

**MATERIAL MANAGEMENT AND PRODUCTION PERFORMANCE IN SELECTED
MANUFACTURING COMPANIES OF MOGADISHU SOMALIA**

**BY
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**A DISSERTATION SUBMITTED TO COLLEGE OF ECONOMICS AND
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UNIVERSITY**


AUGUST, 2024

DECLARATION

I, declare that this dissertation is my original work and has not been presented for a degree or any other academic award in any University or Institution of Learning.

24/08/2024.....

Date

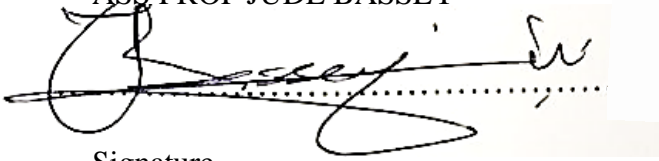
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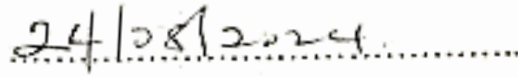
APPROVAL

I confirm that this dissertation is carried out by the candidate under my supervision is ready for submission to the board of examiners of University with Our approval.

ASS PROF JUDE BASSEY

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Signature

A handwritten date '24/08/2024' written in black ink over a horizontal dotted line. The date is contained within a light yellow rectangular box.

Date

DEDICATION

I dedicate my research to my parents for the support that they have provided me through my education journey; to my father and mother may Allah abundantly bless you.

ACKNOWLEDGEMENT

I express my sincere gratitude to the almighty Allah for the opportunities bestowed upon me during the research journey. My heartfelt appreciation extends to the individuals who provided unwavering support throughout the research endeavors.

I am deeply thankful to my parents for not only bringing me into existence but also for their consistent moral and spiritual support throughout my life. Special recognition is also extended to my siblings, friends, and relatives whose encouragement played a significant role in my research journey.

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Furthermore, I extend my gratitude to the respondents, particularly the HR manager and operations manager, whose coordination ensured the acquisition of essential information for the study.

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ABSTRACT

The study examined effect of material management on production performance in selected manufacturing companies of Mogadishu Somalia. The objectives of the study were to examine the relationship between material transportation and production performance, to determine the relationship between material storage and production performance and to examine the relationship between material controls and production performance in manufacturing companies of Mogadishu Somalia. Correlation and casual design was adopted in the study. The data collected was purely quantitatively from 121 respondents with the aid of the questionnaire. The analysis employed both descriptive and inferential statistics using mean and standard deviation and correlation analysis , the results show a positive relationship between material transportation and production performance, a positive material storage and production performance and finally a positive relationship between material controls and production performance. The study conclude that materials transportation is an avenue for enhancing the production performance therefore further contend that development of material transport systems is an icon to enhancing the production performance systems in manufacturing companies in Mogadishu Somalia, further more increased materials storage in the manufacturing company has a potential to generate production performance levels in the manufacturing companies. The study further implies that the material storage development if any can generate a functional performance of the production systems. Finally, the study concludes that material controls in the manufacturing companies are provided in the study, these findings indicate that there exists a significant avenue for the generation of the production performance. The study indicates that materials controls are an avenue in provision of information necessary for the realization of the performance development.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The study assesses the effect of material management and production performance in selected manufacturing companies of Mogadishu Somalia. The first chapter presents the background to the study, statement of the problem, research purpose, specific objectives, research questions, hypothesis, study scope, significance of the study and operation definition of key terms.

1.1 Background of the study

The study background was dimensioned into historical, theoretical, contextual and conceptual perspectives.

1.1.1 Historical Perspective

Since the mid-1980s the strategic benefits of inventory management and production planning and scheduling have become obvious. The business press has highlighted the success of Japanese, European, North American firms in achieving unparalleled effectiveness and efficiency in manufacturing and distribution. In recent years, many of the firms have 'raised the bar', yet again by coordinating with other firms in their supply chains. For instance, instead of responding to unknown and variable demand, they share information so that the variability of the demand they observe is significantly lower (Sharma, 2009).

