itself on having a varied culture will draw more talented individuals to work there, boosting efficiency.



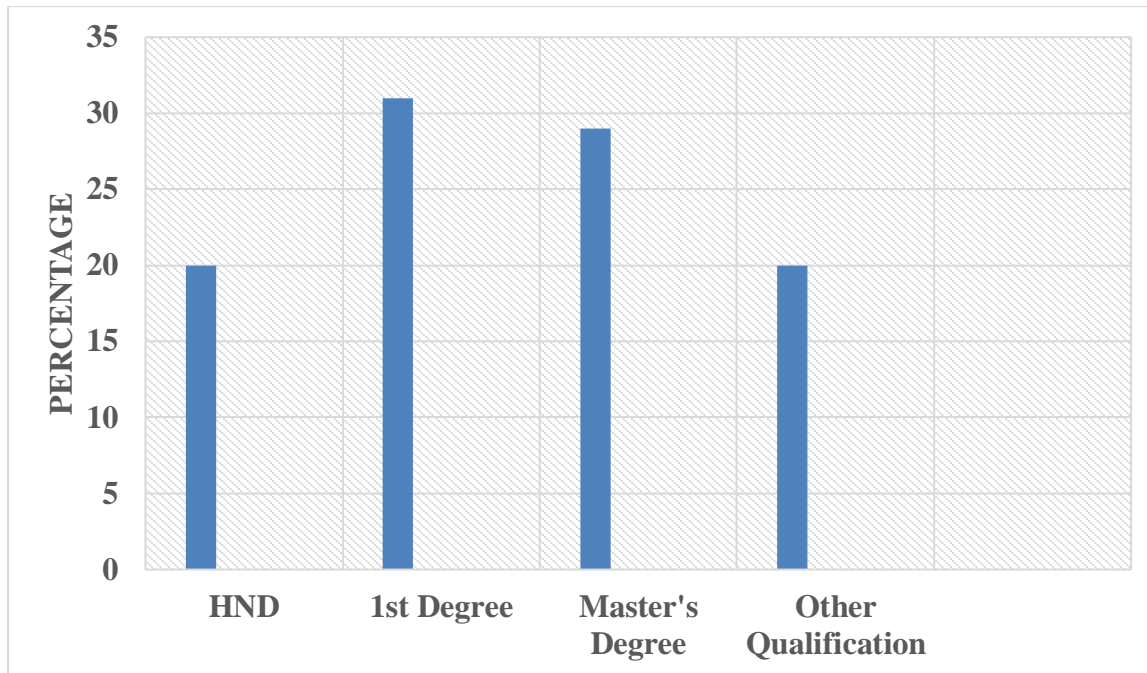
**Figure 4.2: Age of Respondents**



**Source: Field Survey, 2023**

From Figure 4.2, 7(20%) of the respondents were between 21–30 years, 11(31%) were between 31–40 years while 10(29%) of the respondents were between 41-50 years whereas 7(20%) were above 51 years. This means that most of the respondents were between 31-40 years. This implies that the company has employees whose age range between 31-40 years can bring fresh perspective and a different way of thinking to the company because such employees are eager to learn, build their experience and apply their skills in the workforce.

