

**EFFECTS OF MATERIAL HANDLING ON ORGANISATIONAL
PROFITABILITY: A CASE STUDY OF BIDCO OIL AFRICA LTD THIKA.**

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**A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF MANAGEMENT AND
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OF DIPLOMA OF MANAGEMENT AND LEADERSHIP OF THE MANAGEMENT
UNIVERSITY OF AFRICA.**

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DECLARATION

This research project is my original work and has not been submitted for examination of diploma degree in any other university

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This research project has been presented for examination with my approval as the University Supervisor

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DEDICATION

I humbly dedicate my project to my parent Rose Nduta for the financial support and constant encouragement and also dedicate to my school mates who have helped me in my Diploma program, God bless them abundantly.

ACKNOWLEDGEMENT

First, I thank God for his continuous almighty help throughout my academic life and for the great health during this covid-19 pandemic, to my loving parents who have sacrificed a lot and not forgetting my supervisor for the priceless advice. I acknowledge the wonderful work of my supervisor Ms. Dorothy Lagat for her concrete critic which enabled me to refine this research project. I also appreciate all my friends who made huge contributions to my success particularly Maxwells and Dennis.

ABSTRACT

Material handling plays an important role in efficiency. The main objective is to investigate effects of material handling guided by following objective; reduced losses, time saving, reduced handling cost and reduced labour in relative to organizational profitability. The study had material handling concept i.e JIT theory and EOQ theory. The study adopted stratified random sampling technique to collect data of whole organization. The targeted population was 30 respondents in the organization. Primary data was collected from sample population using open and close questionnaires. Based on these findings it can be concluded material handling has a positive impact to organization profitability. The findings suggested reduced loss, time saving, reduced handling cost and reduced labour cost are significant areas management should give a great attention to.

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ACRONYMS AND ABBREVIATIONS

BIDCO: Business and industrial development company

EOQ: Economic Order quantity

JIT: Just in Time

TIC: Total incremental cost

TOC: Total ordering cost

THC: Total handling cost

OPERATIONAL DEFINITIONS OF TERMS

Material handling: It is the integrated management approach to planning, conversion flow of distribution of products materials from raw materials to finished product at economical cost. Material handling equipment selection is an important decision because it affects both the cost and efficiency of the handling system.

Profitability : It is the capacity of making gains and benefits for the organization. Profitability is the primary goal of all commercial endeavors. As a result, measuring current and past profitability and projecting future profitability is very critical.

Production : The process of transforming raw materials and half-finished goods to complete goods. The production process and output are directly related to the productive utilization of the original inputs (or factors of production). Land, labor, and capital are regarded as the three fundamental production factors and are referred to as primary producer goods or services. These primary inputs are not significantly altered during the output process, and they do not become a complete component of the product.

Processing : It is a process of taking something through a set of procedures which results to a product.

Stock taking : It is the taking record of inventory of materials in the organization and those to be received. Stock taking is a necessary function of a regular inventory system, and it may also be required as part of an annual audit of a company. In summary, stock taking yields a summary-level document containing a list of the quantities on hand for each inventory item at a given point in time.

Storage : It is the act of storing goods in a good place which will be used later. Some storage methods are associated with specific methods of handling materials.

As a result, providing material handling is another critical goal of the store function. Storage procedures and techniques also include store layout and location systems.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

This chapter will concentrate with the general introduction of the study which will include background of the study, statement of the problem, objectives of the study, the research questions, justification of the study and scope of the study.

1.1 Background of the study

Material handling is the movement of materials within the workplace, from raw materials to finished products and product storage. Material handling, as defined by (Harum, 2007) is the concept of an integrated management approach to planning the flow movement of product material, from the initial raw material state to the finished state. This means that material management entails duties such as inventory control, production planning, and control. To facilitate proper control of supply chain activities in an organization, a good material handling system should be implemented. (Gathago, 2016) Describes the effects of material handling on manufacturing firms when material handling is all about ensuring that all inputs are available to the firm and also that production is not halted, as well as ensuring that operation expenses are kept to a minimum without affecting organization operation (Douglas, 1998) Defines material handling as "the aggregate of those ordinary courses of business that are in the process of producing goods and services for sale." Today, materials are the center point of any business; no business can function without them; they must be made available at the right time, right quality, right quantity, right place, and right price to ensure the company's profitability.

1.2 Statement of the problem

Material handling is a critical component of most manufacturing and distribution systems. It has an impact on organizational performance rather than operational efficiency. The material

handling department's function is critical, especially given the difficulties associated with the purchase of spare equipment, which is usually outsourced. The department has frequently been accused of frequent breakdown and shutdown due to its inability to provide the necessary spares when needed. There are enormous varieties of materials in storehouses of all kinds, and they are increasing on a regular basis due to technological advancements due to innovation and renovations. This has resulted in the stores playing a more careful and important role than expected. Many materials have been damaged in stores, resulting in significant losses as a result of poor store designs, location systems, storage procedures, and poor material handling techniques, lowering a company's profitability. Many materials have lost their durability as a result of poor storage facilities, while others that should be kept in cold places are dissipated to the sun, deteriorating as a result of poor storage procedures and a lack of qualified, experienced, and adequate staff to manage material storage. These issues arise as a result of poor storage procedures, poor material handling techniques, and financial constraints by management that prevent the purchase of adequate material handling equipment, the construction of a quality and spacious storage facility (warehouse), and the hiring of qualified personnel to operate that equipment. Oil manufacturing in Kiambu County has improved material handling efficiency through automation, staff training, and the implementation of an information system.

1.3 Purpose of the study

The study's goal is to ensure that materials are handled correctly at Bidco oil Africa ltd. Material handling is also a financial issue because in order for it to work perfectly, one must incur labor costs and handling costs, where labor costs are paid to employees who deal with goods and handling costs are for maintaining the machines that handle the materials. Lack of skills and technical know-how of employees to handle materials within the organization are major factors

influencing the material handling problem. The contribution to the research is to be able to provide ideas to organizations on how to train employees on proper material handling.

1.4 Objectives of the study

1.4.1 General objectives

To investigate on the effect of material handling on organizational profitability.

1.4.2 Specific objectives

- i. To carry out an assessment and see how material handling helps in profitability of the organization.
- ii. To establish the ways in which material handling saves on time for organizational process to profitability.
- iii. To analyse ways in which labour cost when reduced increase the organization profitability

1.5 Research questions

- i. How material handling helps in reduction of losses within the organization?
- ii. How labour cost when reduced may increase organizational profitability?
- iii. What ways does material handling saves time in an organization process to profitability?

1.6 Scope of the study

The study's scope is limited to material handling, which includes stocktaking, purchasing goods, receiving goods, inspecting goods, and storing goods.

The study focuses on Bidco Africa ltd and how material handling affects the organization's profitability. It entails gathering secondary information such as books, organizational journals,

and press releases. The target population is approximately 40-45 employees, including 10-15 casual workers in the organization. The research will be conducted from 8 am to 5 pm because these are working hours and will be completed over a period of 45 days. The research's dependent variable is material handling, while the independent variables are damages, losses, and time waste. The case study is for Bidco Africa ltd, which is located in Thika, and the organization was chosen because it is easily accessible and well-known.

1.7 Significance of the study

The study's significance is to raise awareness, rather than provide an idea, to the organization about how they can effectively manage their material handling, as material handling accounts for a large portion of total production costs. Material handling is important to the organization because it reduces product damage and saves time, resulting in lower losses. The study will assist the organization in developing new methods of material handling in the manufacturing department as well as in management organizations where stock is taken. The study's findings should assist students and organizations in developing material handling strategies, as well as upcoming researchers in determining where they can gather information.

1.8 Chapter Summary

The study had some limitations, for example, because it was conducted during a political period, some questions were viewed with suspicion and distrust. However, the researcher assured the respondents that the work would be treated with strict confidentiality in order to dismiss those claims as inconsistent. The chapter describes the study's background with a focus on the study variables, the statement problems are described in detail, and research gaps are identified. In addition, the section includes research study objectives, research questions, significance, study scope, and a chapter summary. This chapter laid the groundwork for the guiding concept that would be used to assess the literature.

CHAPTER TWO

THE LITERATURE REVIEW

2.0 Introduction

This chapter will present a review of the literature relevant to the effect of material handling on profitability if the organization examines the theories informing the study. The chapter includes a theoretical review, empirical literature review, conceptual framework, and an overview of the literature review.

2.1 Theoretical Literature Review

The theoretical literature review aids in identifying what theories already exist, their connections, the depth to which they have been explored, and the creation of new testable hypotheses. The objective of this study was to determine the effect of material handling on organizational profitability.

2.1.1 Material Handling Basic Concept

There is no universally accepted definition of material handling, but one definition states that the primary function is to move materials. In another narration; According to Lornum (2007), material handling is a subset of material management that is concerned with the safety of materials in transit, as well as the consistency of delivery and the flow of materials. According to (Assaurch, 2008), material handling is the activity of moving goods from one location to another, which includes picking, lifting, and inserting material into the manufacturing process, such as unloading activities and storage issuing. Material handling tasks that benefit the system in a company include conducting investigations and analyzing efficient material handling activities, which reduce costs, increase capacity, and save time.