Brooks and Wilson (2015) notes that manufacturing is becoming more and more competitive every day. Gaither and Frazier (2013) stated that "a country's borders no longer provide protection from foreign imports. Competition has become intense and is increasing". For years, large and small manufacturing companies have been searching for ways to stay ahead of their competitors. Organizations can improve their competitiveness through gaining an understanding of their inventory levels and implementing processes to reduce these levels (Brooks and Wilson, 2015). Companies must strive to reduce inventory levels. By reducing inventory levels, businesses were experience benefits that show up directly on the bottom line. In many manufacturing firms, fewer inventories equate to less money tied up and can enable funds to be allocated to other improvement like customer satisfaction. It is expected that a company that implements good inventory management and cycle counting practices will report significant

increases in inventory accuracy, which in turn lead to reduced inventory levels and improved on-time delivery to customers

Globally, traditional supply chains consist of manufacturers, who process, assemble and sell products to customers. Once the product has been sold, the ownership of the product is transferred on to the customer to satisfy the customer needs (Greene, 2010). Typically after a possible warranty period, the repair, maintenance and eventual disposal of the product is then the responsibility of the customer. The reverse processing activities of inspection, parts remanufacturing, and materials recycling can substantially reduce the material and energy consumed by producing goods. Although these activities have a beneficial environmental impact, customers fail to participate in the remanufacturing efforts by producers or third parties because they often lack incentives hence this reduces customer satisfaction (Hulburt, 2003). Remanufacturing has received tremendous attention from companies over the last few decades. Although one side of the coin is to extend the life of used products and achieve a sustainable environment, there is an economic aspect to it that is attractive. A lot of companies seem to be making huge profits in the remanufacturing business today (Mutwol, 2017). But, one thing that drew so much attention to remanufacturing in the past few decades is the quality of the final product. Some time back in the 1950s in USA, the manufacturing firms were faced with maintaining good inventory management practices and so this had an effect on customer satisfaction.

Africa has witnessed a serious increment in the production performance and need to heighten their performance with materials management being seen as a driver for the production performance. Many companies in Uganda, Kenya, Somalia that adopt remanufacturing rely on return of used products from the customers to process them to 'as good as new' condition. Providing product-based services, termed as servicizing, is a strategy in which the producers provide the use and maintenance of products while retaining ownership and the prospective customers, or clients, pay the money to receive the services of products. This strategy minimizes repeatedly buying and disposing of the products. Providing product-based services requires the producer to extend its responsibility for the product both during and after the use phase. In Somalia inventory management has enabled firms to have adequate quantities of high quality

items available to serve customer needs, while also minimize the costs of carrying inventory (Brigham & Ehrhard, 2015). However, managing these inventories in order to achieve their objectives has posed a great challenge to the firms.

For Somalia, there has been very inadequate previous studies taken on business growth especially after COVID-19 (Osman, 2020) and this could be attributed to the political turmoil which hit the country years ago. For Somalia, “the legacy of underdevelopment and war, large-scale population displacement, a modest resource base, and lack of diplomatic recognition, it has been the site of impressive levels of economic recovery and activity since 1991 (World Bank Group, 2019). Manufacturing sector performance in the Somali manufacturing sector is greatly in existence and has significantly provide an aspect of control and direction aimed at enhancing the production performance. Production performance in the organizations in Somalia remains generally low with insignificant manufacturing plants existing in the country. According to the Somalia Economic Update (2018), “weather-related shocks have led to land degradation, low agricultural productivity, livestock mortality and forced displacement affected the poor communities and depleted their ability to cope.” Somali women are particularly vulnerable as most of them have turned out to be bread winners. The current monetary challenges in Somalia’s manufacturing system has been production constraints especially the production sales and production levels being generally underperforming, faces that are coupled with high levels of inflation; shortage of women financial security correlate with their inability to carry out resilient entrepreneurship.

1.1.2 Theoretical Perspective

The theory of constraints commonly referred to as (ToC) was developed by Goldratt (1990a) The theory mostly aims at initiating and executing advanced improvement by looking on a need that prevents a system from achieving a higher degree of performance. The Theory of Constraints is a methodology for identifying the most important limiting factor (i.e., constraint) that stands in the way of achieving a goal and then systematically improving that constraint until it is no longer the limiting factor. In manufacturing, the constraint is often referred to as a bottleneck. The Theory of Constraints takes a scientific approach to improvement.