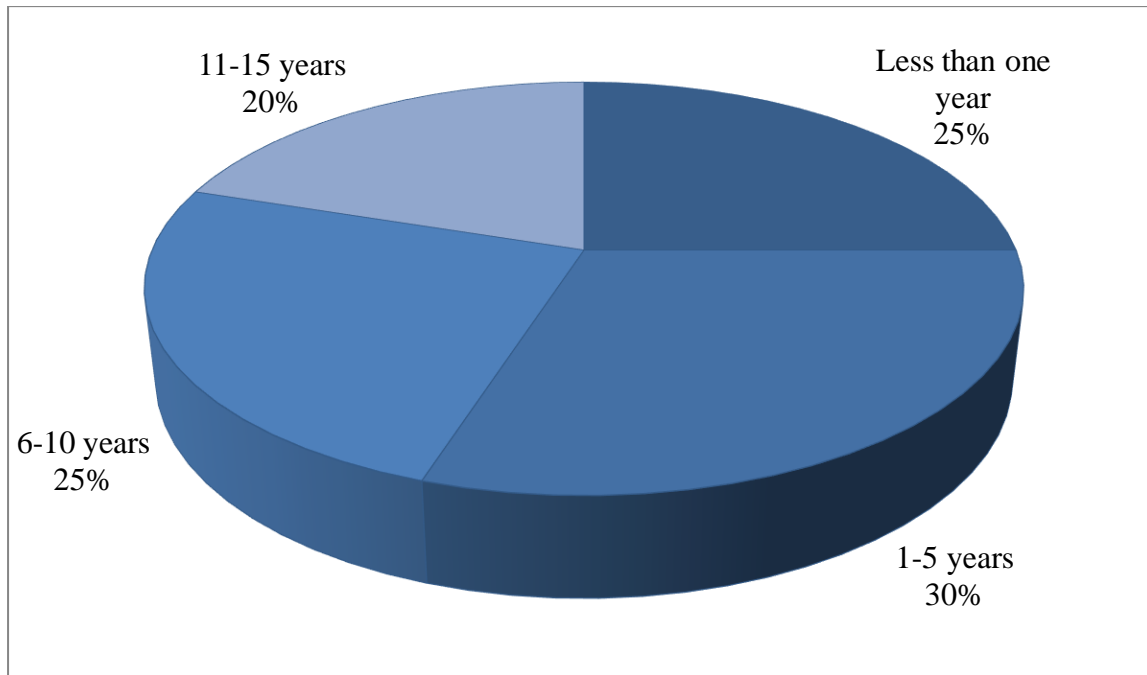
Figure 4.3: Educational Qualification



Source: Field Survey, 2023

From Figure 4.3, 7(20%) of the respondents were Higher National Diploma Holders while 11(31%) were 1<sup>st</sup> Degree holders. In addition, out of the 35(100%), 10(29%) of the respondents were Master's Degree holders whereas other qualifications constitute 7(20%) of the respondents. This means that most of the respondents were 1<sup>st</sup> Degree holders and have the necessary qualification to perform their departmental functions. This could foster increase in productivity.

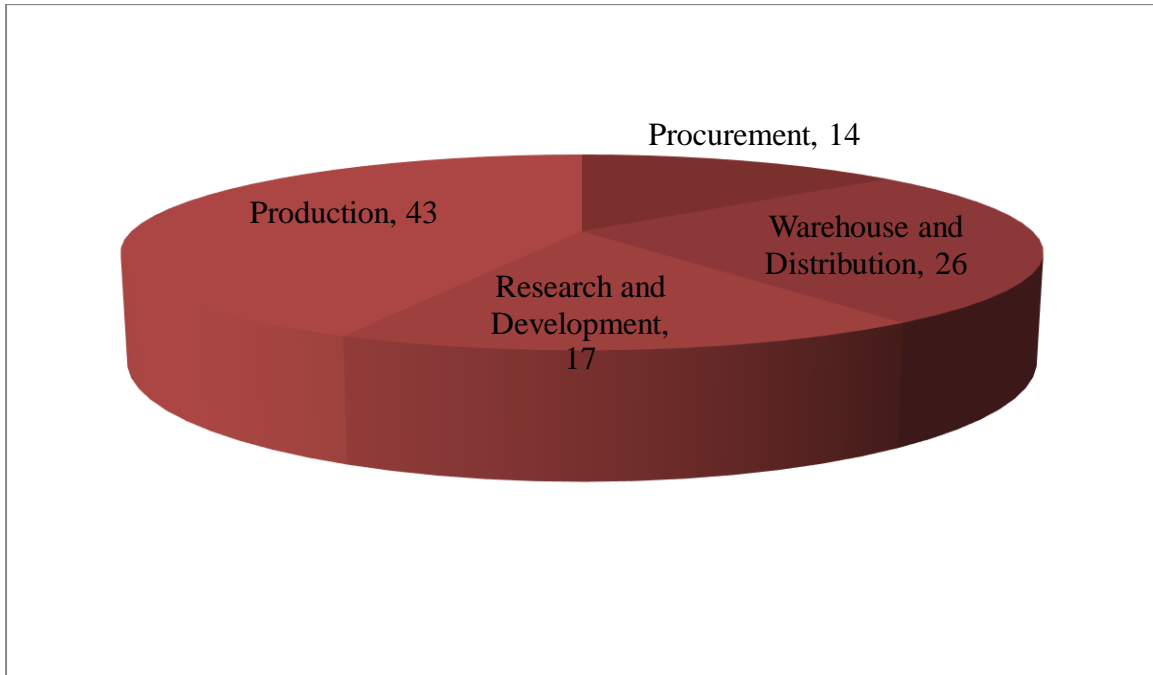
**Figure 4.4: Work Experience of Respondents**



