THE EFFECTS OF MATERIAL HANDLING ON PROFITABILITY OF AN ORGANIZATION: A CASE STUDY OF CHANDARIA INDUSTRIES NAIROBI

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APRIL, 2021

DECLARATION

Declaration by the student

This research project is my original work and has never been submitted to any University or any other Institution of higher learning for the award of any degree.

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Declaration by the Supervisor

This research project has been submitted with my approval as the University Supervisor.

Signed …………………………………… Date………………………………

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DEDICATION

I dedicate this research project to God Almighty for the strength, provision and guidance throughout my studies and writing of this research project.

ACKNOWLEDGEMENT

I am forever indebted to our almighty God for giving me the strength, courage and endurance during the research project. I am immensely thankful to my supervisor Dr Paul Machoka, for the support, understanding, professional counsel, and commitment to this study. I am grateful to Chandaria Industries Limited officials for their input. Finally, I would like to show my sincere gratitude to The Management University of Africa for the opportunity they have provided to study in their great institution.

Thank you very much and may the Lord bless you all.

ABSTRACT

Material handling main aim is to support the company operations with an uninterrupted flow of materials and services. This is achieved through detailed planning of the supply of materials, parts and components so that they are brought together at the right time and in the right work location. The study was guided by the following objectives; to determine the effect of material storage on profitability of an organization; to examine the impact of inventory management on profitability of an organization; to determine the impact of production planning profitability of an organization; to examine delivery procedures effect on profitability of an organization. The study was carried out on Chandaria Industries Ltd (CIL) located at Baba Dogo in Nairobi, Kenya. Descriptive research design was adopted for this study. The target population consisted of 61 respondents. Census was used to collect information from the entire population. The study collected primary data. The data was collected using questionnaires. Data for this research was quantitative. Analysis was done using SPSS Version 24. Graphs, tables and pie charts were used to represent the outcomes. The study finding indicated that The study results revealed that 79.6% (mean=3.86) of the respondents were of the view that suitable storage location improves durability. 68.8% (mean=3.44) of the responses were of the opinion that reorder point ensures stock is constant and goods supply is efficiency. 70.8% (mean=3.54) were of the opinion that Delegation of duties in term of specialization ensures smooth production process and finally the study results revealed that 72.4% (mean=3.62) of the respondents were of the view that communication efficiency enhances effective delivery. The study concluded that the basic objective of materials handling is to ensure that the right item is bought and made available to the organization operations at the right time, at the right place and at the lowest possible cost. The study recommended that effective production planning guided by the forces of demand and supply in order to satisfy customer needs. Finally the study recommended formulation of strategic delivery procedures in order to reduce the transportation cost where the study recommended bulk supply of good at a given time to reduce the overall cost.

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LIST OF ABBRIVIATION AND ACCRONYMS

SMEs: Small and Medium Enterprises

CIL: Chandaria Industries Limited

EOQ; Economic Order Quantity

JIT: Just In Time

ROI: Return on Investment

DEFINITION OF TERMS

Material Handling: Material management is a process of planning, acquiring, storing, moving, and controlling materials to use facilities, personnel, resources and capital effectively.

Profitability: Profit is usually what is left after all the costs have been removed from the accrued revenue from sales.

Material Storage: This involves a careful handling of the stock and maintaining of an accurate control over them. Handling of material is one of the activities perform by materials managers and can be an effective tool for saving cost and holding up profit.

Inventory Management: Inventory control is a means by which materials of the right quality and quantity are made available as when needed with due regards to the economy of shortages, ordering cost, purchase price and working capital.

Production Planning: Production planning is the planning of production and manufacturing modules in a company or industry. It utilizes the resource allocation of activities of employees, materials and production capacity, in order to serve different customers.

Delivery Procedures: is the process of transporting goods from a source location to a predefined destination.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Materials handling is considered to be a tool to optimize performance in meeting customer service requirements at the same time adding to profitability by minimizing costs and making the best use of available resources. The basic objective of materials handling as explained by Ondiek, (2015) and Thomas, (2014) is to ensure that the right item is bought and made available to the organization operations at the right time, at the right place and at the lowest possible cost. They stressed that without adequate planning for material resources, the overall performance of an organization may be crippled. Barker (2016) articulated that improvement in continuity of supplies with reduced lead times, reduction in inventories with reduced obsolescence and surplus, improvement in cooperation and communications with reduced duplication of effort, reduction in materials costs, improvement in quality control, improvement in status control, and quicker identification of problems are the main benefits of materials handling in organization (Ogbadu, 2015).

Every business should earn sufficient profits to survive and grow over a long period of time. It is the index to the economic progress, improved national income and rising standard of living. No doubt, profit is the legitimate object, but it should not be over emphasized. Management should try to maximize its profit keeping in mind the welfare of the society. Thus, profit is not just the reward to owners but it is also related with the interest of other segments of the society (Mason, 2017).

Globally, materials handling has been used as a tool for effectively promoting profit maximization, for example companies located in developed countries such as USA, Australia, Germany and France have applied strategic material handling techniques to enhance their revenue and increase they market share. Coca-Cola is a good example that has used materials handling strategies to maximize the use of the firms' resources by ensuring adequate supply of materials for beverage production process and also minimizing cost of holding excessive inventories (Kontinen & Ojala 2014). Apple Inc. is another international company that has efficiently utilized material handling to enhance profitability where they have provided unbroken chain of components for production to electronics and phones on time for the customer base (Hunger &Wheelen, 2015).

In Africa, firms in country with stable economy such us Ghana, South Africa and Nigeria apply material handling structure organized in such a way that they allow for integral planning and coordination of the flow of materials, in order to use the resources in an optimal way and to minimize costs. Imperial Group located in South Africa uses material handling systems to implement plans, order, and check deliveries, warehousing, controlling the use of materials, and paying for materials (Sadia & Qaisar, 2012)..

In Kenya, leading companies like Bidco, Safaricom and Kenya Airline have not been left behind in implementation of profitable material handling strategies, for example Ndovu Cement Ltd has embraced effective materials handling after the management realized it was inevitable, therefore measures were put in place to ensure the cement industry achieves its goals of providing jobs opportunities for over 60,000 people directly, over four million people indirectly and to saves the Kenyan economy some $4 billion in foreign exchange by 2020. Thus, priority was given to management of materials in organizations in order to remain and wax stronger in a global market competitive environment. As a result of the great importance of material handling the study will examine the impact of material handling of Chandaria Industries in Kenya and it effect on the company profitability.

1.1.1 Material Handling

Material handling is considered to be prime factor in profit generation for any organization. Bell and Stukhart (2016) defined materials handling functions which include planning and material take off, vendor evaluation and selection, purchasing, expenditure, shipping, material receiving, warehousing and inventory and material distribution. As material handling is interrelated to other processes and stages of firm project and is dependent over various other factors it has high uncertainty. Especially the nature of project being fragment basis with unstructured communication and no clear responsibility between the parties, increase the challenge of implementing effective material handling.

1.1.2 Profitability

Profitability means ability to make profit from all the business activities of an organization, company, firm, or an enterprise. It shows how efficiently the management can make profit by using all the materials available in the market. According to Harward & Upton, "profitability is the 'the ability of a given investment to earn a return from its use."

However, the term 'Profitability' is not synonymous to the term 'Efficiency'. Profitability is an index of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency (Sadia & Qaisar, 2012). Though, profitability is an important yardstick for measuring the efficiency, the extent of profitability cannot be taken as a final proof of efficiency. Sometimes satisfactory profits can mark inefficiency and conversely, a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply reveals a satisfactory balance between the values receive and value given. The change in operational efficiency is merely one of the factors on which profitability of an enterprise largely depends. Moreover, there are many other factors besides efficiency, which affect the profitability (Sadia & Qaisar, 2012).