2.1.1JustinTimeTheory

Became popular in the Japanese shipbuilding and automotive industries, and it refers to a set of practices and tools aimed at satisfying the market by producing the products needed, when they are needed, and in the required quantity and quality (Singh and Garg, 2011). Vrat provided a simple definition (2014). In addition; it is an approach for enhancing organisation's financial performance by reducing excess inventory and its associated costs (Spurlin, 2015). It is founded on three fundamental principles: waste elimination, employee involvement, and continuous improvement. JIT is about having the right items, in the right quantity, and in the right place. If properly implemented, it has the potential to improve production quality while increasing productivity. Waste and unnecessary costs must be reduced in JIT. According to (Griinwald & Zortuin, 1992)"to achieve this production as far as possible, need to strive toward: zero stock, rejection rate, set-up time, machine breakdown, transport, and waiting time." JIT implementation can provide numerous benefits to a business by increasing output and return on investment through cost reductions, inventory reductions, and quality improvements (Singh & Garg, 2011)These benefits, as demonstrated by numerous case studies, explain why JIT has gained widespread acceptance in industry. Its efficiency is based on having the bare minimum of material on hand for immediate use, and such holding costs are significantly reduced. Today, inventory accounts for 40 to 60 percent of a company's assets, which is typically the largest asset on the balance sheet (Freeland & Landel, 2008). According to (Zhang, 2014), inventory levels in supply chain management not only affect the overall cost of a single enterprise but also limit the

performance of the entire supply chain. As a result, by reducing inventory levels to the lowest possible level, the company can save more assets and gain more liquidity to expand its business. According to (Shahabuddin, 2011), companies that implemented supply chain processes, particularly standard inventory control methods, were more profitable than those that did not. Keeping inventories low is currently a common practice among companies in both the manufacturing and retail sectors (Geismar et al., 2011). This practice has both positive and negative effects on costs and profits. On the one hand, it can reduce storage and operational costs, resulting in more available cash flow, while also minimizing inventory depreciation. However, it can be costly due to increases in shipping costs, as well as other logistical and organizational costs.

2.1.3 The Theory of Economic Order Quantity

The theory was advanced by (Harris, 1913). It refers to an inventory level that can maximize both inventory holding and ordering costs. The model was developed under the assumption that at any point in time, demand equals the annual total quantity ordered by the firm (Stefanovic, 2010). Ordering frequency is usually reduced by ordering a larger quantity, which reduces ordering cost but increases storage and requires more storage space. It regulates the purchase and storage of inventory in order to ensure an even production flow while also limiting excess inventory investments. The goal of determining the EOQ is to minimize the Total Incremental Cost (TIC) above and beyond the cost of purchasing by taking into account two major units of total costs: Total Ordering Cost and Total Handling Cost.

2.2 Empirical Literature Review

An empirical literature review explains previous studies done by other scholars and has a connection to the study variables which are reduced losses, time savings, reduced handling costs, reduced labor costs, and the variable of organizational profitability. The study empirically investigates the relationship between material handling and organizational profitability after proper management. Inventory handling was found to be positively correlated with firm profit using regression, a correlation technique. (Nadaka & Namusonge, 2013). The role of material handling in Kenya Manufacturing's competitive advantage was investigated. The study employed a descriptive research design, with data collected via self-administered questionnaires. According to the study's findings, material handling, information technology, inventory control systems, and inventory lead times are critical factors in achieving a competitive advantage for Kenya Manufacturing companies.

2.3 Conceptual Framework

The conceptual framework depicts the understudied commonality that exists between the independent variables of reduced losses, time savings, reduced handling costs, reduced labor costs, and the dependent variable of organizational profitability.

Independent Variables

Reduced losses
Time saving
Reduced handling cost
Reduced labor cost

Dependent Variable

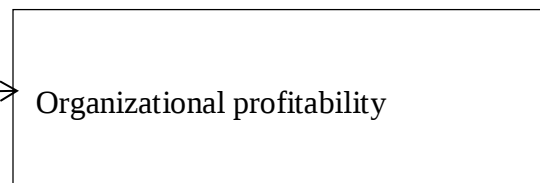


Fig 2: the conceptualized framework

2.3.1 Reduced losses

A material handling system designed for efficient product movement reduces transportation waste. Use computer stimulation on the plant layout to determine which configuration is most effective for optimum product movement. Reduced material waste leads to increased organizational profits because the organization will not have to incur additional costs to purchase materials that will be used in place of the wasted materials. Instead of installing a material handling system for a naturally flawed process, evaluate it using process failure models and effect analysis to identify failure and corrective actions. The Ordering Cost refers to the cost of placing orders for the product, taking into account order communication, allowances for purchase officers, order printing and stationery, inspection costs, receiving the product, and transport costs, among other things. Notably, these costs remain constant and unchanged throughout the period, regardless of the number of orders placed. The ordering cost per order is constant, the relationship between the quantity ordered and the number of orders to be placed is negative; that is, the higher the quantity ordered (Q) per order, the lower the number of orders to be placed; and the lower the quantity ordered (Q) per order, the higher the number of orders to be ordered.

2.3.2 Time Saving

Mechanized or automated material handling systems use less human energy and are faster in operation, saving time that could be spent on other tasks. The system allows for more work to be completed in a single day, saving time and increasing profits.

2.3.3 Reduced Handling Cost

Material handling costs include the use of semi-automated handling equipment to operate on goods in the organization. A system that is automated can be used for multiple activities such as packaging and distribution at the same time, inspection and distribution, and thus reduces handling costs. The annual requirement of a product is constant and known in its units of measure, and this is known as the product's annual demand (D). It is critical for a business to determine the annual demand for a certain item using various forecasting techniques, for which the business needs to know the EOQ. The total purchasing cost is irrelevant in determining the EOQ because demand generates the primary purchasing cost of the item.

2.3.4 Reduced Labour Cost

Because material handling necessitates a large number of employees to perform operations such as inspection, stocktaking, packaging, and material preservation, semi-automated systems employ fewer workers to operate equipment that would otherwise necessitate a large number of people, lowering labor costs. This cost refers to the cost of handling and maintaining product inventory in the workplace, taking into account warehousing costs, shrinkage loss, evaporation, deterioration, and spoilage costs, insurance, warehouse rent, obsolescence, and other warehouse-related overhead costs. Because these costs are constant in order to maintain the product's total demand (annual requirement), the handling cost per unit remains constant. As a result, total handling cost has a positive link with the number of products handled in the workplace, i.e., the higher the number of products (Q) in store, the higher the total handling cost (THC); and the lower the number of products in store, the lower the total handling cost (THC).

2.4 Operationalization of Variables

An operational definition specifies how study variables are measured precisely, and thus the objective of operationalizing or operationally defining each factor is to make each other measurable.

2.5 Chapter Summary

This chapter thoroughly reviewed the literature on material handling in order to identify the specific activities covered by the research study. Various theories that have been developed to specify the activities involved in the categories have been used. A conceptual framework has emerged from these theories. The study also conducted an empirical review in which it analyzed previous studies in material handling activities, providing sufficient information for the development of an appropriate research.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.0 Introduction

This chapter is primarily concerned with the study's design and methodology. Chapter three includes the sample size, research design, target population, sampling design, data collection instruments and procedures, pilot study, validity, reliability test, data analysis and presentation techniques, ethical considerations, and chapter summary.

3.1 The Research Design

The research design was a detailed outline of how a study was carried out, including a plot, a roadmap, and a visualization of the proposed analysis strategy to answer the research questions under consideration; it is the heart of any work (Kothari, 2004). A case study descriptive research design was used to collect both qualitative and quantitative data (Mugenda & Mugenda, 2003). The study will employ a descriptive survey, which entails asking similar set of questions to a large number of people via email, phone, or in person. This design provides a precise picture of events and attempts to explain perceptions and behavior based on data collected at a specific time. When using a descriptive survey, one must be critical of the questions because the descriptive results can vary greatly depending on how the questions are worded. This study will primarily employ a qualitative and quantitative approach to the study objectives, which will be implemented through survey design. The use of multiple data sets can confirm the research problem more than a single approach. Questionnaires necessitate respondents who can articulate their thoughts clearly and, in some cases, write them down. Because the targeted respondent is assumed to have a basic level of education, the descriptive

design will be deemed most appropriate for analyzing the effects of material handling on the profitability of Bidco Africa Limited, Thika, Kenya.

3.2 Targeted Population

The target population shows the sum of the outcomes of the population under study. The population is a complete set of individuals' cases or objectives with observable characteristics and the target population to which the research wants to generalize the chapter discusses the data analysis. The study's target populations will be 30 employees, including managers, warehouse storekeepers, and transport department staff, because they will handle materials in their operations.