Source: Field Data, 2023

Figure 4.4 depicts that 10(25%) of the respondents have worked for less than one year while 12(30%) have worked between 1–5 years but 10(25%) have worked between 6–10 years. Again out of the total 35 sampled respondents, 8(20%) had worked between 11–15 years. This means that major of the respondents have worked between 1–5 years. This implies that the respondents have the requisite work experience to perform their departmental duties.

Figure 4.5: Department of Respondents



Source:

Field Survey, 2023

From Figure 4.5 procurement department constitutes 5(14%) of the respondents whiles 9(26%) are from the warehouse and distribution department. It was also discovered that research and development constitutes 6(17%) whiles production departments constitute 15(43%) of the respondents. This means that the production department has a larger population as compare to the other departments.

### **4.3: The green warehouse management practices used to enhance organizational performance of Joy Industries Limited, Koforidua**

**Table 4.1: Green Warehouse Management Practices**

Green warehouse management practices	Strongly Agree		Agree		Not Sure		Strongly Disagree		Disagree		Total	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
The company promotes green packaging for its products	32	91.0	0	0.0	0	0.0	3	9.0	0	0.0	35	100.0
The company uses renewable energy sources in its warehouses	28	80.0	4	11.0	3	9.0	0	0.0	0	0.0	35	100.0
The company encourage recycling programs in its warehouse	30	86.0	5	14.0	0	0.0	0	0.0	0	0.0	35	100.0
The company promotes reusable containers and pallets for its products	33	94.0	0	0.0	0	0.0	2	6.0	0	0.0	35	100.0
The company ensures paperless operations in its	9	26.0	5	14.0	10	29.0	11	31.0	0	0.0	35	100.0

warehouses												
The company endorses green building design for its warehouse	29	83.0	5	14.0	1	3.0	0	0.0	0	0.0	35	100.0

*Source: Field Survey, 2023*

Pertaining to the green warehouse management practices used to enhance organizational performance of Joy Industries Limited, Koforidua, 32(91%) of the respondents strongly agreed that the company promotes green packaging for its products while 3(9%) of the respondents strongly disagreed. The findings suggest that Joy Industries Limited in Koforidua has been successful in promoting green packaging practices, with strong agreement from the majority of respondents. The results are in line with Ninlawan et al.'s (2020) assertion that organizations using green packaging for its products improves sustainability in warehouses.

Again, majority constituting 28(80%) of the respondents strongly agreed that the company uses renewable energy sources in its warehouses whereas 4(11%) agreed. Again out of the total 35 sampled respondents, 3(9%) of the respondents were neutral. The findings indicate that a majority of respondents have a positive perception of the company's use of renewable energy sources in its warehouses. The results are consistent with Ries et al.'s (2018) assertion that green warehouse design aspects include the use of renewable energy sources, daylighting, artificial lighting, temperature control, noise pollution reduction, and biodiversity.

Moreover, it was discovered that the company encourage recycling programs in its warehouse. The evident shows that majority representing 30(86%) of the respondents strongly agreed to this assertion whereas 5(14%) agreed. The findings suggest that the company encourages recycling programs in its warehouse, and this encouragement appears to be well-received by its employees. The results reflect Tang and Jiang's (2019) assertion that green warehouses work to reduce waste generation by putting recycling programs in place, reusing goods, and minimizing packaging waste.