The core concept of the Theory of Constraints is that every process has a single constraint and that total process throughput can only be improved when the constraint is improved. A very important corollary to this is that spending time optimizing non-constraints was not provide significant benefits; only improvements to the constraint was further the goal (achieving more profit). Goldratt and Cox (1992), as the owner of a framework, you are required to determine its goal. Most business aspects have as their primary goal the generation of cash now and in the future. Important requirements that must be satisfied for the framework to continue to function may be set out by different stakeholders. The Theory of Constraints (ToC) tries to develop creation throughput performance or framework by and large performance estimated through pay through the recognizable proof of those practices that are compelling the assembling gadget (Goldratt, 2004). The Theory of Constraints includes a sophisticated problem solving methodology called the Thinking Processes.

1.1.3 Conceptual Perspective

Materials management (MM) encompasses all operations management activities from raw materials acquisition through the manufacturing processes to the delivery of the final products. It is a coordinating function, responsible for integrated approach towards the management of materials in an industrial undertaking. International Federation of Purchasing and Materials Management (IFPMM, 2014) defined MM as a total concept having its definite organization to plan and control all types of materials, its supply, and its flow from raw stage to finished stage so as to deliver the product to customer as per his requirements in time. Inventory control, material requirement planning and control (MRPC), purchasing, storage, just-in-time (JIT), ergonomics, standardisation, simplification, specification, value analysis, are some of the activities of MM. Materials, which include stock of raw materials, work in progress (WIP), finished goods as well as other supplies and defined as industrial goods that was become part of another physical product are the vital spark of any manufacturing concern and as such no industry can operate without them (Kontuš, 2014). Materials management in this study is measured through material transportation material Storage and material controls.

Material transportation: Material transportation is defined as the activities involved in shipping any goods or finished products from suppliers to a facility or to warehouses and sales locations (Kenyon & Meixell, 2011). It was included because it was a major part of the supply chain due to its power to add value to some goods by moving them from their current location to a more advantageous location (Laird, 2012). Through research, (Hofenk, Schipper, Semeijn & Gelderman, 2011) transportation had been found to be a major factor in logistics processes as it was the one which joined the separated activities. It was the most important economic activity among the components of business logistics systems.

Material Storage: Material Storage has been defined as the effective process of handling and storing goods in proper conditions to ensure their safety and availability for use when needed (Dipali & Mane, 2016). The key purpose of warehousing management is basically to store materials as they arrive at one point and forwarding them when needed. It is also crucial to know the exact number of products that can be stored in the warehouse

Material controls: According to Kafyetta (2016) material control is a arrangement that systematizes all inventory management activities. These systems are described to integral successfulness of any business organization and are principally used to proficiently capture stock movements using both hardware and software gears in supply chain

The dependent variable is production performance: Production performance is the capacity of a system to meet demand for deliveries or performance. In this case, the production availability, deliverability or other appropriate measures can be used to express production performance. Lebens and Euske (2006) define performance as a measure of monetary and non-monetary pointers that indicate evidence about the grade of achievement of the organization's objectives. In most studies, performance measurement has been limited to a financial perspective, leading to various restrictions like emphasis on the internal factors of the company and overdue accessibility of performance-related information.

1.1.4 Contextual Perspective

In Somalia more than 50 percent of Manufacturing companies fight an uphill battle from the start and fail in the first five years. This is a common scenario for Somalia's manufacturing companies, as most of them 'never celebrate their first anniversary. However, in every year, for over 10,000 people who start a manufacturing company, 40% fail within a year. This is attributed to poor managerial training and experience whereby many manufacturing company owners or managers have poor managerial training and inadequate experience, poor infrastructures, technological change, lack of sufficient market information poses a great scanty markets information (Ndambuki, 2013). Many owners of the manufacturing companies do not plan for their cash requirements. They have slow cash inflow generation procedures with high rate of cash outflow, limited skills of handling cash balances and do not strategically invest surplus cash.

Graman and Magazine (2016) argued that many of manufacturing companies owners do not understand the significance of proper handling of suppliers and tend to believe that the company was get better on its own. There is a low financial performance of manufacturing companies in Mogadishu Somalia. Manufacturing companies face constraints in the availability of production inputs. For instance, better quality raw materials are generally exported or are available only to larger firms and their suppliers tend to be oligopolies. Inadequate infrastructure and weak provision of basic services such as transportation, energy, urban planning and production sites represent particular impediments for manufacturing companies in Mogadishu Somalia (Ondieki & Oteki, 2014).