Table 1 Target Population

Population	Number of employees
Manager or Supervisors	5
Warehouse storekeepers	20
Transport Department	5
Total Number	30

3.3 Sample and sampling technique

Conducting research on a group of people, it is rare to be able to collect data from every member of that group; instead, you choose a sample. The sample is the group of people who will actually take part in the study. To draw valid conclusions from your findings, you must carefully consider how you will select a sample that is representative of the entire group. The stratified sample selection technique will be used in the research, which is a probability research technique that divides the target population into homogeneous groups, with each group containing subjects with similar characteristics. According to, a descriptive study requires a relatively small sample size (Mugenda & Mugenda, 2003). The sample size determines the research accuracy costs, as well as the duration and research tools used. The sample size for the study will be 50% of the targeted population, or 15.

3.4 Data Collection Instruments

Questionnaires will be the preferred instruments because they are a quick way to collect data from a sample size, attract more honest responses, and are less expensive than other data collection instruments. This research study made use of both the primary and the secondary data. In the study, the primary data collection method was questionnaires. Primarily, closed and open-ended questionnaires were used to collect primary data. (Kothari, 2012) It was stated that questionnaires were preferred because they could be administered by the researcher or any number of people while having little effect on reliability and validity. Because the questionnaire information was unbiased and under the researcher's control, perfectly valid data were collected (Bhattacharjee, 2012). Questionnaires were used to provide the necessary data or information was up to date and relevant to the requirements of the study as well as convenient to the researcher in terms of time and cost.

3.5 Pilot study

The primary goal of the pilot was to test the feasibility of a method that would eventually be used in much larger-scale academic research. A pilot study is an investigation on a small scale of techniques and actions that will be used on a larger scale in the future (Yin, 2003). A pilot study was conducted in the commercial department, according to the pilot study (Mille & Saldana, 2014). (McKim, 2017) The result of a pilot study helps the researcher identify problems in the main research process. It also assists the researcher in identifying and refining the study query, outline the techniques better for pursuing it, and approximate the amount of time in days and resources required to complete the research process.

3.5.1 Validity

(Orodho, 2006) validity is described as the extent to which a test measures what it was intended to measure. The validity test assists the project researcher to be certain that the data collecting apparatus that was used measure what they was intended to measure and this was done in regular manner. In the study, content validity was used to determine whether the instrument measures appropriately what it was meant to measure. Content validity is concerning the suitability of use of some specific measuring apparatus in a given evaluation conditions through the process of checking of that instrument by the experts. In the study, a group of academic experts (supervisors and statisticians) were used to give their opinion regarding the instrument to be used and whether it would measure what it was meant to measure.

3.5.2 Reliability test

According to, a test is primarily reliable if its results are consistent within and across time (Saunders & Lewis, 2009). It refers to the consistency of measurement or the consistency of measurement across a range of environments in which essentially the same results should be obtained. The reliability test assists the researcher in ensuring that consistent results are obtained. The demonstrated method was also time and cost effective because it allowed for the creation of two tests from a single test, removing the need for multiple departments. When conducting quantitative research, you must consider the dependability and validity of your research methods and measurement instruments. The consistency with which a method measures something is indicated by its reliability. The split-half formula was preferred because it was a simple and easy to perform method. The method was also time and cost effective because it made it possible to create two tests using a single test eliminating the need for multiple administrations.

3.6 Information collection instruments

Primary and secondary data were used in the study. Before beginning the data collection process, the researcher ensured that all questionnaires were ready. The administration procedure was dropped and collected after 10 days, and these included both closed and open-ended draft questionnaires.

3.7 Data analysis and presentation techniques

The responses generated by the administered questionnaires must be edited and checked for completeness and consistency before being coded and entered into spreadsheet software. Using Microsoft Excel software, the data was analyzed quantitatively and qualitatively. The quantitative data gathered was analyzed using descriptive statistics and presented in tables, charts, and prose. The qualitative data from open-ended questions was analyzed by organizing the data into subtopics or themes based on the research objectives and word descriptions.

3.8 Ethical considerations

In research, ethical considerations are a set of principles that guide your research designs and practices. Mostly, when collecting data from people, scientists and researchers must always follow a set of rules. Understanding the real-life phenomena, studying effective treatments, investigating behaviors, and improving people's lives are all common goals of human research. What you choose to research and how you conduct that research are both important ethical considerations. The researcher explained everything to the respondents before giving them any study requirements. Prior to administering the data collection instruments, the researcher exercised extreme caution, and the respondents were informed of the study's purpose and objectives.

3.8.1 Voluntary participation

The researcher took great care during the study to ensure that no respondent was bribed or coerced in any way into providing the necessary information for the research study in the specified area of the study. The respondents willingly provided the requested information. Moral principals were put into great consideration when carrying out the study and the researcher ensured that no respondent was coerced in any way into providing the required information for the study.

3.8.2 Confidentiality

This is a situation in which the study researcher knows the identity of a research subject but takes precautions to keep that identity hidden from others doing the research. Most human subjects' research necessitates the collection of a signed consent agreement from participants, as well as the collection of other personally identifiable data, so researchers are aware of their subjects' identities. Maintaining confidentiality is a critical measure in such cases to ensure the protection of private information. In terms of company processes, the researcher was disciplined, customer-focused, and respected company leaders. The information provided by participants is kept private. To protect the company's confidential matters, the researcher has observed the integrity of the important information obtained. Researchers use a variety of techniques to conceal their subjects' identities. First and foremost, they protect their records by using password-protected files, encryption when sending information over the internet, and even old-fashioned locked

doors and drawers. They frequently fail to record data in a way that connects subject responses to identifying information.

Because subjects may not be identified solely by names, but by other identifiers or combinations of information about subjects, researchers will frequently only report aggregate findings to the public, rather than individual-level data.

3.8.3 Privacy

Respondents' rights and privacy were respected, and the researcher made certain that no participant could be identified based on the information they provided in the questionnaires. One of the requirements for informed consent is that participants' privacy be respected. Privacy refers, to "persons and their interest in controlling others' access to them," and no respondent should ever be forced to reveal data to the researcher that the participant does not wish to expose. Safeguarding this information is a critical component of the researcher-participant trust and respect relationship.

3.8.4 Anonymity

The respondents were given instructions of not indicating or writing their identities or any other information that could be used to identify them on the questionnaire; otherwise, they would have to leave it anonymous. A condition in which researchers do not know the identity of individual subjects. Subject anonymity is less common in human subjects' research because most population subject's research requires signed documentation of consent. In cases where the collection of that document is the only identifying information linking the subject to the project, federal law allows to waive the requirement for signed consent documents. Such documentation is frequently waived for projects like online surveys that pose only minor risk to subjects.

3.8.5 Permit

The appropriate authorities, including the Management University of Africa, the company's administration, and the targeted individual respondents, approved the research under study. The data from the study was only used for scholarly purposes and was never used for anything else.

3.9 Chapter summary

In summary, the chapter discussed the study's methodological research, specifically the design, population considered, sampling techniques, data collection tools, data collection procedures,

questionnaire pretesting, analysis of data and presentation techniques, ethical considerations, and chapter summary.

CHAPTER FOUR

THE RESEARCH FINDINGS AND DISCUSSION

4.0 Introduction

As stated in the previous chapter, this chapter demonstrates the analysis, presentation, and interpretation of findings derived from primary quantitative and qualitative data collected from selected company workforce. It includes the response rate, general demographic information, data analysis, conclusion, recommendation, and further study suggestions.

4.1 Presentation of the research findings

4.1.1 Response rate analysis

The response rate consisted of thirty respondents but only ten of them facilitated in gathering data.

Table 2: Table Showing Response Rate

Status	Respondents	Percentage
Response	10	33.33%
Non-Response	20	66.67%
Total	30	100%

Source (Author; Year 2022)

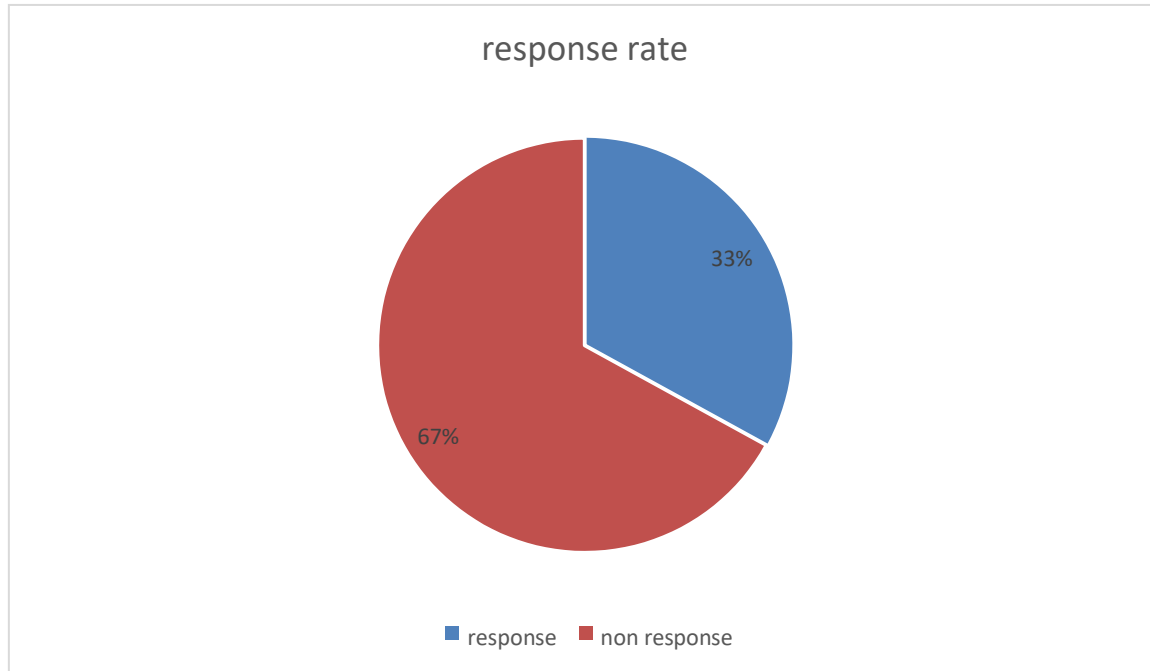


Figure 1: Chart showing the response rate

The diagram shows the number of individuals who responded and who did not, where the response rate is represented by 33% and the non response rate is represented by 67%