Furthermore, majority of the respondents constituting 33(94%) strongly agreed that the company promotes reusable containers and pallets for its products whereas 2(6%) strongly disagreed. The findings reveal a strong consensus among the surveyed respondents in favor of the company's promotion of reusable containers and pallets for its products. The results support Tang and Jiang's (2019) assertion that organizations encouraging the use of reusable containers and pallets for products is an environmentally friendly practice that many businesses adopt to lessen their consumption of single-use packaging materials like cardboard boxes and wooden pallets, which frequently end up in landfills.

Similarly, out of the total 35 sampled respondents, 9(26%) strongly agreed the company ensures paperless operations in its warehouses whiles 5(14%) agreed. In addition, 10(29%) were not sure but 11(31%) disagreed to the notion that the company ensures paperless operations in its warehouses. These respondents disagree with the notion that the company ensures paperless operations in its warehouses. Their responses indicate a significant skepticism or lack of belief in the company's efforts to go paperless. According to Tseng, Wu, Lim, and Wong's (2019), paperless operations in a warehouse can be a valuable green warehouse strategy that not only reduces the effect on the environment but also boosts productivity and value for money.

Lastly, 29(83%) of the respondents strongly agreed that the company endorses green building design for its warehouse whereas 5(14%) of the respondents agreed whereas 1(3%) were uncertain. These findings reflect a generally positive perception among the survey respondents regarding the company's commitment to green building design for its warehouse. The results are in line with those of Agyabeng-Mensah et al. (2020a), who claimed that organizations adopt green building design for its warehouse to contribute to a more sustainable future.

#### **4.4 The drivers of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua**

**Table 4.2: Drivers of Green Warehouse Management Implementation**

<b>Drivers of green warehouse management implementation</b>	<b>Strongly Agree</b>		<b>Agree</b>		<b>Not Sure</b>		<b>Disagree</b>		<b>Strongly Disagree</b>		<b>Total</b>	
	<b>(f)</b>	<b>(%)</b>	<b>(f)</b>	<b>(%)</b>	<b>(f)</b>	<b>(%)</b>	<b>(f)</b>	<b>(%)</b>	<b>(f)</b>	<b>(%)</b>	<b>(f)</b>	<b>(%)</b>
Government rules and legislation	25	71.0	0	0.0	10	29.0	0	0.0	0	0.0	35	100.0
Green image and competitive advantage	30	86.0	0	0.0	5	14.0	0	0.0	0	0.0	35	100.0
Public pressure and customer awareness and pressure	32	91.0	0	0.0	0	0.0	0	0.0	3	9.0	35	100.0



Environmental and social responsibility	33	94.0	0	0.0	2	6.0	0	0.0	0	0.0	35	100.0
Economic benefits	28	80.0	5	14.0	0	0.0	0	0.0	2	6.0	35	100.0

*Source: Field Survey, 2023*

From Table 4.2, 25(71%) of the respondents strongly agreed whiles 10(29%) disagreed to the notion that government rules and legislation is a driver of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua. This indicates that a substantial majority of the participants believe that government regulations play a crucial role in motivating Joy Industries Limited to adopt green practices in their warehouse operations. Rehman and Shrivastava, (2021) claimed that regulatory pressure is one of the driving causes behind the development of green supply chains such as green warehouse management practices.

In a similar vein, majority of the respondents constituting 30(86%) strongly agreed to green image and competitive advantage while minority representing 5(14%) of the respondents disagreed. The findings indicate that companies invest more in green warehouse management practices, environmentally friendly products, and green marketing strategies to gain green image and competitive advantage. The findings are in line with Chin, Tat, & Sulaiman (2018), who asserted that an organization's reputation and image can both be improved by implementing green warehouse management

Furthermore, out of the total 35 sampled respondents, 32(91%) strongly agreed to the notion that public pressure and customer awareness and pressure influences the organization adopting green warehouse management practices while the majority constituting 3(9%) of the respondents

strongly disagreed. The findings suggest that a majority of the sampled respondents strongly believe that public pressure and customer awareness play a significant role in driving organizations to adopt green warehouse management practices. Consumer demand for eco-friendly products and services, according to Hajikhani, Wahat, and Idris (2021), is one of the major forces behind green efforts such as the adoption of green warehouse management practices.