The Somali economy rebounded by 2.9 percent in 2021, following a COVID-19-related contraction in 2020, but challenges weigh heavily on growth this year. Growth in 2021 was largely driven by household consumption and private investment, supported by robust remittance inflows and credit growth. The recovery in aggregate demand led to a strong rebound in imports (Primarily construction and medical equipment), and, together with a fall in budget grants, contributed to a wider current account deficit (17.1 percent of GDP) (World Bank, 2021). However, economic activity has slowed down notably in recent months on the back of the global

economic slowdown and the domestic drought conditions. Rising food and fuel prices increased annual inflation to 7.2 percent (eop) in September 2022. Somalia has been rebuilding state institutions and the economy since the end of the devastating civil war, with strong support from the international community. The civil war (1991–2012) led to complete state collapse, with tremendous loss of human and physical capital. Since the 2012 Provisional Constitution that created the Federal Government of Somalia (FGS) and the Federal Member States (FMS), Somalia has successfully undertaken three national elections. Most recently, Parliamentary and Presidential elections were completed in May 2022 (World bank, 2023). Somalia's efforts in rebuilding state capabilities have been strongly supported by international partners, including financing and extensive capacity development (CD) support (World Bank, 2020). The performances of the manufacturing sector in countries posit the environment in the existence of the stance of underperformance especially exhibited in the many years ago in the economy of Somalia. The manufacturing sector performance in Somalia is faced with profitability and sales performance constraints seriously hindering the operation welfare of the manufacturing sector in Mogadishu Somalia (Mogadishu Manufacturing Companies Report, 2022). The status of the performance of the manufacturing sector indicate the need for appropriate controls needed in performance of the sector calls for a study on effect of material management on production performance in selected manufacturing companies of Mogadishu Somalia.

1.2 Statement of the Problem

Manufacturing companies in Somalia tailor their efforts to meet usability and product functionality in order to attract the customers (Mohamud & Iask, 2019). Despite this, the state of production performance in the manufacturing sector of Mogadishu is still wanting, the products are significantly below average in terms of tangibility, reliability and assurances which has frustrated the performance of the manufacturing sector (World Bank, 2018). The production system in the country is coupled with closure of production plants as a result of increased cost due to overstocking or under stocking of goods, production delays as a result of insufficient or untimely access to materials and inaccurate planning and inventory shortages which has put the country on high degree of imports than manufacturing and these reduces the viability of the production system in the country, its effectiveness is doubted and the country continue to register performance constraints that reduce the viability of the country's operations and existence

((Mogadishu Manufacturing Companies Report, 2022). Materials are key inputs in the manufacturing process aimed at improving the operations efficiency of the banks, to generate coherence and performance execution in the manufacturing companies in Mogadishu Somalia (World bank, 2023). Based on the support of the manufacturing sector which heavily relies on materials/ raw materials making it difficult for the company to underperform, material management can hence have a profound effect on the production performance (Isak, 2021). Most manufacturing organizations in Somalia doesn't make use of effective planning, organizing, controlling and coordinating of their materials at their disposal before implementing them in order to achieve their desired goals. The side effect of this ineffective management of materials alongside others like automation has resulted in the unsatisfactory performance of the organizations that said, the status of the material management has an effect on the product quality, but without any study, this allegation is hard to prove hence a study on material management and production Performance in manufacturing companies of Mogadishu Somalia

1.3 Purpose of the study

The purpose of the study was to determine the effect of material management on production performance in selected manufacturing companies of Mogadishu Somalia

1.4 Objectives of the study

The study was guided by the following specific objectives:

1. To examine the relationship between Material transportation and production performance in manufacturing companies of Mogadishu Somalia
2. To determine the relationship between Material Storage and production Performance in manufacturing companies of Mogadishu Somalia
3. To examine the relationship between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

1.5 Research Questions

The study was guided by the following research questions:-

1. What is the relationship between Material transportation and production performance in manufacturing companies of Mogadishu Somalia?