4.1.2 General Demographic Data

4.1.3 Table 2: Table showing respondents'

gender

Gender	Frequency	Percentage
Male	6	60%
Female	4	40%
Total	10	100%

Source (Author; Year 2022)

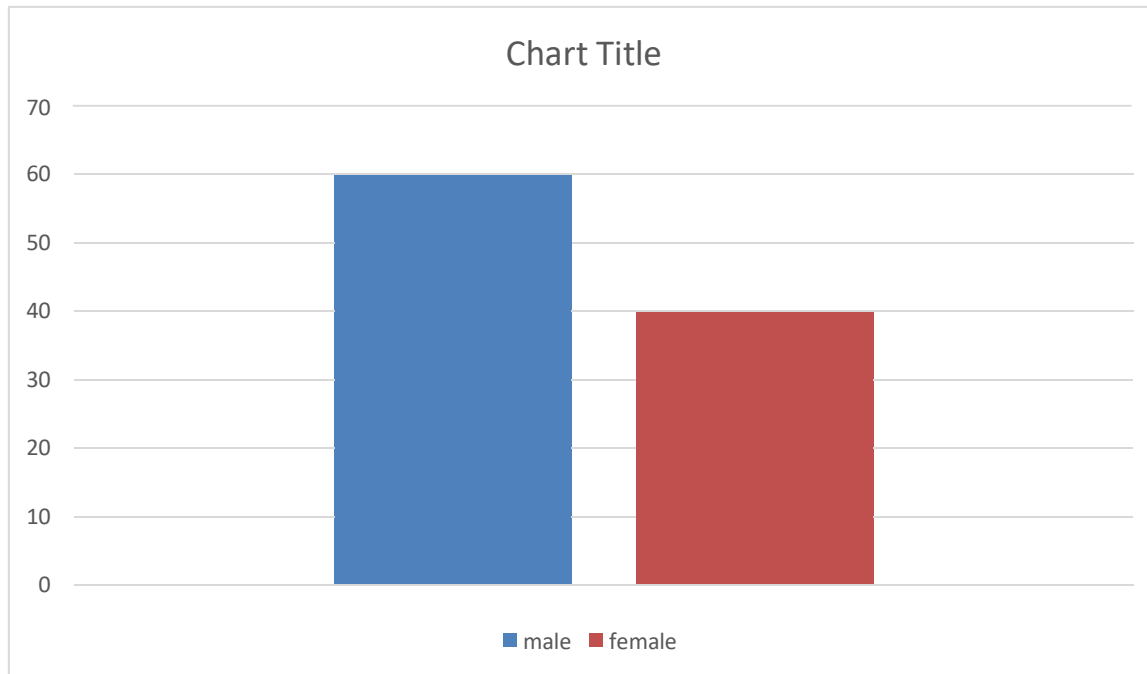


Figure.2: Chart showing the respondents' gender

Figure 4.2 bar graph showing distribution of the respondents according to gender. The above diagram represent the gender of the respondents and their percentage where number of male respondents was 6 representing 60% while female respondent was 4 representing the 40%

4.1.4 Information on age of respondents'

Table 3: Table showing age of respondents'

Age	Frequency	Percentage
Below 25 years	1	10%
26-30 years	3	30%
31-35 years	2	20%
36-40 years	2	20%
41 years and above	2	20%
Total	10	100%

Source (Author; Year 2022)

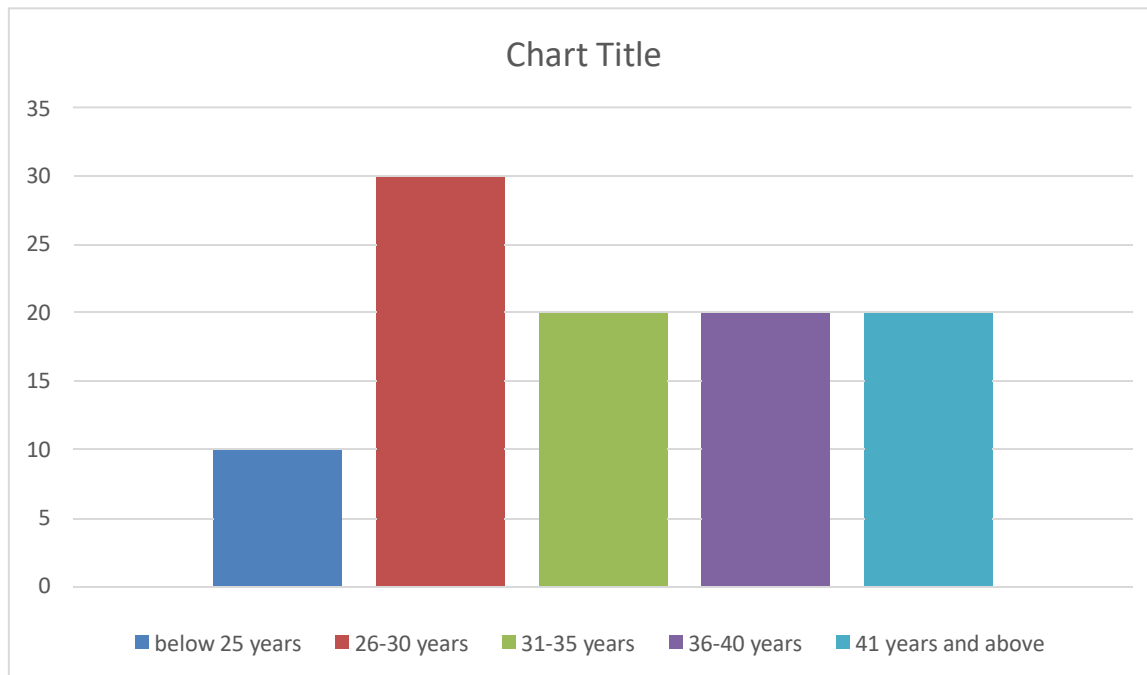


Figure 3: Chart showing the age of respondents'

Showing distribution of the respondents according to their age. The above diagram represents the age of the respondents where the age below 25 years was 1 employee representing 10%, 26-30 years were 3 employees representing 30%, 31-35 years were 2 employees representing 20%, 36-40 years were 2 employees representing 20% and those 41 years and above were 2 employees representing 20%

4.1.5: Information on Marital status of respondents'

Table 4: Table showing marital status of respondents

Marital Status	Frequency	Percentage
Single	4	40%
Married	6	60%
Total	10	100%

Source (Author; Year 2022)