1.1.3 Chandaria Industries Limited

According to the company website www.Chandaria.com, Chandaria Industries Ltd was founded by Maganlal Chandaria in Mombasa in 1947. The company manufactured paper drinking straws using a converting machine (operated by Mr. Chandaria himself), followed by the manufacture of adding machine rolls, toilet paper, teleprints and other products before the re-location to Nairobi in 1974. In 1985, the volumes of demand justified the installation of paper mill to manufacture various grades of paper and tissue.

In 1987, the group purchased Kenya Paper Mills from Lonrho. Madhu paper was added to the group in 1988. Tanpack Tissues in Tanzania is a recent addition to the group. The portfolio also includes Colour Packaging (which makes specialized products for a niche market), Guardian Bank, etc.

In Kenya Chandaria Industries Ltd (CIL) located at Baba Dogo in Nairobi, Kenya. The company's core business is tissue paper manufacturing through waste paper recycling and virgin pulp blending into hygiene grades that include; toilet tissues, tissue napkins, paper towels, facial tissues and recycling of cotton fibres into absorbent cotton wool. The Chandaria Group of

Industries is a family-owned business (with the three key players being Maganlal and his two sons, Dinesh and Mahesh) that relies on a strong professional team being involved in every sector of specialization (www.Chandaria.com).

A committed team of senior, middle and junior managers ensure a drive of excellence in all the departments such as global research, production, sales and marketing and finance. It is a force to be reckoned with in the printing, packaging and paper converting sector with exports to Uganda, Tanzania, Rwanda, Burundi and other countries besides local sales. The company mission Statement states that "Our goal at Chandaria Industries Ltd. is to continually improve our environmental performance, at the same time provide our clients with quality paper and tissue products from sustainable and recyclable paper (www.Chandaria.com).

1.2 Statement of the Problem

Ideally, material handling main aim is to support the company operations with an uninterrupted flow of materials and services. This is achieved through detailed planning of the supply of materials, parts and components so that they are brought together at the right time and in the right work location.

However, companies have been facing challenges in term of information service for controlling the distribution of products, production management, instruction, manufacturing, delivery routes and other background production information. Also, organization are facing problems in control of quality of company's product and provision of required level of customer services for higher profitability.

According to study carried by Monday, (2017) on material management impact on firm overall performance indicated that forces of supply and demand are elements that regulate prices and availability of materials which eventually leads to better or poor business performance. Dong, & Jhy-tay (2014) study on resource management on firm revenue generation identified transportation cost of moving materials and making decisions on route to follow, the means of transportation and the vehicle to use as barrier to overall organization performance.

Therefore, this study will aim to fill the research gap by identifying the relationship between material storage, inventory management, and production planning and delivery procedure impact on profitability of Chandaria Industries Limited.

1.3 General Objectives

The main objective of the study was to establish impact of material handling on profitability of organization with specific reference of Chandaria Industries Limited

1.3.1 Specific Objectivities

i. To determine the effect of material storage on profitability of Chandaria Industries Limited
ii. To examine the impact of inventory management on profitability of Chandaria Industries Limited
iii. To determine the impact of production planning profitability of Chandaria Industries Limited
iv. To examine delivery procedures effect on profitability of Chandaria Industries Limited

1.4 Research Questions

i. How does material storage affect profitability of Chandaria Industries Limited?
ii. What is the effect of inventory management affect profitability of Chandaria Industries Limited?
iii. To what extent does production planning affect profitability of Chandaria Industries Limited?
iv. How do delivery procedures effect profitability of Chandaria Industries Limited?

1.5 Significance of the Study

The study will be significant to the following parties;

Businesses will gain insight on various material handling practices that are appropriate and can enhance organization profitability. The businesses also will be able to understand how to use effective material handling to reduce lead times, reduction in inventories with reduced obsolescence and surplus, improvement in cooperation and communications.

Through the study the government will be able to identify loopholes in the material handling practices and formulate regulation and policies that will create conducive environment for fair competition.

The management of the CILs wills l high benefit as they will implement the recommended solution on material handling. They will also have a deeper understanding on the concept of impact of material handling on profitability of organization.

Scholars will gain relevant knowledge on the role of material handling on profitability of organization hence those aspiring to be entrepreneur can practically apply them. The study will be a great source of reference for future research who will be interested in carrying out study on the role of material handling on profitability of organization as the study will provide the relevant information related to the field.

1.6 Scope of the Study

The study was carried out on Chandaria Industries Ltd (CIL) located at Baba Dogo in Nairobi, Kenya. Being one of leading company in manufacturing of paper drinking straws, toilet paper teleprints and other products in Kenya it provided efficient information on the role of material handling on profitability. The study was carried between the month of February-April 2021 which is appropriate time as most employees are operational hence the researcher was able to correct enough information on the material handling and it impact on profitability. Finally the study was guided by the following variable; material storage, inventory management, production planning, delivery procedures and their impact on the profitability of Chandaria Industries Limited.

1.7 Chapter Summary

Chapter one focus on the introduction, background to the problem, statement of the problem, purpose of the study and research questions, significance of the study, scope of the study, operational definition of key terms and chapter summary.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This section will cover the theoretical review, empirical review, conceptual framework, critique of existing literature relevant to the study, summary of reviewed literature and research gap.

2.1 Theoretic Literature Review

2.1.1 Queuing Theory

Queuing theory is the mathematical study of the congestion and delays of waiting in line. Queuing theory (or "queueing theory") examines every component of waiting in line to be served, including the arrival process, service process, number of servers, number of system places, and the number of customers—which might be people, data packets, cars, etc. Queues happen when resources are limited. In fact, queues make economic sense; no queues would equate to costly overcapacity. Queuing theory helps in the design of balanced systems that serve customers quickly and efficiently but do not cost too much to be sustainable. All queuing systems are broken down into the entities queuing for an activity (Agner, 2012).

Queuing theory is the mathematical study of waiting lines, or queues. A queuing model is constructed so that queue lengths and waiting time can be predicted. Queuing theory is generally considered a branch of operations research because the results are often used when making business decisions about the resources needed to provide a service.

Queuing theory has its origins in research by Agner, (2012) when he created models to describe the Copenhagen telephone exchange. The ideas have since seen applications including telecommunication, traffic engineering, computing and, particularly in industrial engineering, in the design of factories, shops, offices and hospitals, as well as in project management.

This theory will guide the study in investigating the relationship between material handling equipment and effective inventory management. Queuing theory is a mathematical study of waiting lines or queues (Shingo, 2015). The theory enables mathematical analysis of several related processes, including arriving at the back of the queue, waiting in queue (a storage process) and being served in front of the queue. The theory permits the derivation and calculation of several performance measures including the average waiting time in the queue or the system, the expected number waiting or receiving service, and the probability of encountering the system.

2.1.2 Control Theory

Classical control theory is a branch of control theory that deals with the behavior of dynamical systems with inputs, and how their behavior is modified by feedback, using the Laplace transform as a basic tool to model such systems. The usual objective of control theory is to control a system, often called the plant, so its output follows a desired control signal, called the reference, which may be a fixed or changing value. To do this a controller is designed, which monitors the output and compares it with the reference (Banker, 2012).

The difference between actual and desired output, called the error signal, is applied as feedback to the input of the system, to bring the actual output closer to the reference. Classical control theory deals with linear time-invariant single-input single-output systems. The Laplace transform of the input and output signal of such systems can be calculated. The transfer function relates the Laplace transform of the input and the output (Banker, 2012).

This is an interdisciplinary branch of engineering and mathematics that deals with the behavior of dynamical systems with inputs, and how their behavior is modified by feedback. The usual objective of control theory is to control a system, often called the plant, so its output follows a desired control signal, called the reference, which may be a fixed or changing value. To do this controller is designed, which monitors the output and compares it with the reference. The difference between actual and desired output, called the error signal, is applied as feedback to the input of the system, to bring the actual output closer to the reference.