2. What is the relationship between Material Storage and production Performance in manufacturing companies of Mogadishu Somalia?
3. What is relationship between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

1.6 Research Hypothesis

The study tested the following hypotheses:

Ho₁: There is no a statistically significant relationship between material transportation and production performance in manufacturing companies of Mogadishu Somalia

Ho₂: There is no a statistically significant relationship between material Storage and production Performance in manufacturing companies of Mogadishu Somalia

Ho₃: There is no a statistically significant relationship between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

1.7.0 Scope of the study

The scope of the study was categorized as geographical, content and time scope. They are;

1.7.1 Geographical Scope

The study was conducted in Mogadishu the largest city in Somalia, and its nominal capital. Mogadishu lies on the historically important Indian Ocean Benadir coast, and the city has served as an important regional port for centuries. Mogadishu is located at 2°4' North, 45°22' East (2.06667, 45.36667). The city is chosen because it has experienced production performance constraints in the last three years with the employee output and quality being significant.

1.7.2 Content Scope

The study determined the effect of material management in terms of transportation, material storage and material controls on production performance in selected manufacturing companies of Mogadishu Somalia. The focus of the study was to determine the effect of the material management in enabling the production performance for the companies in Mogadishu.

1.7.3 Time Scope

The researcher focused on the time period 2018-2022 because it is during this time period when the production performance in the manufacturing companies of Mogadishu showed significant reduction with it declining despite the existence of materials management in the companies.

1.8 Significance of the study

The question of materials management and common exposures are clearly of enormous importance for regulators, industry participants and investors. The results of this research could have implications and importance to various stakeholders as follows:

The study could help the organization because it highlights materials management methods that need major emphasis as regarding performance of an organization

To investors, this study might help them to understand the factors that influence the returns on their investments through production performance needed in ensuring the performance of the organizations.

To various organizations, this report might provide an insight into the materials management attributes which may need to be incorporated in their investment in the organization. This could inform the study on the different approaches that the organization can device in enabling its performance excellence.

The study may also provide a contemporary cornerstone for implementation of more materials management practices for improved production performance.

1.9 Operational Definitions of terms

International Federation of Purchasing and Materials Management (IFPMM, 2014) defined MM as a total concept having its definite organization to plan and control all types of materials, its

supply, and its flow from raw stage to finished stage so as to deliver the product to customer as per his requirements in time.

Material transportation: Material transportation is defined as the activities involved in shipping any goods or finished products from suppliers to a facility or to warehouses and sales locations (Kenyon & Meixell, 2011). It was included because it was a major part of the supply chain due to its power to add value to some goods by moving them from their current location to a more advantageous location (Laird, 2012).

Material Storage: Material Storage has been defined as the effective process of handling and storing goods in proper conditions to ensure their safety and availability for use when needed (Dipali & Mane, 2016). The key purpose of warehousing management is basically to store materials as they arrive at one point and forwarding them when needed.

Material controls according to Kafyetta (2016) is an arrangement that systematizes all inventory management activities. These systems are described to integral successfulness of any business organization and are principally used to proficiently capture stock movements using both hardware and software gears in supply chain

Production performance is the capacity of a system to meet demand for deliveries or performance. In this case, the production availability, deliverability or other appropriate measures can be used to express production performance (Lebans and Euske, 2006)

Materials Management: This is the planning, directing, controlling and coordinating activities which are concerned with materials and inventory requirements from the point of their inception to their introduction to the manufacturing process.

Out Put: The amount of Something Produced

Sales Volume: The number of units sold within a reporting period.

Holding Costs: This the cost incurred in keeping or storing materials before they are used for either sale or production purposes.

Carrying Cost: This is the cost of transportation or carrying the product or service from the purchased area to the production unit of a company.

Reorder Point is the level at which a company makes order for purchasing the inventory or materials needed by the company to facilitate them in the production processes of the company.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the theories guiding the study and the literature related to the study variables. The literature is based on the objectives of the study whereby the researcher presents what other scholars have written on materials management and how they affect the production performance while identifying the research gaps which this study seeks to bridge. Literature sources include journals, text books and other publications.

2.1 Theoretical Review

Theory of Constraints

The theory of constraints commonly referred to as (ToC) was developed by Goldratt (1990a) The theory mostly aims at initiating and executing advanced improvement by looking on a need that prevents a system from achieving a higher degree of performance. According to the Theory of Constraints, every business should have a single requirement.