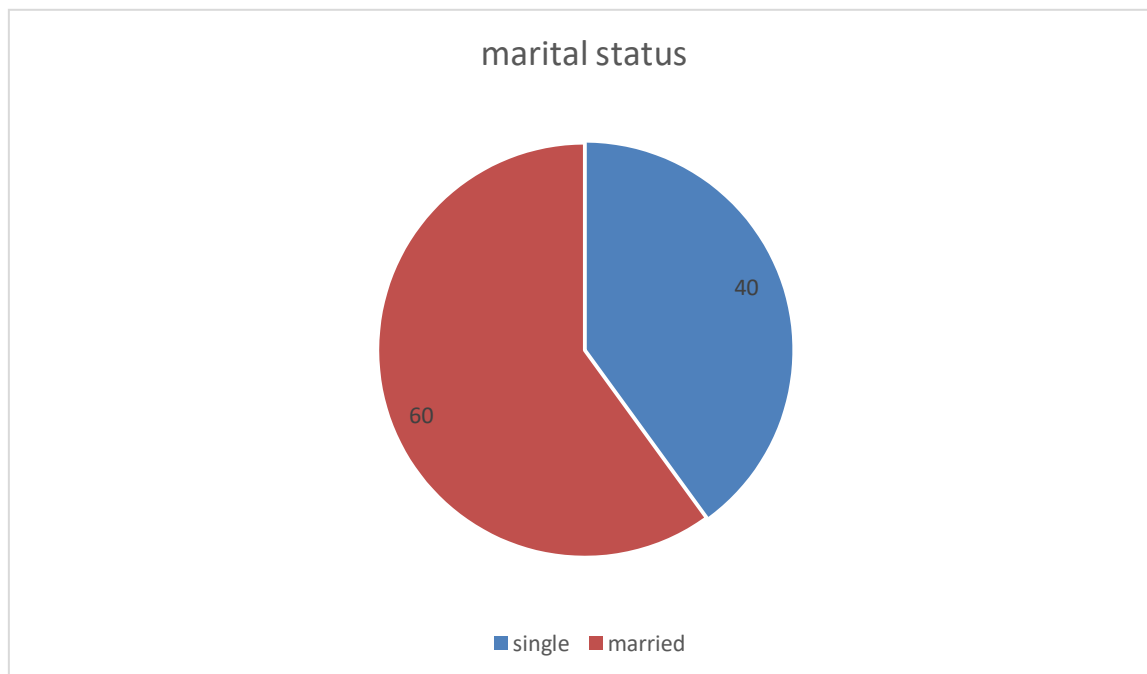


Figure 4 Pie chart showing marital status of the respondents

The diagram below represents marital status of the respondents and their percentage where 6 were married representing 60% and 4 were single representing 40%

4.1.6 Education level of respondents'

Table 5 Table showing distribution of the respondents; the level of education

Level of Education	Frequency	Percentage
Postgraduate	2	20
Undergraduate	3	30
Diploma	2	20
Certificate	1	10
O level	2	20
Total	10	100

Source (Author; Year 2022)

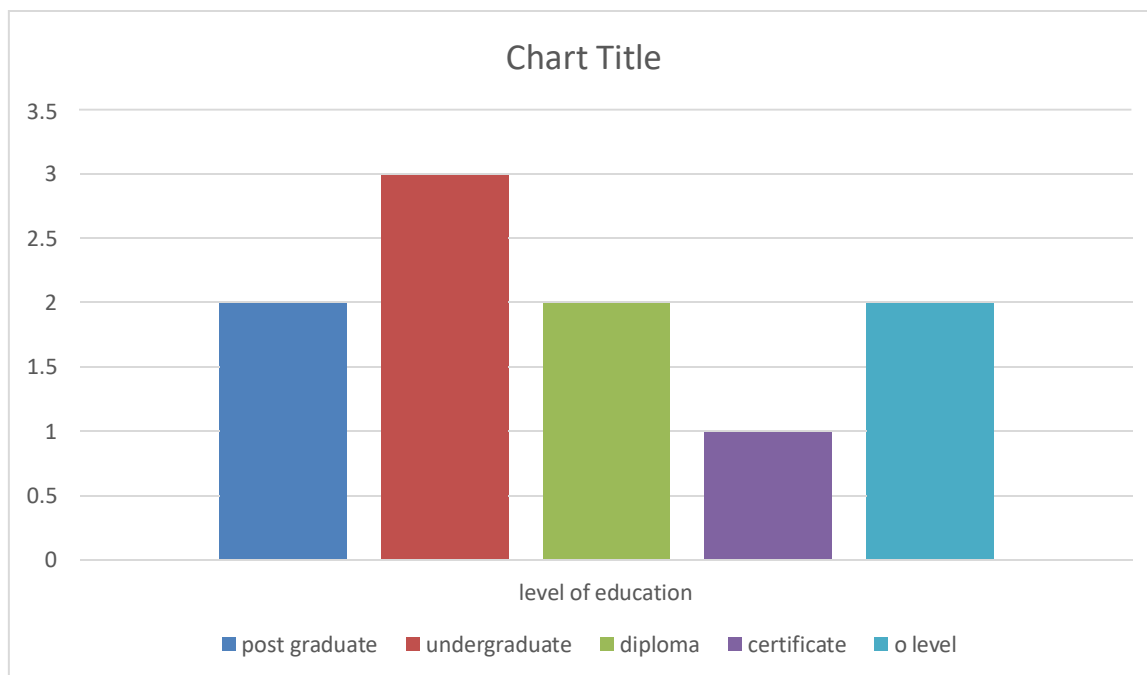


Figure 5: Figure showing the level of education

Where 2 representing 20% were postgraduate, 3 representing 30% were undergraduate, 2 representing 20% were diploma, 1 representing 10% was certificate and 2 representing 20% were O level.

4.1.7 Religion backgrounds of the respondents'

Table 6 showing the religion of the respondents

Religion	Frequency	Percentage
Christian	7	70%
Muslim	3	30%
Total	10	100%

Source (Author; Year 2022)

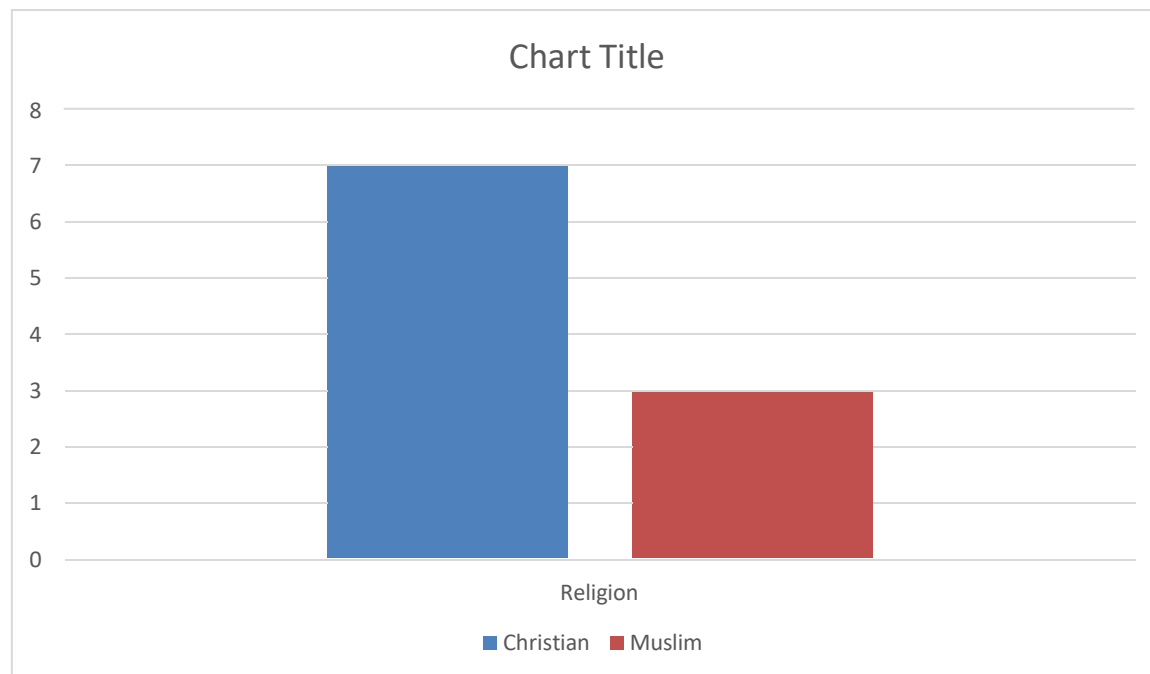


Figure 6: Bar graph showing distribution of respondents according to religion

The above diagram rep the religion of the respondents and percentage where Christians were & representing 70% and Muslims were 3 representing 30%

4.1.8 Reduced Losses

Data was collected on reduced losses.

Table 7: showing distribution of respondents on whether reduced losses affect organizational profitability

Status	Frequency	Percentage
Yes	10	100%
No	0	0
Total	10	100%

Source (Author; Year 2022)