Nevertheless, majority of the respondent constituting 33(94%) strongly agreed that environmental and social responsibility is a driver of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua while 2(6%) of the respondents were not sure about this same assertion. The findings indicate a strong consensus among the respondents that environmental and social responsibility plays a pivotal role in driving the implementation of green warehouse management practices at Joy Industries Limited. Bhool and Narwal, (2018) contended that the motivation for green warehouse management, which aims to assess and accept responsibility for the company's impact on the environment and its impact on social welfare, is social and environmental responsibility

Finally, out of the total 35 sampled respondents, 28(80%) strongly agreed that the driver of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua include economic benefits while 5(14%) agreed but minority representing 2(6%) of the respondents strongly disagreed. The findings indicate that a significant majority of the surveyed individuals perceive economic benefits as a strong driver for implementing green warehouse management practices at Joy Industries Limited in Koforidua. Green warehouse management can be fueled by the ability to reduce unit costs of manufactured goods or rendered services without compromising the intended use of the product or diminishing its quality (Bhool & Narwal 2018).

**4.5: The benefits of green warehouse management practices on operational performance of Joy Industries Limited, Koforidua.**

**Table 4.3: Benefits of Green Warehouse Management Practices**

Benefits of green warehouse management practices	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		Total	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
Enhances the performance of the supply chain	32	91.0	0	0.0	0	0.0	0	0.0	3	9.0	35	100.0
Minimizes the cost of packaging	28	80.0	4	11.0	3	9.0	0	0.0	0	0.0	35	100.0
Encourages waste reductions in the supply chain	30	86.0	5	14.0	0	0.0	0	0.0	0	0.0	35	100.0
Increases ability to meet consumer needs for products and services	33	94.0	0	0.0	0	0.0	2	6.0	0	0.0	35	100.0
Produces environmentally friendly goods	29	83.0	5	14.0	1	3.0	0	0.0	0	0.0	35	100.0

**Source: Field Survey, 2023**

Concerning the benefits of green warehouse management practices on operational performance of Joy Industries Limited, Koforidua, 32(91%) of the respondents strongly agreed that green warehouse practices have enhanced the performance of the supply chain whilst 3(9%) of the respondents strongly disagreed to this assertion. This level of agreement suggests that green warehouse management is seen as a valuable approach within Joy Industries Limited by enhancing the performance of the supply chain. Green warehouse practices, according to Rao and Holt (2018), not only benefit the environment but also improve the overall effectiveness and sustainability of the supply chain.

In similar vein, out of the total 35 sampled respondents, 28(80%) strongly agreed that green warehouse management practices has minimized the cost of packaging for goods. Again 4(11%) of the respondents agreed while 3(9%) were not sure about green warehouse management practices minimizing the cost of packaging for goods. The findings suggest that there is a positive perception among the majority of respondents that green warehouse management practices have resulted in cost savings when it comes to packaging for goods. The findings are in line with Zhu et al. (2018), who asserted that businesses utilize green warehouse management strategies to lower the cost of product packaging, lessen their environmental impact, and perhaps even improve their brand image by showing a dedication to sustainability.

Moreover, the evident shows that 30(86%) of the respondents strongly agreed whereas 5(14%) agreed to the notion that green warehouse management practices have encouraged waste reductions in the supply chain. This strong agreement is indicative of the belief that implementing green warehouse management practices has indeed had a positive impact on reducing waste in the supply chain. The findings are in line with Zhu et al., (2018) who

emphasized that green warehouse management practices provide a strong emphasis on waste control because it is connected to environmental sustainability

Furthermore, 33(94%) of the respondents strongly agreed whereas 2(6%) of the respondents disagreed to the notion that green warehouse management practices has increased ability to meet consumer needs for products and services. These findings suggest a positive perception of green warehouse management practices among the surveyed respondents, with the potential for such practices to contribute to meeting consumer needs effectively. The findings are in line with Klassen and McLaughlin, (2018) who affirmed that green warehouse management demonstrates its ability to meet consumer needs for products and services linked to environmental sustainability.