The Theory of Constraints is a methodology for identifying the most important limiting factor (i.e., constraint) that stands in the way of achieving a goal and then systematically improving that constraint until it is no longer the limiting factor. In manufacturing, the constraint is often referred to as a bottleneck. The Theory of Constraints takes a scientific approach to improvement. It hypothesizes that every complex system, including manufacturing processes, consists of multiple linked activities, one of which acts as a constraint upon the entire system

The core concept of the Theory of Constraints is that every process has a single constraint and that total process throughput can only be improved when the constraint is improved. A very important corollary to this is that spending time optimizing non-constraints was not provide significant benefits; only improvements to the constraint was further the goal (achieving more profit). Thus, TOC seeks to provide precise and sustained focus on improving the current constraint until it no longer limits throughput, at which point the focus moves to the next constraint. The underlying power of TOC flows from its ability to generate a tremendously

strong focus towards a single goal (profit) and to removing the principal impediment (the constraint) to achieving more of that goal. In fact, Goldratt considers focus to be the essence of TOC.

Goldratt and Cox (1992), as the owner of a framework, you are required to determine its goal. Most business aspects have as their primary goal the generation of cash now and in the future. Important requirements that must be satisfied for the framework to continue to function may be set out by different stakeholders. The Theory of Constraints (ToC) tries to develop creation throughput performance or framework by and large performance estimated through pay through the recognizable proof of those practices that are compelling the assembling gadget (Goldratt, 2004).

According to Kazim (2008), it is important to raise and regulate limits in order to support the concept of limits. The required items are as follows, Lead times are too long, orders are not fulfilled, and unusable or related inventory is often lost, high degree of critical orders and travel, high degree of decentralization, loss of key customer involvement and all non-appearances of controls identified in normal changes or demand orders lead to on-time conflicts of sources (Goldratt, 2004). According to this theory dairy processors need to use materials management practices to avoid shortages. The Theory of Constraints includes a sophisticated problem solving methodology called the Thinking Processes. The Thinking Processes are optimized for complex systems with many interdependencies (e.g., manufacturing lines).

Agency theory

In the agency relationship, one party the principal delegates work to another party the (agent) (Eisenhardt, 1989) to compensate the lack of expertise or to focus on the core competencies. When the agent is acting for the principal, it resembles behaviors such as performing for the benefits of the principal acting as the principal's representative or employees. According to (Eisenhardt, 1989) while profit maximization approach and self interest persist “ The focus of the agency theory centers on determining the most effective contract govern why the principal's agent relationship. The notion of the contract is used here as a metaphor to describe the agency relationship and is designed based on the outcome or behavior such as salaries of the agent (materials management departments).

Material flow theory (MF)

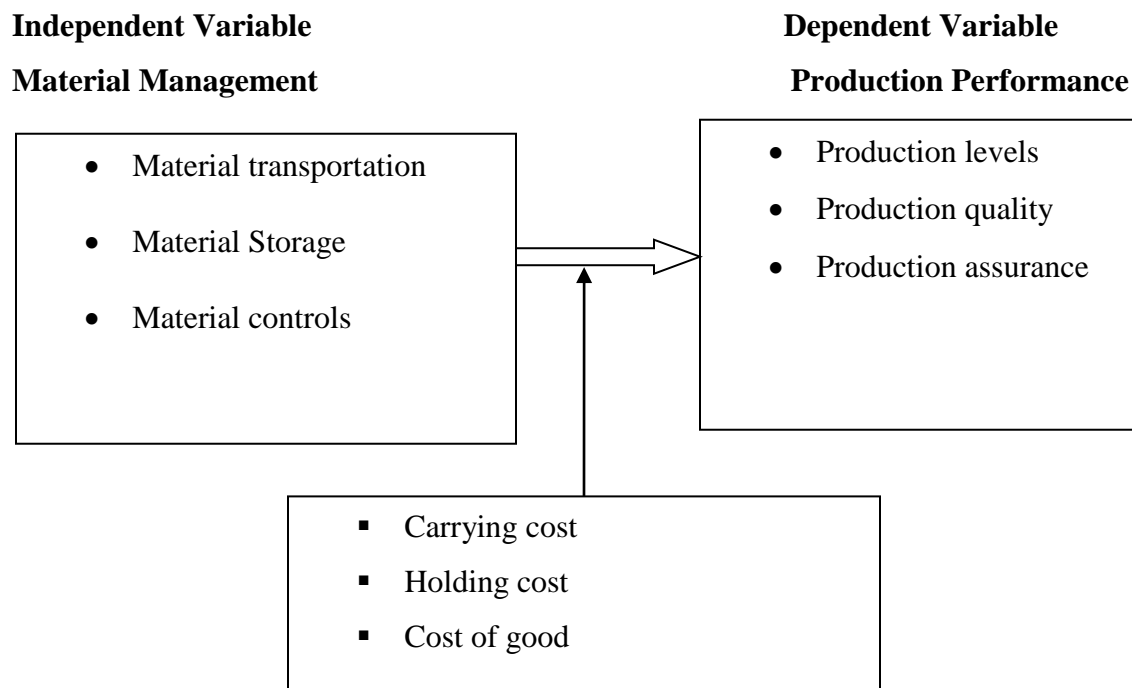
Material flow theory (MF) developed by Shoubo Xu in 2008. MF is the collective term for the flow of microscopic goods and that of microcosmic substances. The material flow is not only an economic phenomenon but also a social and natural one. The economic materials flow is the core of the MF and the social and nature of the MF is the basis for the MF. No matter whether in nature, society or economic sources, the MF comprises of the five basic elements of material flow, owner, region and time.