2.1.3 System theory

System theory is the Trans disciplinary theory of the abstract organization of phenomena, independent of their substance, type, or spatial or temporal scale of existence (Reade, 2015). It investigates both the principles common to all complex entities, and the (usually mathematical) models which can be used to describe them (Bailey, 2013). A system can be said to consist of four things (Crum & Ramamurthy 2016). The first is objects the parts, elements, or variables within the system. These may be physical or abstract or both, depending on the nature of the system. Second, a system consists of attributes the qualities or properties of the system and its objects. Third, a system had internal relationships among its objects. Fourth, systems exist in an environment (Beven, 2016).

A system, then, is a set of things that affect one another within an environment and form a larger pattern that is different from any of the parts (Hoek, 2015). The fundamental systems-interactive paradigm of organizational analysis features the continual stages of input, throughput (processing), and output, which demonstrate the concept of openness/closeness (Bailey, 2013). A closed system does not interact with its environment. It does not take in information and therefore is likely to atrophy, that is to vanish. An open system receives information, which it uses to interact dynamically with its environment (Swanson, 2010).

Openness increases its likelihood to survive and prosper (Beven, 2016). Several system characteristics are: wholeness and interdependence (the whole is more than the sum of all parts), correlations, perceiving causes, chain of influence, hierarchy and subsystems, self-regulation and control, goal-oriented, interchange with the environment, inputs/outputs, the need for balance/homeostasis, change and adaptability: there are various ways to achieve goals (Watts, 2013). Different types of networks are: line, commune, hierarchy and dictator networks. Communication in this perspective can be seen as an integrated process – not as an isolated event (Beven, 2016).

In relation to the study the system theory states that there exist relations between different parts of an organization which interact in order to achieve the desired goals. In material handling the relation between supplier and the business must be effectively integrated with current technology to ensure delivery of good and services is appropriate.

2.1.4 Coordination theory

According to Govindan, Popiuc and Diabat (2013), the first key claim of coordination theory is that dependencies and the mechanisms for managing them are general, that is, a given dependency and a mechanism to manage it will be found in a variety of organizational settings. For example, a common coordination problem is that certain activities require specialized skills, thus constraining which actors can work on them; this dependency between an activity and an actor arises in some form in nearly every organization. Coordination theory suggests identifying and studying common dependencies and their related coordination mechanisms across a wide variety of organizational settings (Ossowski & Omicini, 2002). In the 1990s, supply chain management grew out of the recognition that increased reliance on improved relationships, collaborations, and information exchange with supply chain partners. Both internal and external organizational changes are required for successful supply chain management. Greater cooperation and coordination across the supply chain, both intra- and inter-organizational, through long-term and strategic relationships have led to improved financial and organizational performance.

According to Govindan, Popiuc and Diabat (2013), explains that the second claim is that there are often several coordination mechanisms that can be used to manage a dependency. For example, mechanisms to manage the dependency between an activity and an actor include (among others): (1) having a manager pick a subordinate to perform the task, (2) first-come first-served and (3) a labour market. Again, the claim of coordination theory is that these mechanisms may be useful in a wide variety of organizational settings. Organizations with similar goals achieved using more-or-less the same set of activities will have to manage the same dependencies, but may choose different coordination mechanisms, thus resulting in different processes. (Hunt & Davis, 2012). SCMP is typically an outcome of the interaction between a firm and various outside entities. Supplier and customer involvement, integration, and collaboration are important routes to performance improvements in organizations.

2.3 Empirical Literature Review

2.3.1 Storage and Profitability

Brennan (1958) defines the marginal cost of storage as the marginal outlay on physical storage costs plus a marginal risk-aversion factor minus the marginal convenience yield on stocks, the convenience yield being the reduction in transaction cost from holding of physical stocks. Fulgie (1995) incorporates in storage cost, storage loss along with marketing cost like marketing inputs. Renkow (1990), in his study on storage cost impact on firm growth a case study of Lenon Supplies in Australia where he purposively sampled 10 manager and analyzed the data using linear regression indicate that the net cost of storage includes the value of storage loss reflecting the effectiveness of storage technology. The study concluded that constraints on the access to effective storage technology raise the storage cost. In this respect, the study recommended that organizations that have appropriate storage technologies available in developing raising inter-temporal storage cost to the point that storing for future sales becomes profitable.

In many other respects, price seasonality is insufficient to explain storage decision in developing countries. Renkow (1990) proposes the first model of storage opposing price arbitrage to food security in the household's storage decision. Although Renkow's model encompasses the two goals of the household decision, it fails to consider the major assumption of risk aversion in developing countries (Saha, 1994).

Another study carried by Ranju, (2017) on the storage influence on the overall performance of a business where he surveyed 21 manufacturing company showed that storage should be integrated in the total resource allocation in the company. Ranju concluded that production, storage and sales decisions are not made in isolation of each other, but in coordinated strategy. He recommended that storage management decisions balance the goals of maximizing profits and reducing price risk. The companies considers their cash wealth, grain availability and current grain market condition, instead of focusing on the amount wealth to save each period given exogenously determined incomes. Park's model emphasizes the tension between the desire to maximize income as a producer and reduce exposure to uncertainty.

Kluger, (2018) study on the relationship of storage and firm expansion indicated that dividing the work of an organization according to importance and then grouping them into one is essential for performance enhancement. The study concluded that good stores organization according to importance is one wherein the functions of stores department have been carefully planned and coordinated to achieve the objectives of store keeping successfully.

Verj, (2016) concurred with Kruger on the importance of appropriate storage on growth, where he sampled 40 SMEs in Lagos and carried cross-tab analysis, the study showed that stores organization should aim at the following functions in order to achieve the organizations efficiency: Smooth functioning of the whole enterprise, perfect coordination different functional departments as well as between other departments in the organization avoidance of all types of delay, wastage and spoilage and reduction of operational costs at all levels including reduction in time and effort in the accomplishment of a job. The study concluded that purchasing function should be invariably being separated from materials organization and should be looked after by an independent executive separately responsible for his assignment and answerable directly to the chief executive. Finally the study recommended that the whole materials holdings organization should be looked after by an independent executive separately responsible for his assignment and answerable directly to the chief executive. Division of the holdings materials organization would be too broad but clearly distinguishable categories; Top functionaries designated as top materials management and operating staff

In order for the storage systems to functions efficiently, the storekeeper must be in place and in the manner prescribed; to issue the stores and proper authorization and to proper persons following the correct procedure and of course, within least possible time, to maintain complete, up – to – date and correct records, to preserve the materials for maintaining their original value and quality, to replenish the stock and to advise the management on day to day affairs of the stores department, particularly regarding obsolete, unserviceable and slow moving items according to (Xamar, 2012)

According to Jessop, (2015), the above duties, the store keeper should also ensure that the responsibilities are achieved. Therefore the storekeeper should be responsible for the materials which he receives. It ensures that all the materials are received on a proper authorization and checked with reference to the specification given in the order form. Materials should be kept in the right place and in the right prescribed manner. Stores verification is essential for the purpose of valuation. Issues of stores are the most important thing which involves comparatively greater responsibility. This is ensured by comparing the code number and correct nomenclature of the part that only the right type of part is issued.

2.3.2 Inventory Management and Profitability

Inventory management policies and procedures are normally designed to ensure that affirm or an organization uses its inventory in a way that it is able to maximize its profit from the least inventory investment amount without encroaching or affecting customer’s levels of satisfaction (Anene, 2014). Inventory constitutes a large portion of total investment, it is vital that a firm adapts a good inventory management system to enable firm’s growth and enhancement of firm’s profitability (Anichebe & Agu, 2013). As such, the Economic Order Quantity (EOQ) theory states for a firm to maximize benefits from inventory management it should hold an optimal inventory, which minimizes both ordering cost and holding cost of inventories. The Just in Time (JIT) model proposes that firms should produce or to purchase products or components as they are required by customers or for use rather than holding stock (Sitienei & Memba, 2015).