Finally, the results show that 29(83%) of the respondents strongly agreed, 5(14%) agreed whereas 1(3%) were not sure about the notion that green warehouse management practices has produced environmentally friendly goods. This strong agreement suggests that a substantial portion of the surveyed population believes that green warehouse management practices are effective in promoting eco-friendly product production. Dieste et al., 2019) asserted that companies implement green warehouse practices to minimize resource consumption, and contribute to the production of environmentally friendly goods throughout the supply chain.

#### **4.6: The challenges in implementation of green warehouse management practices at the Joy Industries Limited, Koforidua.**

**Table 4.4: challenges in implementation of green warehouse management practices**

Challenges in implementation of green warehouse management practices	Strongly Agree		Agree		Not Sure		Disagree		Strongly Disagree		Total	
	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)	(f)	(%)
High investment requirements in green warehouse management	0	0.0	27	77.0	0	0.0	0	0.0	8	23.0	35	100.0
Lack of customer support and encouragement	0	0.0	30	86.0	0	0.0	5	14.0	0	0.0	35	100.0
Insufficient expertise to manage green warehouse practices	0	0.0	23	66.0	7	20.0	5	14.0	0	0.0	35	100.0
Insufficient legal frameworks on green warehouse management	0	0.0	28	80.0	5	14.0	0	0.0	2	6.0	35	100.0
Lack of government support for green warehouse practices	0	0.0	32	91.0	0	0.0	3	9.0	0	0.0	35	100.0

**Source: Field Survey, 2023.**

Pertaining to the challenges in implementation of green warehouse management practices at the Joy Industries Limited, Koforidua, 27(77%) of the respondents agreed to high investment requirements in green warehouse management while 8(23%) of the respondents strongly disagreed to this assertion. This suggests that implementing environmentally friendly practices in warehouse management may involve substantial upfront costs, which can be a major challenge for Joy Industries Limited. The findings are in line with Gábriel, (2019) who asserted that

economic factors (high investment requirements and customer cost pressure) are the main barriers to green warehouse management

Also, 30(86%) of the respondents agreed that lack of customer support and encouragement is a challenge associated with green warehouse management practices whereas 5(14%) disagreed. The fact suggests that lack of customer support and encouragement is a commonly perceived issue in the context of green warehouse management. The findings are in line with Majumdar and Sinha, (2018), who indicated that green warehouse management practices have additional basic obstacles such as lack of customer support and encouragement.

Furthermore, it was discovered that the challenge associated with green warehouse management practices include insufficient expertise to manage green warehouse practices. The evidence shows that 23(66%) of the respondents agreed, 7(20%) were not sure whereas 5(14%) of the respondents disagreed. The fact suggests that a significant majority of those surveyed perceive a lack of expertise as a challenge. The findings are in support of Rozar et al., (2021), who affirmed that the challenge organizations face when implementing green warehouse management practices is a lack of expertise or knowledge in managing green warehouse initiatives.

Moreover, majority of the respondents constituting 28(80%) agreed that Insufficient legal frameworks on green warehouse management is a challenge associated with green warehouse management practices, 5(14%) were not sure whereas 2(6%) of the respondents strongly disagreed. These findings indicate that there is a consensus among the majority of respondents that insufficient legal frameworks are a challenge in the context of green warehouse management. According to Barve and Muduli (2019) implementing green warehouse management has several significant challenges, including insufficient legal frameworks

Lastly, 32(91%) of the respondents agreed to lack of government support for green warehouse practices while 3(9%) of the respondents disagreed. The findings indicate a strong consensus among respondents that government support for green warehouse practices is lacking. Rozar et al., (2021) asserted that lack of government support for green warehouse management practices are the main barriers to the implementation of green warehouse management

## **CHAPTER FIVE**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Introduction**

The four preceding chapters were dedicated to outlining and discussing the general introduction to the study, a review of contemporary and related studies, the research design and methodology as well as the data analysis and discussions. This final chapter focuses on presenting the summary of key findings from the study based on the stated research objectives, the main conclusion and the recommendations.