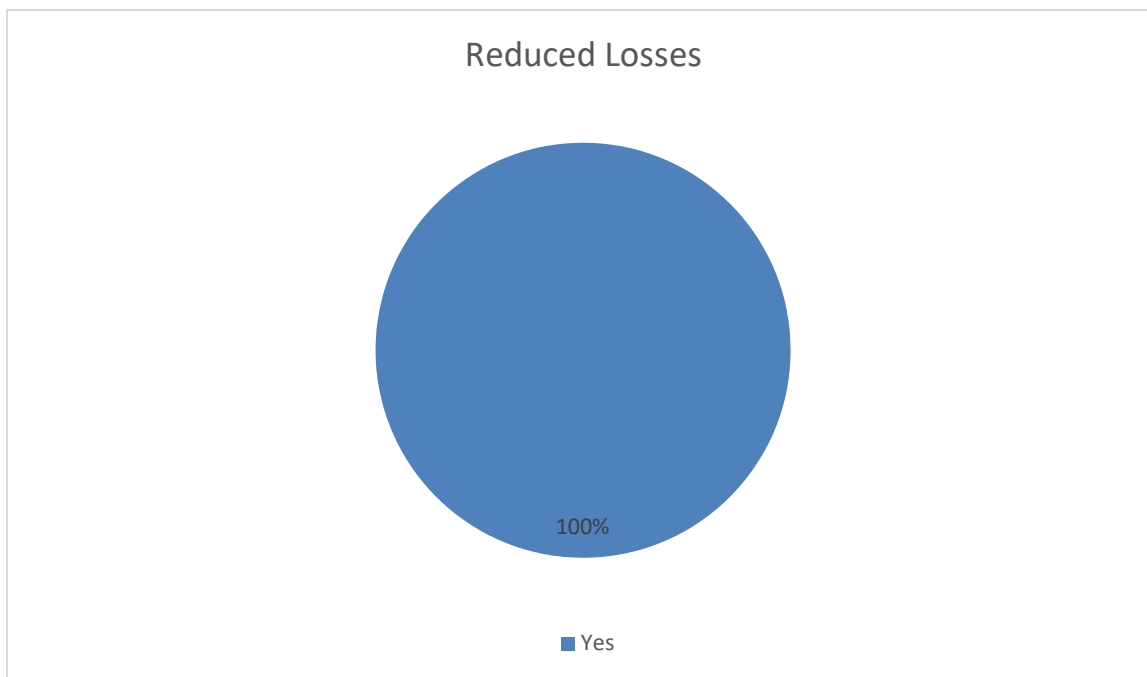


Figure 7 pie chart showing distribution of level of respondents on whether reduced losses affect organizational profitability

The above diagram represents the data of the respondents and percentage on whether reduced losses affect organizational profitability where all the 10 respondents representing 100% indicated yes.

Table 8 Showing the relationship between reduced losses and organizational profitability

Rate	Frequency	Percentage
Very strong	3	30%
Strong	5	50%
Moderate	2	20%
Total	10	100%

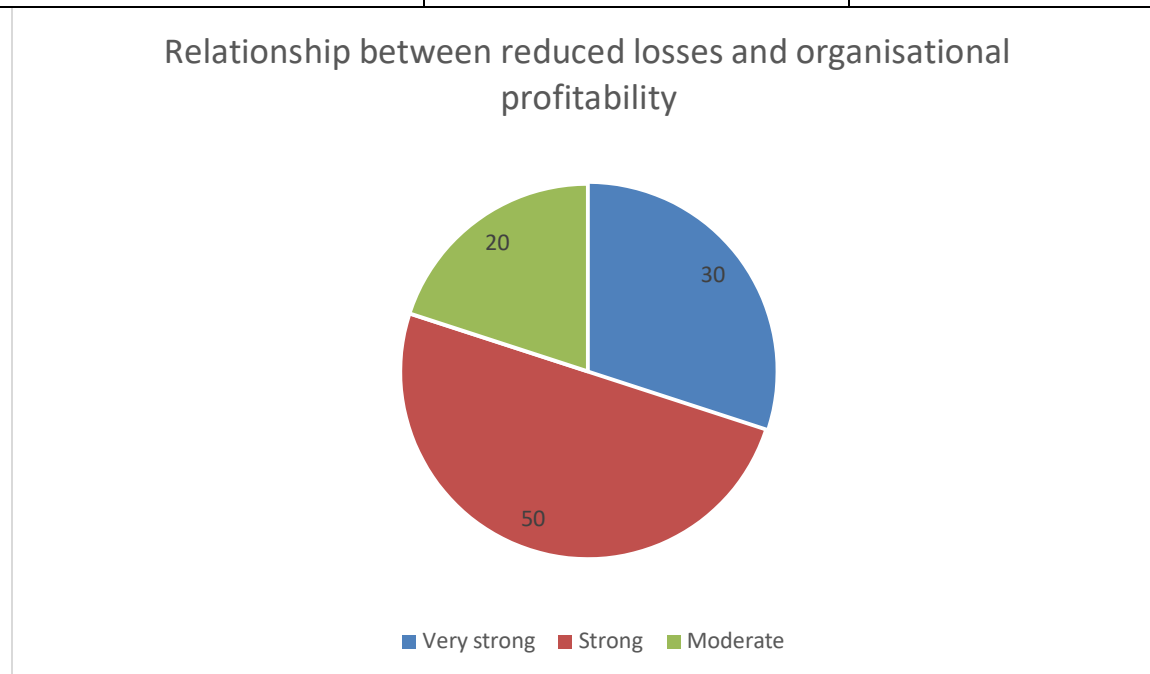


Figure 8 Pie chart representing the relationship between reduced losses and organizational profitability

The above diagram represents the data of the respondents rating of the relationship between reduced losses and organizational profitability where 3 representing 30% rated as very strong, 5 representing 50% rated as strong and 2 representing 20% rated as moderate

4.1.9 Time Saving

Table 9 Showing the distribution pf level of respondents on whether time saving affect organizational profitability.

Status	Frequency	Percentage
Yes	10	100
No	0	0
Total	10	100

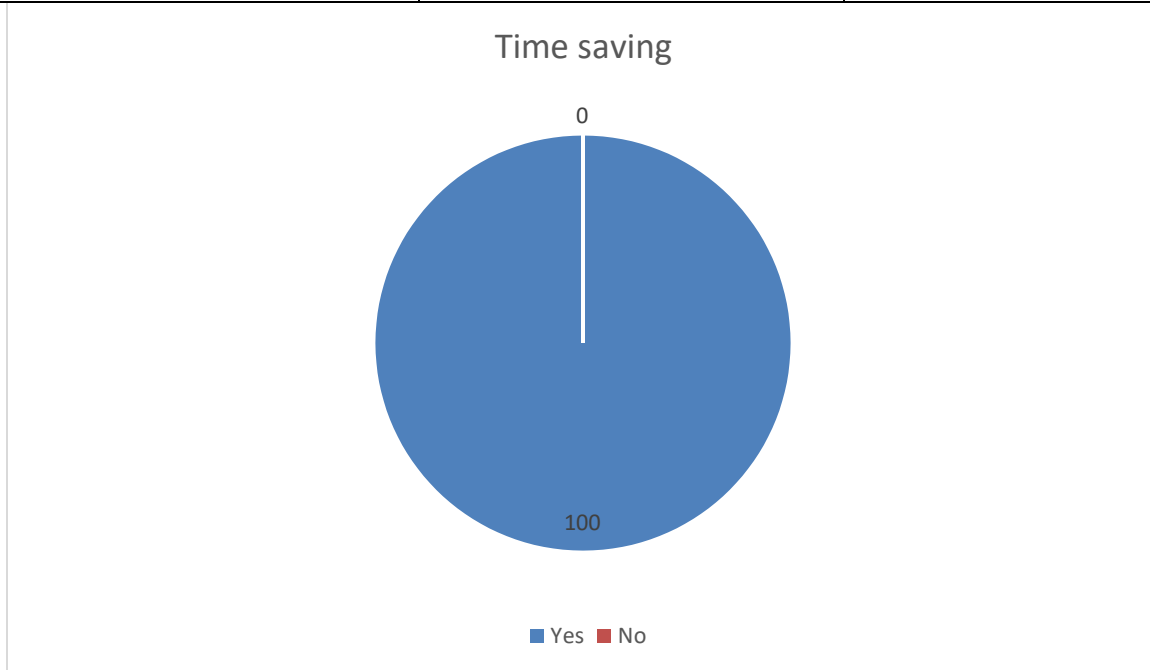


Figure 9: Pie chart representing the level of respondents on whether time saving affect organizational profitability

The above diagram representing the data of respondents and their percentage on whether time saving affects the organizational profitability and all the 10 respondents representing 100% indicated yes.

Table 10 Showing rate of effects of time saving on organizational profitability

Rate	Frequency	Percentage
Strong	5	50
Moderate	5	50
Total	10	100

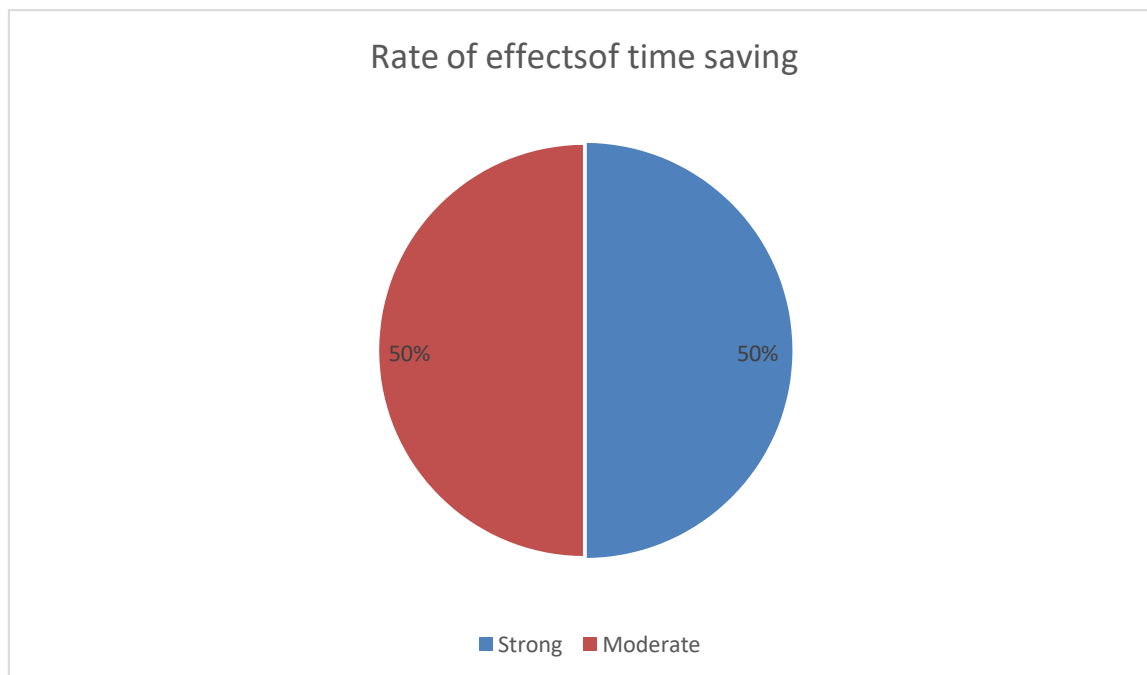


Figure 10 Pie chart representing the rate of effect of time saving on organizational profitability