A study by Koumanakos (2017) on effect of inventory management on performance of some firms established that a rate of returns is significantly affected by the level of inventory held. That is, high inventory level lowers the rate of returns. Khaled & Hayam(2016) studied the relationship that exists between management of inventory and the general firm’s performance. The study established that inventory to sales ratio affects organization performance negatively in the initial growth stage and the maturity stage; it exerts a positive and significant coefficient on performance in either the rapid growth stage or the revival stage. Further, Kwadwo (2016) investigated effect of efficient management of inventory on profitability of manufacturing firms. The study revealed that significantly and positive correlation between raw materials inventory management and profitability of manufacturing firms in Ghana.

In their study, Duru, Oleka and Okpe (2014) analyzed effect of inventory management on profitability and revealed that inventory turnover had significant and negative effect on the profitability. Additionally, Siyanbola (2012) also studied effect of stock valuation on profitability of manufacturing industries. The study established that high stock cost affects profit negatively and stock also affects the company’s profitability. Lwiki et al.(2013) also studied effect of inventory management practices on financial performance. The study established a positive and statistically significant correlation between management of inventory and return on sales.

Roumiantsev and Netessine (2015) investigated the association between inventory management policies and the financial performance of affirm. The purpose of the study was to assess the impact of inventory management practices on financial performance across the period 1992-2002.They used conventional firm specific variables (inventory levels, margins, and lead times) as explanatory variables. They found no evidence that smaller relative levels are associated with financial performance as measured by return on assets. Eckert (2007) examined inventory management and role it plays in improving customer satisfaction. He found a positive relationship between customer satisfaction and supplier partnerships, education and training of employees, and technology.

In Greece, Koumanakos (2017) studied the effect of inventory management on firm performance in manufacturing firms operating in three industrial sectors in Greece, food textiles and chemicals were used in the study covering 2000 – 2002 period. The hypothesis that lean inventory management leads to an improvement in a firm's financial performance was tested. The findings suggest that the higher the level of inventories preserved (departing from lean operations) by a firm, the lower the rate of return. In conclusion, most of the studies reviewed concentrated on conventional firm level variables such as inventory levels, demand and leadtime. Oko, Mgbonyebi and Umeadi (2017) carried out a research on the association of inventory control in enhancing business growth in Nigeria a survey of five selected manufacturing companies in port Harcourt metropolis. They made use of simple percentage and chi-square. The analysis revealed significant relationship between inventory control and business growth.

2.3.3 Production Planning and Profitability

Aaccording to Arnold, (2018) production management is simply the analysis involved in transforming raw material or components into finished products, integrated synergistically to reduce waste in time and finance with maximum obtainable profit. With reference to services (intangible), production is the discharge of a function with some degree of utility, which for goods (tangible) production is viewed as the fabrication, interchange and re-use of physical objects through machines, human resources and any other pertinent applicable tools. The use of tools in a concise approach is referred to as operation which is however broader and all-encompassing due to its on-limitation.

Odera, (2012) carried a study in production planning in industrial area Nairobi, Kenya, he used both descriptive and inferential statistics to analyses the data collected. The study found that, there is a continuous dearth of well-defined, interchange and effective production management due to consistent failure in production variables such as production operations, budgeting, profitability and technological advancement coupled with competitions in working environment. The study recommended that the sole objective of a production policy is to ensure that products are supplied in the required volume of the required quality at the time required and at affordable minimum cost. This simplistic desire, demands effective and flexible production planning, in meeting all the requirements in terms of resources usage.

According to Bailey, (2015) research on production planning impact on firm growth in Nigeria indicated that production planning is associated with planning (that is the acquisition, time of usage, quantity) of the resources required to perform these transformation steps, in order to satisfy the customers in the most efficient or economical way. His study concluded that the production decisions are typically taken by looking at the best trade-off between financial objectives and customer service or satisfaction objectives. The study recommended that the ability of enterprise to get sufficient return on the CapitaLand employees used in the business operation. Revenue and profits are driven solely by market share and efficiency, therefore success is determined mainly by the ability of a company to ensure superior capacity utilization.

2.3.4 Delivery procedures and profitability

Bardi, (2016) explains that most consumer goods are delivered from a point of production (factory or farm) through one or more points of storage (warehouses) to a point of sale (retail store), where the consumer buys the good and is responsible for its transportation to point of consumption. There are many variations on this model for specific types of goods and modes of sale. Products sold via catalogue or the Internet may be delivered directly from the manufacturer or warehouse to the consumer's home, or to an automated delivery booth. Small manufacturers may deliver their products directly to retail stores without warehousing.

According to Denkur, (2015) research on impact of delivery strategies on firm profitability of industries manufacturing in Sera Leone indicated that some manufacturers maintain factory outlets which serve as both warehouse and retail store, selling products directly to consumers at wholesale prices (although many retail stores falsely advertise as factory outlets). The study found that building, construction, landscaping and like materials are generally delivered to the consumer by a contractor as part of another service. The study recommended that highly perishable or hazardous goods, such as radioisotopes used in medical imaging, should be delivered directly from manufacturer to consumer.

Carter, (2014) study on transport means effect on firm profitability in Qatar where he used a case study of Mathur Electronics indicated that vehicles are often specialized to deliver different types of goods. On land, semi-trailers are outfitted with various trailers such as box trailers, flatbeds, car carriers, tanks and other specialized trailers, while railroad trains include similarly specialized cars. The study recommended that armored cars, dump trucks and concrete mixers should be vehicles specialized for delivery of specific types of goods. On the sea, merchant ships come in various forms, such as cargo ships, oil tankers and fishing boats. Freight aircraft are used to deliver cargo.

Kartev, (2017) study in Russia on Impact of delivery techniques impact on businesses prosperity. He used a sample of 51 SMEs where he analyzed the data collected through multiple regression. The result indicated that the fundamental principle is that before a work package is allocated to a team, there should be an agreement between the project manager and the team manager as to what is to be delivered, the reporting requirements, what constraints to be applied. The study concluded that work package should be made available to the team manager, there would be various things to discuss and agree with the project manager, and these include things like the tolerances who's going to approve the products produced as part of work on this work package and so on. The study recommended that team manager should produce a team plan and then a general context this will show and timescales etc.

Salome, (2014) on importance of delivery indicated the work should be executed and monitored to the requirements defined in the authorized work package. The study found out that while developing the product, the team manager should not exceed the work package tolerances agreed with the project manager. The study recommended that executing a work package calls is a creation of the specialist products. As soon as there is a full cost to exceed any of the tolerances, the team manager must raise an issue to the project manager.

2.4 Summary and Research Gap

Materials management organizational concept is the aspect of having a single manager responsible for planning, motivation and controlling of all those activities that are principally concerned with the flow of a materials into an organization. There are different emphases on the above definitions, but all are concerned with the management of materials and all starts with the supplier. However, purchasing, goods receiving, quality control, materials handling and internal transportation are also included in the definition.

In this sense, material management is concerned with all activities which are related to the flow of materials, from the supplier's plant through the manufacturing process, into finished goods warehouse and on to the ultimate users of the product. Material management encompasses the planning and management of all activities involved in sourcing, procurement, conversion and logistics management activities. It is considered as a cross-functional approach to managing the movement of raw materials into originations, certain aspect of the internal processing of material into finished goods out of the organization towards the and consumers. The true cost of material is the total amount invested in them up to the point of final use, and all operations that contributed to the cost from the ordering of the materials to their delivery to the workplace must be geared into two objectives. First, to provide the manufacturing operation with an adequate supply of the right materials at the right time and second, to minimize the total cost.

Most studies has concentrated on marketing strategies and way of reducing production cost hence underestimating the importance of material handling on the overall performance and profitability of an organization, therefore it is this gap that the research will aim to fill. Profitability can be achieved through effective management of materials with particular attention to sourcing, receiving, storing and issuing materials. Prudent management of materials reduces depreciation, pilferage and wastages and ensures availability of materials. We would like to re-emphasize that for a firm to achieve profitability the goal of materials management should be properly planned.

2.5 Conceptual Framework

The study applied the following conceptual framework to illustrate how various variables participated in the study. The conceptual consist of independent and dependent variables. The independent variables are; material management, inventory management, production planning and delivery procedure while dependent variable was profitability.