## **5.1 Summary of Major Findings**

The findings obtained from the study are summarized in this section. This is presented based on the study objectives. In respect of the study objectives, the study findings are summarized as follows:

### **5.1.1 The green warehouse management practices used to enhance organizational performance of Joy Industries Limited, Koforidua**

The results suggested that Joy Industries Limited has been successful in implementing several green warehouse practices such as promoting green packaging for its products, encouraging recycling programs in its warehouse and reusable containers and pallets for its products.

Additionally, the study discovered that the company has adopted paperless operations in its warehouses, endorsed green building design for its warehouse and used renewable energy sources in its warehouses

### **5.1.2 The drivers of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua**

The findings indicated that respondents strongly believe in the importance of government regulations, green image, public pressure, environmental and social responsibility, and economic benefits as drivers for implementing green warehouse management practices at Joy Industries Limited, Koforidua. These factors collectively influence the company's adoption of green practices in its warehouse operations.

### **5.1.3 The benefits of green warehouse management practices on operational performance of Joy Industries Limited, Koforidua**

The findings of the study revealed strong agreement among respondents regarding the benefits of green warehouse management practices at Joy Industries Limited, Koforidua. These benefits include enhanced supply chain performance, reduced packaging costs for goods, waste reduction in the supply chain, and an increased ability to meet consumer needs for products and services.

Additionally, a significant portion of respondents believe that green warehouse management practices contribute to the production of environmentally friendly goods.

### **5.1.4 The challenges in implementation of green warehouse management practices at the Joy Industries Limited, Koforidua.**

The findings established that Joy Industries Limited faces challenges related to high upfront investment, insufficient customer support, a lack of expertise, inadequate legal frameworks, and limited government support when implementing green warehouse management practices.

## **5.2 Conclusion of the Study**

The study's conclusions showed that Joy Industries Limited has made substantial progress in putting green warehouse practices into effect, demonstrating a strong commitment to sustainability. The company's warehouse operations have been effectively integrated with green packaging, recycling initiatives, reusable containers and pallets, paperless processes, green building design, and renewable energy sources. These practices fit the expanding global trend of environmental awareness and sustainability in the supply chain sector.

The study also emphasized a number of important drivers linked to Joy Industries Limited's green warehouse management practices. A comprehensive approach to sustainability may be seen in the respondents' strong support for government legislation, the company's green reputation, public pressure, environmental and social responsibility, and economic benefits as drivers of green warehouse management practices. This compatibility with a range of drivers suggests a thorough approach that accounts for both internal and external influences, assuring long-term success.

Additionally, the benefits that have been noted such as improved supply chain efficiency, lower packaging expenses, waste reduction, and the capacity to satisfy customer needs for sustainable products validate the value of green warehouse practices. Likewise the idea that eco-friendly warehouse management practices aid in the creation of environmentally friendly products strengthens their worth in terms of reputation and competitive positioning.

### **5.3 Recommendations of the Study**

As per the key findings with respect to the study objectives, the following recommendations are made by the study.

1. Joy Industries Limited, Koforidua should create a strategic strategy to allocate funds and investments toward green warehouse practices, taking into account long-term cost savings and environmental advantages to justify the initial expenditures.
2. In addition, to improve the capabilities of staff members involved in managing green warehouses, Joy Industries Limited, Koforidua should fund training initiatives. The success of sustainable efforts will be influenced by internal expertise-building.

3. Joy Industries Limited, Koforidua should work with partners and suppliers who share a commitment to sustainability. The supply chain's overall sustainability can be improved by fortifying ties with like-minded firms. Similar to this, the business should actively engage its clients in sustainability initiatives by soliciting their opinions. To encourage consumers to choose ecologically friendly goods and packaging, think about providing incentives.
4. Finally, Joy Industries Limited, Koforidua should develop a culture of continuous improvement by periodically reviewing and updating its green warehouse practices. To stay ahead of sustainability efforts, keep an eye on new trends and technologies.

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## **Appendix A: Questionnaire**

**Koforidua Technical University**

**Faculty of Business and Management Studies**

**Department of Procurement and Supply Science**

We are students from Koforidua Technical University undertaking a research study on the topic: *Assessing the effects of green warehouse management practices on organizational performance*, Case of Joy Industries Limited, Koforidua. Please note that this questionnaire is designed to solicit your response to the questions which is solely for academic purposes and such information shared shall be treated with absolute confidentiality.