The above diagram represents the data of respondents rating of the time saved on organizational profitability where 5 respondents representing 50% rated it as strong and 5 respondents representing 50% rated as moderate.

4.1.11 Reduced Handling Cost

Table 11 Showing the distribution of level of respondents on whether reduced handling cost affect organizational profitability

Status	Frequency	Percentage
Yes	9	90
No	1	10
Total	10	100

Source (Author; Year 2022)

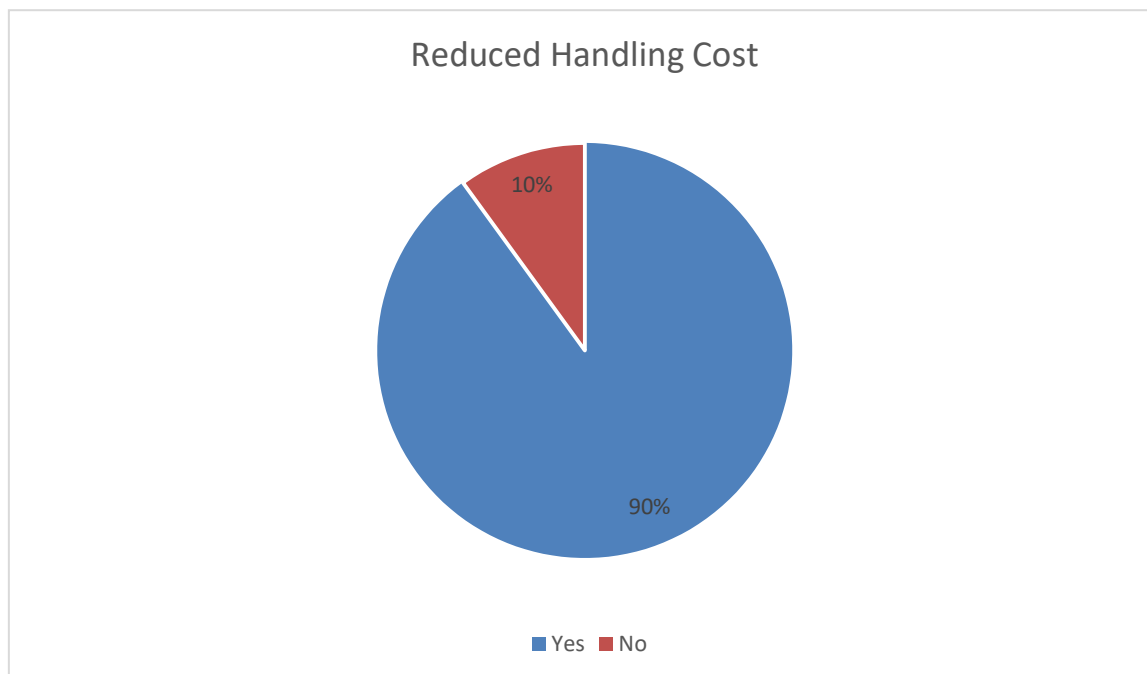


Figure 11 Pie chart representing level of respondents on whether reduced handling cost affect organizational profitability

The above diagram rep the data of the respondents and their percentage on whether reduced handling cost affects organizational profitability where 9 respondents representing 90% indicated yes and 1 respondent representing 10% indicated no.

Table 11 Showing the effect of reduced handling on organizational profitability

Rate	Frequency	Percentage
Very High	6	60
High	3	30
Low	1	10
Total	10	100

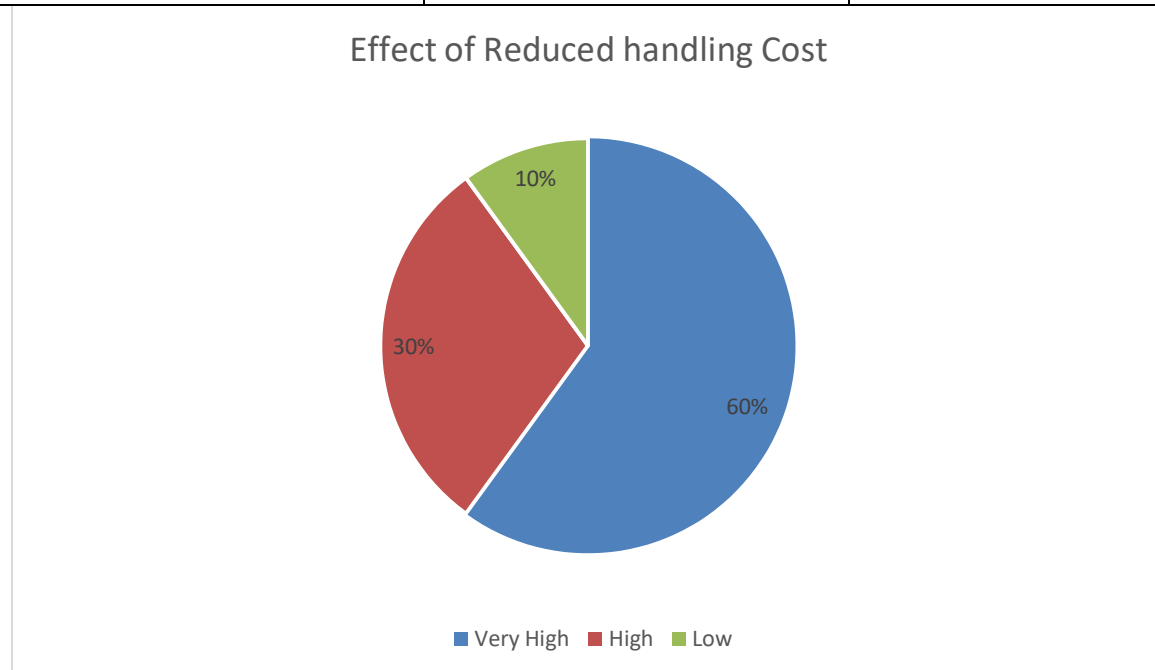


Figure 4.11 Pie chart representing data on the effect of reduced handling cost on organizational profitability

The above diagram represents the data of respondents on the effect of reduced handling cost on organizational profitability where 6 respondents representing 60% rated as very high, 3 respondents representing 30% rated as high and 1 respondent representing 10% rated as low.

4.1.12 Reduced Labour Cost

Table 12 Showing the distribution of level of Respondents on whether reduced labour cost affect organizational profitability