Among which material is core , MF can be applied to the national economy in the most effective way with fundamental purposes to benefit the economy through efficient and effective production. It's the backbone in industry group flow capacity are proposed to be used as the main attribute of the flows.

2.2 Conceptual Framework

In the study the Materials management and production performance was taken as independent variable while performance was taken as dependent variable. Performance was measured in terms of production levels, production quality and production assurance.

Figure 1: Conceptual framework



Source: Ngei and Kihara (2020) and Odhiambo (2021) and Modified by researcher 2024

2.3 Literature Review

2.3.1 Material Transportation and Production Performance

According to Musau, Namusonge, Makokha and Ngeno (2017), a textile manufacturing firm's profitability, dependability, cost, responsiveness, flexibility and asset management efficiency were all affected by the transport management of their supply chains. The researcher employed convergent parallel mixed-methods techniques to arrive at his conclusions. 196 respondents were selected from Nairobi County's acquisition offices and department heads of 15 textile manufacturing industries. This was the size of the sample. There were 139 responders to the survey. The examination reasons that transport the board have the capability of emphatically affecting production network performance of Textile firms and hence perceive the significance of transport the executives in the production network.

In their study to investigate the distribution routes and supply chain performance: New KCC Eldoret, Chesusio and Makokha (2019) aimed at investigating how product productivity impacts supply chain performance in the New KCC, the study set out to determine how product productivity impacts supply chain performance. In this study, an expressive examination plan was used as part of the study's methodology. There were 84 participants in the research, who came from different departments within the business. Questions with open and closed ends were included in self-administered surveys. Using both descriptive and inference statistics, the study concluded that supply chain performance is strongly influenced by the supply chain. In order for the business to survive, the essential diversification of the corrugated board cycle for passing the finished product from the manufacturer to the end customer is necessary

According to a survey by Patlins (2019), today we take an ideal approach to reducing shipping costs and time, enabling customers to perform accurate shipping of fresh food and serve them. We conclude that design is important. Requirements to meet the forwarder's competent transport. Companies need to reduce the cost, fuel consumption and driving time of variable and billing vehicles. Product packaging also affects the outcome of the shipping process. Retailers want to get short-lived products that aren't difficult to adjust, aren't exorbitantly expensive, and aren't possible to pack or handle, yet maintain shelf capacity. In addition, packaging, product safety, and vehicle stacking time also affect the criteria for transport productivity.

Kithiia (2019) conducted a study on Maersk Kenya Limited, a logistics firm to examine effects electronic logistics has on the performance of logistics firms. Using a sample of 75 individuals drawn from 107 employees of the firm, the study revealed that e-logistics influenced performance of logistic firms positively.

Muchori (2019) analyzed the effect of congestion in the road traffic on freight logistics efficiency at the port of Mombasa. Building on the infrastructural pressure on the road from Nairobi to Mombasa which has continued to put strain logistics operations at the port, the study employed a descriptive survey design and used a sample size of 150 respondents from a possible 10450 employees. The correlation results revealed that traffic congestion had a positive correlation with transport cost. Consequently, traffic congestion impacted negatively on efficiency of freight logistics.