Quansah Ewuramah Vera (B103210107)

Ernest Owusu Addoh (B103210104)

Thank you

### **SECTION A: BIO DATA** Please circle where necessary

1. Gender: 1) Male    2) Female

2. Age: 1) 21–30 years    2) 31 – 40 years    3) 41–50 years    4) Above 51 years

3. Highest Educational level: 1) Diploma    2) HND    3) 1<sup>st</sup> Degree    4) 2<sup>nd</sup> Degree

If any other (Please specify).....

4. How long have you worked with the institution? 1) Less than one year                      2) 1-5 years  
3) 6-10 years                      4) 11-15 years                      5) Over 15 years

5. Please provide the department you belong to.....

**SECTION B: The green warehouse management practices used to enhance organizational performance of Joy Industries Limited, Koforidua**

*Please circle or state where necessary*

6. Please circle an appropriate option to indicate the green warehouse management practices or options adopted to enhance organizational performance from **1 - Strongly Agree, 2 - Agree, 3 - Not Sure, 4 - Disagree, and 5 - Strongly Disagree**

<i>Which of the following options do you think the organization adopts for green warehouse management....</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
The company promotes green packaging for its products	1	2	3	4	5
The company uses renewable energy sources in its warehouses	1	2	3	4	5
The company encourage recycling programs in its warehouse	1	2	3	4	5
The company promotes reusable containers and pallets for its products	1	2	3	4	5
The company ensures paperless operations in its warehouses	1	2	3	4	5
The company endorses green building design for its warehouse	1	2	3	4	5

*Others, please specify* .....

.....

**SECTION C: The drivers of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua**

7. Please **circle** an appropriate option to indicate the drivers of green warehouse management implementation in the operations of Joy Industries Limited, Koforidua. From **1- Strongly Agree, 2- Agree, 3- Not Sure, 4- Disagree, and 5- Strongly Disagree**

<i><b>In this organization the drivers of green warehouse management are.....</b></i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Government rules and legislation	1	2	3	4	5
Green image and competitive advantage	1	2	3	4	5
Public pressure and customer awareness and pressure	1	2	3	4	5
Environmental and social responsibility	1	2	3	4	5
Economic benefits	1	2	3	4	5

*Others, please specify* .....

.....

.....



**SECTION D: The benefits of green warehouse management practices on operational performance of Joy Industries Limited, Koforidua.**

8. Please **circle** an appropriate option to indicate the benefits of green warehouse management practices on operational performance of Joy Industries Limited, Koforidua. From **1- Strongly Agree, 2 - Agree, 3 - Not Sure, 4 - Disagree, and 5 - Strongly Disagree**

<i><b>In this organization the benefits of green warehouse management practices on organizational performance are.....</b></i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Enhances the performance of the supply chain	1	2	3	4	5
Minimizes the cost of packaging	1	2	3	4	5
Encourages waste reductions in the supply chain	1	2	3	4	5
Increases ability to meet consumer needs for products and services	1	2	3	4	5
Produces environmentally friendly goods	1	2	3	4	5

***Others, please specify*** .....

.....

.....

**SECTION E: The challenges in implementation of green warehouse management practices at the Joy Industries Limited, Koforidua.**

9. Please **circle** an appropriate option to indicate the challenges in implementation of green warehouse management practices. From **1- Strongly Agree, 2 - Agree, 3 - Not Sure, 4 - Disagree, and 5 - Strongly Disagree**

<i><b>In this organization, the challenges in implementation of green warehouse management practices are.....</b></i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
High investment requirements in green warehouse management	1	2	3	4	5
Lack of customer support and encouragement	1	2	3	4	5
Insufficient expertise to manage green warehouse practices	1	2	3	4	5
Insufficient legal frameworks on green warehouse management	1	2	3	4	5
Lack of government support for green warehouse practices	1	2	3	4	5

***Others, please specify .....***

.....

.....

**Thank you**