Independent Variables **Dependent Variable**

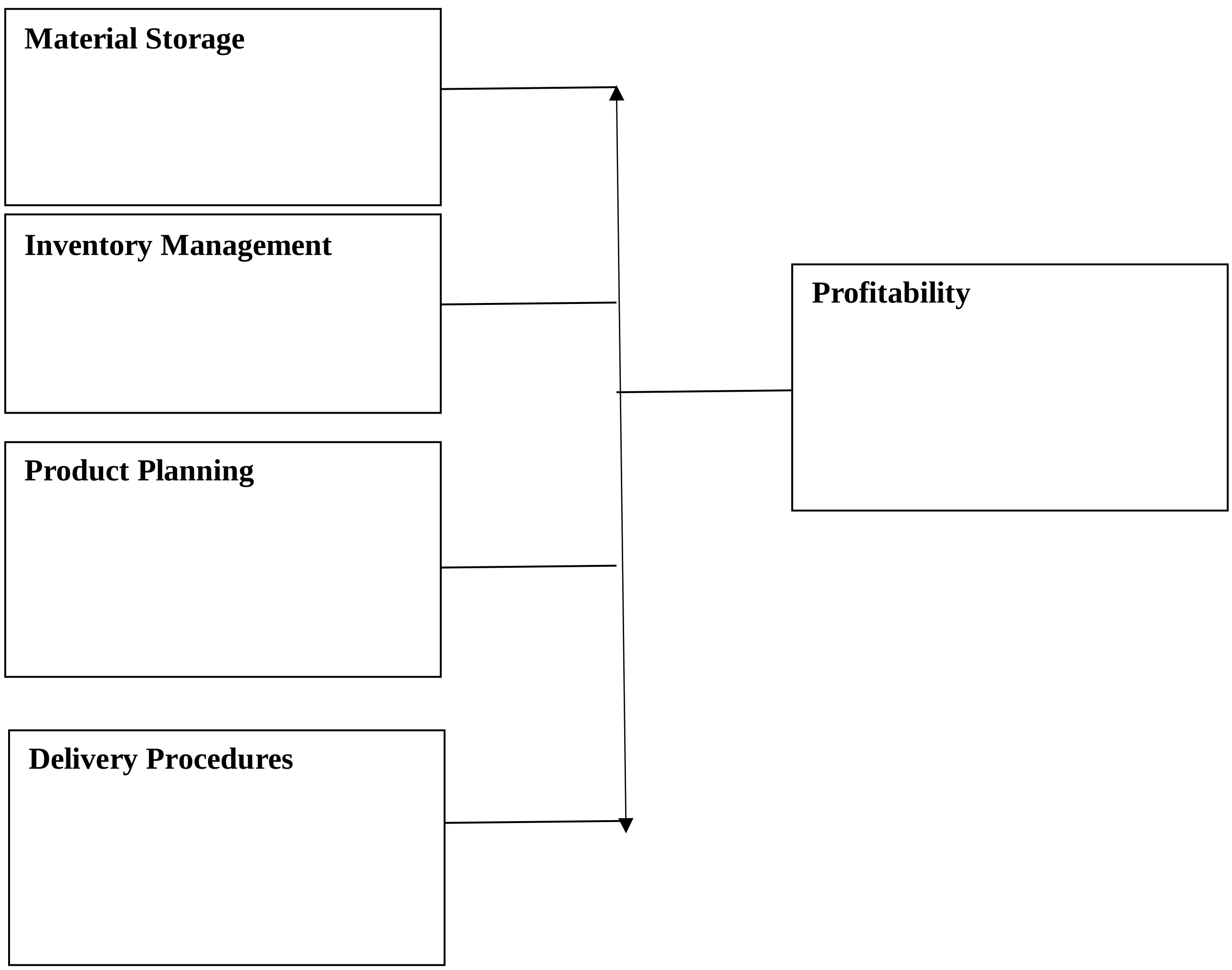

Figure 2.1: Conceptual Framework

2.6 Operationalization of Variables

Table 2.1 Operationalization of Variables

Variables	Indicators	Measurements Scale	Tools of analysis
Material Storage	• Location • Layout • Storage Equipment	▪ Likert scale of 1-5 ▪ 1 = Strongly agree to 5 = Strongly disagree	
Inventory Management	• Stock Tracking • Accuracy • Reorder Point		▪ Likert scale of 1-5 ▪ 1 = Strongly agree to 5 = Strongly disagree
Product Planning	• Resource Allocation • Duties Delegation • Administrative Technique		▪ Likert scale of 1-5 ▪ 1 = Strongly agree to 5 = Strongly disagree
Delivery Procedures	• Communication Efficiency • Supply Chain • Destination		▪ Likert scale of 1-5 ▪ 1 = Strongly agree to 5 = Strongly disagree

2.7 Chapter Summary

The chapter presented theories related to the study, also the chapter reviewed literature related to the independent variables which included material storage, inventory management, and production planning and delivery procedure on organization profitability. The chapter conceptualized the independent and depend variable and operationalized the variables.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter dealt with the research design and methodology of the study. It was divided into the following sections: The study design, target population, sampling technique, sample size, data collection instruments, and data collection procedures and data analysis methods.

3.1 Research design

A descriptive research design was adopted for this study. A descriptive study is one in which information is collected without changing the environment (i.e., nothing is manipulated). Descriptive research does not fit neatly into the definition of either quantitative or qualitative research methodologies, but instead it can utilize elements of both, often within the same study. The term descriptive research refers to the type of research question, design, and data analysis that was applied to a given topic (Kombo & Tromp, 2006). Descriptive statistics tell what is, while inferential statistics try to determine cause and effect. (Yin, 2003).

3.2 Target population

Target population refers to the larger population to which the researcher ultimately would like to generalize the results of the study (Mugenda &Mugenda, 2003). It is thus the entire group of individuals, events or objects having common observable characteristics. The study targeted Chandaria Industries Ltd. The target population consisted of 14 senior manager, 10 middle manager, 5 supervisors, and 32 employees. The target population consisted of 61 respondents.

Table 3.1 Target Population

Group	Target
Senior Manager	14
Middle Managers	10
Supervisors	5
Employees	32
Total	61

Source: (Researcher, 2021)

3.3 Sample Size and Sample Technique

Kothari (2004) defines a sample as part of the target population that has been procedurally selected to represent it. Sampling is the process of systematically selecting representative elements of a population.

Since the population is small (61) census was used to collect information from the entire population (Kothari, 2004). A census provides a true measure of the population i.e. no sampling error, benchmark data may be obtained for future studies and detailed information about small sub-groups within the population is more likely to be available.

The respondents were selected through stratified and simple random sampling. Stratified sampling was used on senior manager, middle managers and supervisors while simple random sampling was used to ensure that every person has an opportunity to take part in the study.

3.4 Data Collection Instruments

The study employed the use of primary instruments to collect the data for the study. The instruments used was therefore be questionnaires, interview schedules and data sheets. Kothari (2004) stated that, questionnaire are very economical interns of time, energy and finance. Similarly, it yields quantitative data which is very easy to collect. Questionnaires was used to capture the various variables under the study. A questionnaire is a research instrument that gathers data over a large sample and its objective is to translate research objectives into specific questions. The strength of a questionnaire over other instruments is that information can be collected from large samples and opportunity for bias is reduced since it is presented in paper form and confidentiality is upheld. Questionnaires were used to obtain data from the employees.

3.5 Pilot Study

Pilot studies are small-scale, preliminary studies which aim to investigate whether crucial components of a main study – usually a randomized controlled trial (RCT) was feasible (Kothari, 2007). The instruments were pilot-tested away from the target population in order to evaluate and review the interview questions before administering it on the sample

3.5.1 Validity

Validity is the extent to which an instrument can measure what it ought to measure. It therefore refers to the extent to which an instrument asks the right questions in terms of accuracy. Mugenda and Mugenda (2003), defines validity as the accuracy and meaningfulness of inferences which are based on the results. For a research instrument to be considered valid, the content selected and included in the questionnaire must be relevant to the variable being investigated. To test the validity, the researcher was presented to the supervisors for scrutiny and comments. Their constructive criticism was used to revise the instruments until they are suitable for collecting information for the study.