Status	Frequency	Percentage
Yes	8	80
No	2	20
Total	10	100

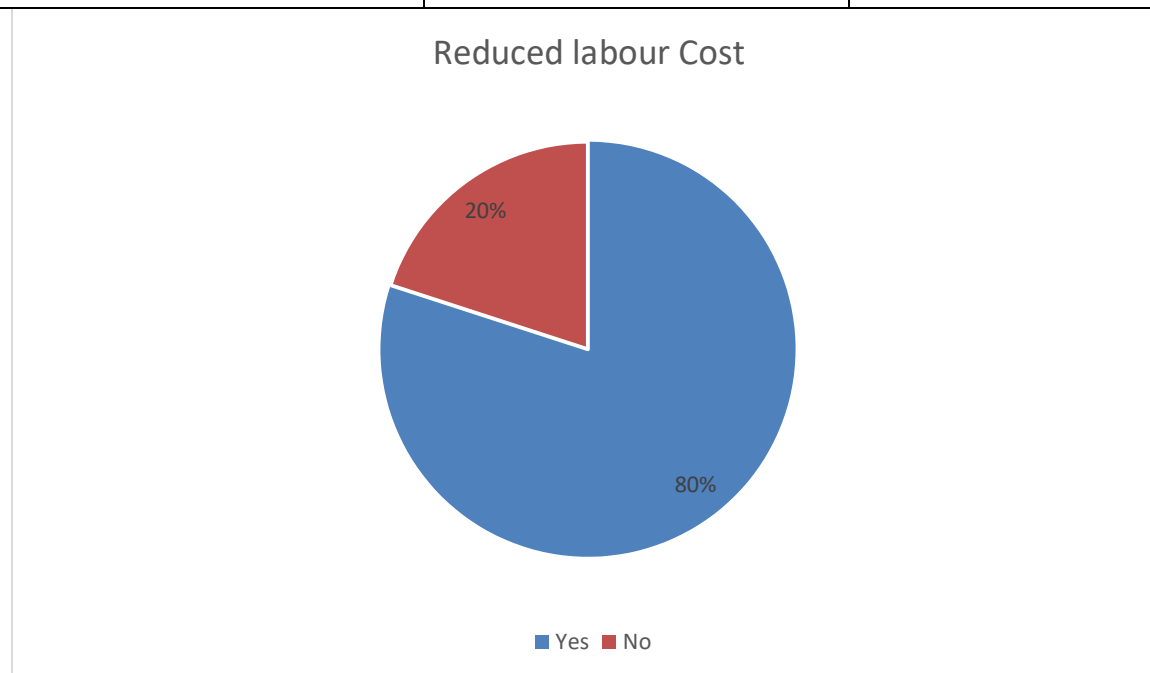


Figure 12 pie chart representing the level of respondents on whether reduced labour cost affect organizational profitability

The above diagram represents the data of respondents and their percentage on whether reduced labour cost affects organizational profitability where 8 respondents representing 80% indicated yes and 2 respondents representing 20% indicated no.

Table 13 Showing the rate of reduced labour cost on organizational profitability

Rate	Frequency	Percentage
Strong	6	60
Moderate	4	40
Total	10	100

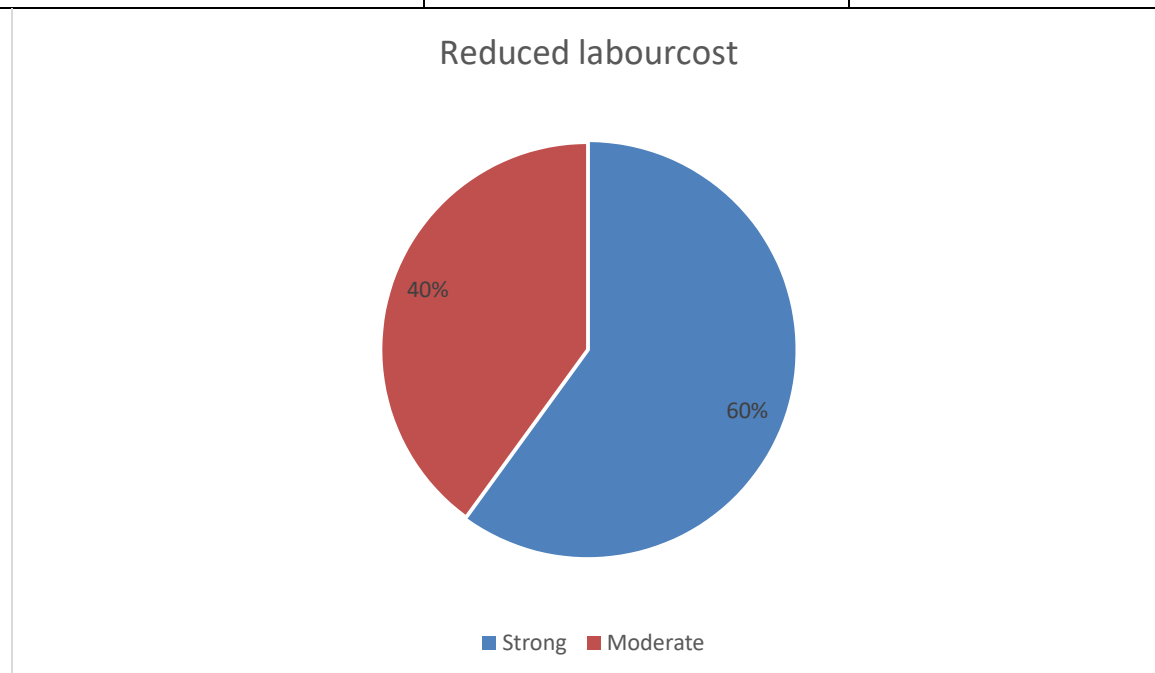


Figure 13 **Pie chart representing the rating of reduced labour cost on organizational profitability**

The above diagram represents the data of the respondents rating of reduced labour cost on organizational profitability where 6 respondents representing 60% rated it as strong and 4 respondents representing 40% rated as moderate.

4.2 Limitations of the study

The researcher was tasked with locating the employees during the course of the study because they were locked down due to the Corona Virus Disease (COVID -19) and were busy with their routine activities, making it difficult to access them. Other respondents did not understand what the study was about because they saw it as a competitive tool meant to expose their company and thus did not respond with the zeal expected, while others still held critical information to the study that they felt was sensitive to their company's revenue policy.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

5.0 Introduction

The research had an objective that was to find out whether reduced losses affect organizational profitability, which turned out to be positive, the research also finds out whether time saving affects organizational profitability, which had a 50 percent strong and 50 percent moderate effect, the research also finds out whether reduced handling cost affects organizational profitability, which turned out to have a high effect on organizational profitability, and finally it finds out whether it has a high effect on organizational profitability.

5.1 Conclusion

In relation to the findings, the research concludes that reduced loss has a significant impact on organizational profitability, time saving is also beneficial to organizational profitability because using equipment saves time, which positively affects organizational profitability, the goal of reduced handling cost has a significant impact because when machines are used, the workload is reduced, and reduced labor cost also has a significant impact on organizational profitability.

5.2 Recommendations

In respect to the research conducted recommendations are as follows

For organizations to achieve the goal of making profits it should ensure that

- The material handling method reduce time for organizational profitability
- There are reduced losses so as to ensure that they increase organizational profitability
- The material handling use has an impact of handling cost
- There is reduced labour cost from the use of material handling equipment for organizational profitability.

5.3 Suggestions for areas of further study

The researcher suggests that other researchers should stress on the area of reduced cost as an area of further studies.

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APPENDIX I

LETTER OF INTRODUCTION

DENNIS ITHAGI

THE MANAGEMENT UNIVERSITY OF AFRICA,
NAIROBI.

Dear Respondent;

**RE: EFFECTS OF MATERIAL HANDLING ON ORGANISATIONAL
PROFITABILITY: A CASE STUDY OF BIDCO OIL AFRICA LTD THIKA.**

I am a Management University of Africa student; it is a requirement that I conduct independent primary research in my field of specialization. I am requesting permission to conduct research on the above-mentioned topic in your organization. The data and information sought will be used to fulfill a portion of the requirements for the award of my diploma. All opinions will be treated with the utmost discretion. Thank you ahead of time.

Yours Sincerely,

Dennis Ithagi

APPENDIX II

QUESTIONNAIRE

SECTION A: GENERAL DEMOGRAPHIC INFORMATION

1. Gender

- a) Male []
- b) Female []

2 . Age

- a) Below 25 years []
- b) 25-30 years []
- c) 31-35 years []
- d) 36-40 years []
- e) 41 years []

3. level of Education

- a) Masters and above []
- b) University degree []
- c) Diploma []
- d) Certificate []
- e) O-level []

4. Marital status

- a) Single []
- b) Married []
- c) Separated []

5 . Religion

- a) Muslim []
- b) Christian []
- c) Other specify []

6. Tenure

- a) Below 3 years []
- b) 4-5 years []
- c) 6-7 years []
- d) Above 8 years []

SECTION B : REDUCED LOSSES

7 Does a reduced loss affect organizayional profitability

- a) Yes []
- b) No []

8 Suggest how reduced loss affect organizational profitability

.....

.....

.....

.....

9 Rate the relationship between reduced loss and organizational profitability

- a) Very strong []
- b) Strong []
- c) Moderate []
- d) Weak []

- e) Very weak []

SECTION C : TIME SAVING

10 Does time saving affect organization profitability?

- a) Yes []
b) No []

11 Suggest how time saving affects the organizational profitability

.....
.....
.....

12 Rate the relationship between time saving and organizational profitability

- a) Strong []
b) Moderate []
c) Weak []
d) Very weak []

SECTION D : REDUCED HANDLING COST

13 Does reduced handling cost affect organizational profitability

a) Yes []

b) No []

14 Suggest how reduced handling cost affects the organizational profitability

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.....

15 Rate the relationship between reduced handling cost and organizational profitability

a) strong []

b) moderate []

c) weak []

d) very weak []

APPENDIX 2 : TIME SCHEDULE

Activities	May, 2022	June , 2022	July , 2022	August , 2022	September, 2022
Writing of the proposal					
Data collection					
Data analysis					
Submission of the final document					

APPENDIX 3 : BUDGET

ITEMS	AMOUNT
Transport expenses	5000
Questionnaires	3000
Data analysis	2500
Typing and printing	1700
Other costs	3000
Total	15200