3.5.2 Reliability

Orodho (2012) notes that reliability of research instruments concerns with the degree to which a particular measuring procedure gives similar results of a number of repeated trials. A pilot study was carried out to determine the reliability of the questionnaire, where the responses of the subjects were checked against the research objectives. The questionnaire was pilot tested on (10) respondents who are part of target population but not in the sample. This represents slightly above 10% of the accessible population that is generally recommended by social researchers (Mugenda&Mugenda, 2003). After pilot testing, the questionnaires were subjected to Cronbach's alpha coefficient to measure the internal consistency of the questionnaire. As a general rule whereby, a value of $\alpha > 0.7$ was determined reliable enough for each of the data sets.

3.6 Data Collection Procedure

The researcher notified Chandaria Industries Ltd of the intention to drop research instruments a week earlier. After that the researcher availed the instruments in Chandaria Industries Ltd to be filled by respective respondents and thereafter collect back the instruments for analysis.

3.7 Data Analysis and Presentation

The data was collected using questionnaires. Data for this research was quantitative. Qualitative data analysis involved explanation of information obtained from the literature. This was done though discussion and explanation of study findings. Quantitative analysis was done for the numerical data obtained from the field. This was done using descriptive statistics with the help of Statistical Package for Social Sciences (SPSS) and Microsoft version of Excel. The responses in the questionnaire were coded into common themes to facilitate analysis. The coded data was then be entered into SPSS program to generate measures of central tendency (mode and mean) and measures of dispersion such as percentages and ranks. Hence the researcher went through the responses tallying them with regard to outcomes from different respondents to each variable. Graphs, tables and pie charts were used to represent the outcomes. Analysis was done using SPSS Version 24.

3.8 Ethical Considerations

These are the observed set of conduct when carrying out a research project in order to determine the unacceptable and acceptable code of behaviors.

3.8.1 Informed Consent

Informed Consent involves a voluntary agreement to take part in research. Getting consent involved informing the participant about their rights, the objective of the study, the processes to be undergone, and the involved risks and benefits of taking part in the study. To ensure that the study complies with the ethical issues pertaining research undertaking, a permission to conduct the research was sought from the respective authorities. A letter of introduction was obtained from the University to serve as evidence of the purpose of the study.

3.8.2 Confidentiality

Confidentiality is the condition in which the researcher knows the requirement of a research objective, but takes steps to protect that identity from being disclosed to others. This provides the respondent with the courage to provide answers without fear. A full disclosure of all the activities concerning the study was explained to the authorities and this involved the study intention which was only for learning purposes.

3.8.3 Privacy

Privacy for research respondent is a concept in research codes and ethics which provides that a person in any research subject has the right to privacy when taking part in a research. This provides them with the assurance that their personal view was not be disclosed. A high level of confidentiality and privacy was and the findings of the study were only to be submitted to the Management University of Africa and Chandaria Industries Limited.

3.8.4 Anonymity

Anonymity of data makes sure that the information recorded can never be linked to the respondent who provided it. In respect for the informants and in order to protect them from abuse resulting from the data they give for the research; data was presented in such a way that it did not link to individuals who gave it except by the researcher who might have need to seek clarification during analysis of data.

3.9 Chapter Summary

The chapter presented the research design, target population, sample and sampling procedures, research instrument, pilot study, data collection procedures, data analysis and presentation and finally ethical consideration.

CHAPTER FOUR

DATA ANALYSIS, DISCUSSION AND INTERPRETATION

4.0 Introduction

This section covered the demographic findings, analysis of specific objectives, interpretation and discussion of results, limitation and finally chapter summary.

4.1 Response Rate

The study sought to investigate impact of material handling on profitability of organization. The sample size of the study was 61 respondents and the study collected data from all the sampled respondents. This represented a 100% response rate. This chapter presents the analysis of data and presentation.

4.2 Finding of the Study

4.2.1 Demographic Data of the Respondents

The study aim to establish the general information of the respondents targeted for the study. The study sought to find out the gender, level of education and working period respondents.

4.2.1.1 Gender of Respondents.

The figure below shows the gender of respondents.

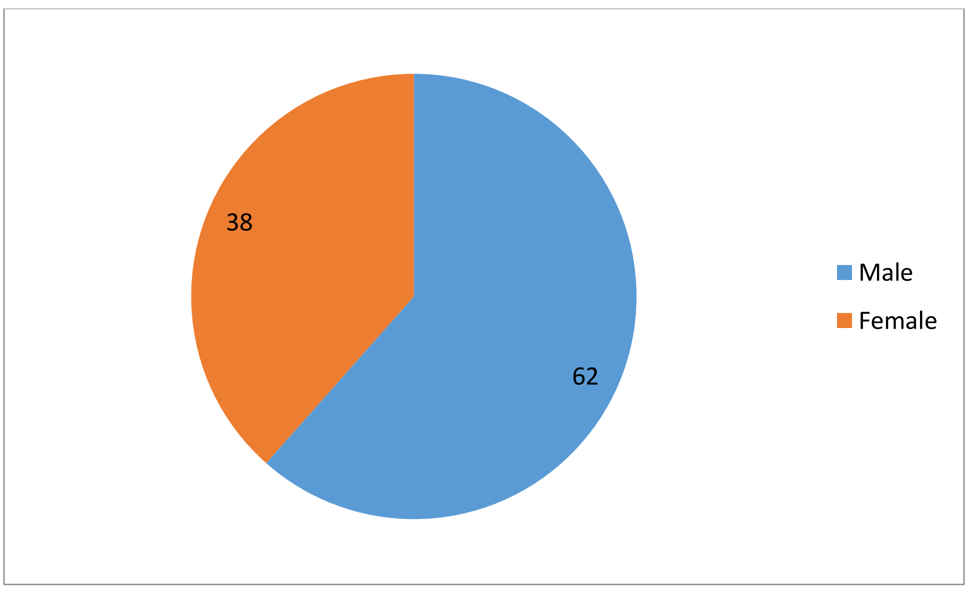

Figure 4.1: Gender of the Respondents

The study findings on gender indicated that 59% (36) were male as opposed to 41 (25) females who work in the insurance companies. This implies that majority of the respondents were male and the study collected data from both genders

4.2.1.2 Level of education

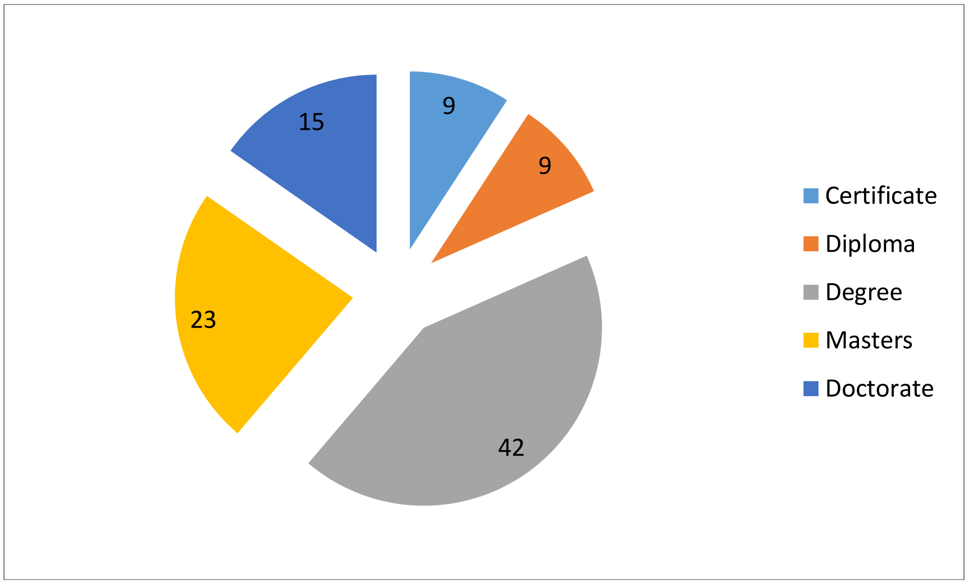

Figure 4.3: Showing the Level of Education of the Respondents

The study results on level of education revealed that the majority workers were those who had degree with 52% (31), followed masters with 25% (15),14% (9) for doctorate and lastly diploma and certificate with 9% (6). This implies that majority workers had degree. This implies that the respondents were learned people and therefore gave a true and fair view of answers to the study.

4.2.1.3 Length of Service by Respondents

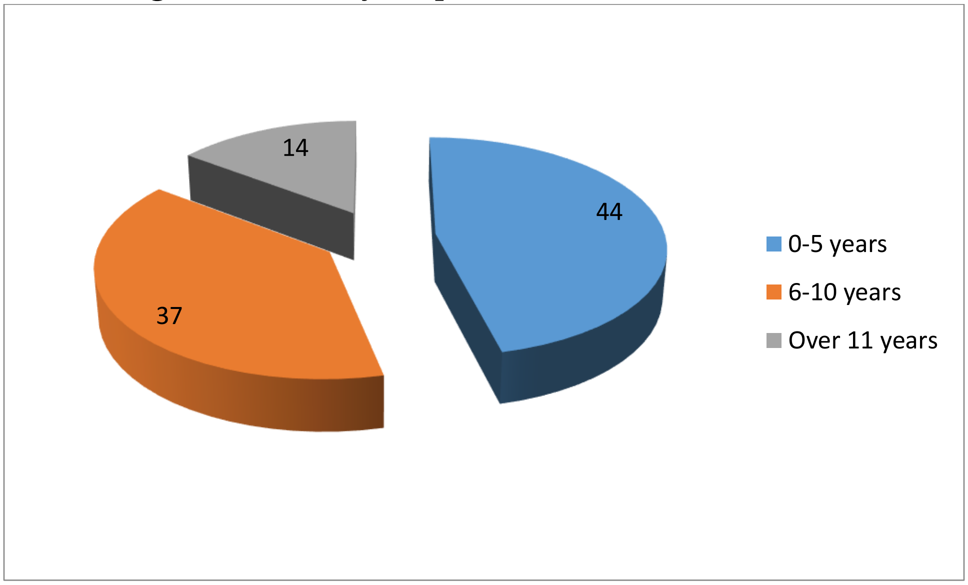

Figure 4.4: Showing the length of Service of the Respondents

The study findings indicated that 48 %(29) of the respondents had worked for less than five year, 39 %(24) had worked for between 6-10 years while 14% (8) had worked in the worked for more than ten years. This gives the implication that more employees have worked for a period of less than 5 years.

4.2.2 Analysis of Specific Research Question

The study sought to establish impact of material handling on profitability of organization. The study was conducted in Chadaria Industries Limited. The study focused specifically on the material storage, inventory management, production planning and delivery procedures on organizational profitability. The results were as follows;

4.2.2.1 Material Storage and Profitability of an Organization

This study sought to establish effect of material storage on profitability of an organization; the study results were as follows;

Table 4.1: Material Storage and Profitability of an Organization

Statements		SD	D	N	A	SA	TOTAL	MEAN	%MEAN	SD
Suitable storage location improves durability	F	3	4	10	25	18	61	3.86	79.6	1.14
	%	6	8	14	40	33	100			
The arrangement layout of	F	13	7	5	20	16	61	3.27	65.4	1.52

goods improves efficiency in stock staking	%	21	13	10	29	27	100			
Advanced storage equipment ensures goods last longer hence avoiding losses as a result of damage and spoilage	F	12	7	6	20	16	61	3.31	66.2	1.49
	%	19	13	11	28	27	100			

The study results revealed that 79.6% (mean=3.86) of the respondents were of the view that suitable storage location improves durability, 65.4% (mean=3.27) were of the opinion that the arrangement layout of goods improves efficiency in stock staking, 66.2% (mean=3.31) advanced storage equipment ensures goods last longer hence avoiding losses as a result of damage and spoilage.

Majority of the respondent were of the view that suitable storage location improves durability. This implied that the convenience of the storage impacted the duration that goods lasted hence conducive environment and availability of enough space affected how long the goods lasted.

According to study by Crum & Palmatier (2012) on whether material handling depends largely on storage, it agrees with the findings that material storage in term of sufficient location resources and application of different skills in material arrangement in the warehouses influences their durability.

4.2.2.2 Inventory Management and Profitability of an Organization

This study sought to establish the impact of inventory management on profitability of an organization; the study results were as follows;

Table 4.2: Inventory Management and Profitability of an Organization

Statements		SD	D	N	A	SA	TOTAL	MEAN	%MEAN	SD
Appropriate stock tracking ensures accountability	F	18	4	5	23	11	61	2.85	57	1.54
	%	35	8	10	34	14	100			
Accurate stock taking ensures proper bookkeeping which eventually leads to monitoring financial progress	F	7	3	5	27	19	61	3.67	73.4	1.32
	%	13	5	9	42	28	100			
Reorder point ensures stock is constant and goods supply is efficiency	F	19	5	8	19	10	61	2.73	54.6	1.54
	%	37	10	12	29	14	100			

The study results revealed that 57% (mean=2.85) of the respondents were of the view that appropriate stock tracking ensures accountability, 54.6% (mean=2.73) were of the opinion that accurate stock taking ensures proper bookkeeping which eventually leads to monitoring financial progress, 68.8% (mean=3.44) of the responses were of the opinion that reorder point ensures stock is constant and goods supply is efficiency.

The majority of the respondent were of the view that reorder point ensures stock is constant and goods supply is efficiency. This implied that through the orderly stock taking there was close monitoring of opening and closing stock hence restocking was done immediately to avoid shortage.

According to study by Donald and Douglas (2003) on how does inventory management in an organization affect performance, the study concurred with my finding that inventory management is a major factor that will enhance good performance or degrade the levels of performance efficiency. Noting suitable ways to coordinate when passing or receiving information about the available stock is vital in promoting continuous production and monitoring fast moving products.

4.2.2.3 Production planning profitability of an organization

This study sought to establish the impact of production planning profitability of an organization; the study results were as follows;

Table 4.3: Production planning profitability of an organization

Statements		SD	D	N	A	SA	TOTAL	MEAN	% MEAN	SD
Resource allocation during production has a great impact on the final output	F	10	6	6	20	19	61	3.73	66.6	1.33
	%	10	12	12	31	37	100			
Delegation od duties in term of specialization ensures smooth production process	F	7	8	9	20	17	61	3.54	70.8	1.42
	%	14	14	11	28	32	100			
Proper administrative technique enhances proper utilization of production resources	F	10	7	5	22	17	61	3.31	66.2	1.48
	%	19	14	10	33	25	100			

The study results revealed that 66.6% (mean=3.33) of the respondents were of the view that resource allocation during production has a great impact on the final output, 70.8% (mean=3.54) were of the opinion that Delegation od duties in term of specialization ensures smooth production process, 66.2% (mean=3.31) of the responses were of the opinion that Proper administrative technique enhances proper utilization of production resources.

The finding of the study indicated that majority of the responded agreed with the statement that resource allocation during production has great impact on the final output. This implied that division of resource among different production department influenced the final product quality and quantity which in term affected profitability.

These findings agree with the study done by Wassenhove (2012) that production planning enhances organizational performance; if workers can specialize in area they are good at in their work then the organization performance would increase highly because of commitment in their allocated field.

4.2.2.4 Deliveries Procedures and Organization Profitability

This study sought to examine delivery procedures effect on profitability of an organization; the study results were as follows;

Table 4.4; Deliveries Procedures and Organization Profitability

Statements		SD	D	N	A	SA	TOTAL	MEAN	% MEAN	SD
Communication efficiency enhances effective delivery	F	7	5	7	19	23	61	3.62	72.4	1.40
	%	13	9	13	28	34	100			
Supply chain has great impact on delivery as it is affected by forces of demand and supply	F	14	6	8	17	16	61	3.27	65.4	1.57
	%	23	12	12	23	31	100			
Destination influences profit as a result of mileage	F	10	8	7	20	17	61	3.48	69.6	1.47
	%	17	10	13	27	33	100			

The study results revealed that 72.4% (mean=3.62) of the respondents were of the view that communication efficiency enhances effective delivery, 65.4% (mean=3.27) were of the opinion that supply chain has great impact on delivery as it is affected by forces of demand and supply, 69.6% (mean=3.48) of the responses were of the opinion that destination influences profit as a result of mileage.

The study revealed that majority of the respondent were of the view that communication efficiency enhanced effective delivery. This implied that accurate and timely passing of information between the supplier and the client eliminated the possibility of under/over delivering of ordered products. These findings agree with the study done by Gay, (2009) on how communication efficiency enhances supply chain. The study found that organizations fail due to lack of strategic communication plan.

4.3 Limitation of the study

Limitations are aspect of the study that might affect the results negatively (Mugenda and Mugenda, 2003). A major limitation was that the respondents found the study sensitive and become suspicious of its intention, perhaps assuming their responses may affect or interfere with their job positions. Therefore, this lead to altering or biased responses in relation to strategies adopted. In order to overcome this limitation, ethical considerations were completely adhered to, and respondents were assured of maximum confidentiality. This involved asking the respondents not to reveal their identity on the research instruments and also giving them a freedom to respond or not to respond to any questions on the instruments. The respondents were assured that any information they give was kept confidential and used for academic research only.

4.4 Chapter Summary

This chapter presented the demographical findings on gender, age and level of education, while finding of the specific objective was based on material storage, inventory management, production planning, delivery procedures and their impact on the profitability.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of findings

The study results revealed that 79.6% (mean=3.86) of the respondents were of the view that suitable storage location improves durability, 65.4% (mean=3.27) were of the opinion that the arrangement layout of goods improves efficiency in stock staking, 66.2% (mean=3.31) advanced storage equipment ensures goods last longer hence avoiding losses as a result of damage and spoilage. The study results revealed that 57% (mean=2.85) of the respondents were of the view that appropriate stock tracking ensures accountability, 54.6% (mean=2.73) were of the opinion that accurate stock taking ensures proper bookkeeping which eventually leads to monitoring financial progress, 68.8% (mean=3.44) of the responses were of the opinion that reorder point ensures stock is constant and goods supply is efficiency.

The study results revealed that 66.6% (mean=3.33) of the respondents were of the view that resource allocation during production has a great impact on the final output, 70.8% (mean=3.54) were of the opinion that Delegation od duties in term of specialization ensures smooth production process, 66.2% (mean=3.31) of the responses were of the opinion that Proper administrative technique enhances proper utilization of production resources. The study results revealed that 72.4% (mean=3.62) of the respondents were of the view that communication efficiency enhances effective delivery, 65.4% (mean=3.27) were of the opinion that supply chain has great impact on delivery as it is affected by forces of demand and supply, 69.6% (mean=3.48) of the responses were of the opinion that destination influences profit as a result of mileage.

5.2 Conclusion

Materials handling is considered to be a tool to optimize performance in meeting customer service requirements at the same time adding to profitability by minimizing costs and making the best use of available resources. The basic objective of materials handling is to ensure that the right item is bought and made available to the organization operations at the right time, at the right place and at the lowest possible cost. They stressed that without adequate planning for material resources, the overall performance of an organization may be crippled. Improvement in continuity of supplies with reduced lead times, reduction in inventories with reduced obsolescence and surplus, improvement in cooperation and communications with reduced duplication of effort, reduction in materials costs, improvement in quality control, improvement in status control, and quicker identification of problems are the main benefits of materials handling in organization.

5.3 Recommendations

Based on the findings; the study made the following recommendations;

1. Organization should ensure their storage location is sufficient and has the required weather condition to support the stored goods to avoid spoilage, also organization should formulate proper good arrangement in the warehouses to avoid damages.
2. The study recommended that organization should have a systematic inventory management procedures in order to take account of sales in order to make informed decision during the next phase of production.
3. The study recommended effective production planning guided by the forces of demand and supply in order to satisfy customer needs.
4. Finally the study recommended formulation of strategic delivery procedures in order to reduce the transportation cost where the study recommended bulk supply of good at a given time to reduce the overall cost.

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APPENDIX I: INTRODUCTORY LETTER

I am a student of The Management University of Africa. As a partial requirement of the coursework assessment, I am required to submit a research report on **THE IMPACT OF MATERIAL HANDLING ON PROFITABILITY OF AN ORGANIZATION: A CASE STUDY OF CHANDARIA INDUSTRIES NAIROBI.**

I would highly appreciate if you could kindly complete the Questionnaire to assist me collect data. Your information alongside others will help me in my research and will be used strictly for academic purposes and will be treated as confidential, therefore, do not write your name on the questionnaire.

Thank you in advance,

Yours faithfully,

ELIZABETH WAMBUI KARIUKI

APPENDIX II: QUESTIONNAIRE

Please give answers in the spaces provided and tick (.√) in the box that matches your responses to the questions where applicable.

SECTION A: Demographic and Respondents profile.

- Gender (Tick as applicable)
- Male ( )
- Female ( )
- What is your age bracket (Tick as applicable)
- Under 30years ( )
- 31-40 years ( )
- 41-50 years ( )
- Over 50 years ( )
- What is your working experience
- 0-5 years ( )
- 6-10 years ( )
- 11-15 years ( )

- 16 and above ( )
- What is your level of education?
- PHD ( )
- Masters ( )
- Degree ( )
- Diploma ( )s
- Others ( )

SECTION B: Material Storage

Kindly rate the extent to which you agree with the following statements on material storage impact on profitability?

KEY **5**: STRONGLY AGREE, **4**: AGREE, **3**: UNDECIDED; **2**: DISAGREE; **1**: STRONGLY DISAGREE

Statement	**5**	**4**	**3**	**2**	
Suitable storage location improves durability					
The arrangement layout of goods improves efficiency in stock staking					
Advanced storage equipment ensures goods last longer hence avoiding losses as a result of damage and spoilage					

Section C: Inventory Management

To what extend do you agree with the following statements regarding the effect of inventory management on profitability?

KEY **5**: STRONGLY AGREE, **4**: AGREE, **3**: UNDECIDED; **2**: DISAGREE; **1**: STRONGLY DISAGREE

Statement	5	4	3	2	1
Appropriate stock tracking ensures accountability					
Accurate stock taking ensures proper bookkeeping which eventually leads to monitoring financial progress					
Reorder point ensures stock is constant and goods supply is efficiency					

Section D: Production Planning

To what extend do you agree with the following statements regarding the effect of production profitability?

KEY **5**: STRONGLY AGREE, **4**: AGREE, **3**: UNDECIDED; **2**: DISAGREE; **1**: STRONGLY DISAGREE

Statement	5	4	3	2	1
Resource allocation during production has a great impact on the final output					
Delegation od duties in term of specialization ensures smooth production process					

Proper administrative technique enhances proper utilization of production resources					

SECTION E: Delivery Procedures

To what extend do you agree with the following statements regarding delivery procedures effect on profitability?

KEY **5**: STRONGLY AGREE, **4**: AGREE, **3**: UNDECIDED; **2**: DISAGREE; **1**: STRONGLY DISAGREE

Statement	**5**	**4**	**3**	**2**	**1**
Communication efficiency enhances effective delivery					
Supply chain has great impact on delivery as it is affected by forces of demand and supply					
Destination influences profit as a result of mileage					