Mukolwe and Wanyoike (2020) assessed how management practices used in logistics affect operational efficiency in Mumias Sugar Company. Using descriptive and inferential statistics, the study revealed among other findings that transport management and the practices used for physical distribution are synonymous with the flow of raw materials and goods that is cost effective which impacts positively on operational efficiency.

Mwangangi (2020) examined the influence logistic management has on performance of manufacturing firms. The study used both primary and secondary data drawn from employees of the firms and published and unpublished records. Using multiple regressions analysis, the study revealed that transport management by use of transport management systems was a significant predictor of firm performance

Gitahi and Ogollah (2020) investigated how practices used to manage fleet influence service delivery to refugees under the UNHCR Kenya program. The study builds on the premise that transportation is central to logistics. The study used the descriptive research design and targeted 390 employees. From the sample of 117 who participated in the study, it was concluded that the rate of fuel consumption on tracking, fuel monitoring, fuel sourcing, fuel allocation on a day to

day basis, and the rate at which fuel usage is monitored influence delivery of services to refugees in the UNHCR program in Kenya.

Ndubi, Iravo and Onchiri (2021) examined the effect variability in lead times has on the performance of inbound logistics at Safaricom Limited. Using linear regression model, the study identified lead times in terms of production, shipping, the TAT time for customs brokerage, and the velocity for inspection of goods as having direct and significant effects on the performance of inbound logistics measured in terms of delivery time, cost and quantity. Although much literature exists regarding transport and logistics management and its benefits, most studies focus mainly on the logistics component. Besides, no literature exists showing how transport management for instance directly impacts on the performance of supply chain of firms in the textile sector.

The influence of human capital on organizational performance has also been investigated. Odhoni and Omolo (2020) focused on analyzing the effect the investment in human capital has on organizational performance from a pharmaceutical perspective. Using the inferential tests of association, the study revealed that organizational performance was associated with investment in quality, relevance, and reliability in the human capital. Kinyua-Njuguna, Munyoki and Kibera (2014) while focusing on internal organizational environment in the context of community-based organizations specializing in HIV and AIDS, established that the organization's internal environment tends to impact on relevance, efficiency and effectiveness of organizations.

Mogere, Oloko, and Okibo (2021) discovered a good relationship between the usage of material requirements, distribution planning, and vendor-controlled inventory and operational efficiency and organizational performance. As a case study, the research was conducted at the Gianchore tea facility in Kenya. Its goal was to evaluate inventory control systems impacts functioning routine in the tea business by employing a designed questionnaire as a information collection tool and regression data analysis

In the same vein, Mwangi and Nyambura (2015) did a study in the context of companies involved in Kenyan food processing sector. The focal point of the study was to examine the role inventory management plays in the performance of these companies. This study, like Mwangi and Nyambura (2015), used a descriptive research approach and multiple regression data analysis. According to the findings, the essential features of inventory management that had a vital impact in improving the performance of food processing industries were maintenance of production, controlling cost, declining loss record, and constant supply.

Ngei and Kihara (2022), on the other hand, aimed to determine the impact of inventory control on the efficiency of gasoline manufacturing enterprises in Nairobi City County. The study used both primary and secondary data and they were analyzed using multiple regressions. The reported results from the study were that Vendor Managed Inventory (VMI), Enterprise Resource Planning (ERP), Radio Frequency Identification (RFID) and e-procurement significantly predicted performance of gas firms in the Kenya.

Atnafuand Balda (2018) empirically examined the impact of inventory management practices on firms' competitiveness and organizational performance in micro and small enterprises in Ethiopia. The study included a sample of 188 micro and small businesses (MSEs) working in the manufacturing subsector, from which data for this study were acquired. The results from the study indicated that higher levels of inventory management practice can lead to an enhanced competitive advantage and improved organizational performance. Also that, a competitive advantage can have a direct, positive impact on organizational performance.

Otuya and Eginwin (2021) analyzed the effect of inventory management practices on profitability of SMEs in Nigeria. The study used a descriptive research design and the population consisted of all SMEs operating in Delta State. Multiple regression analysis of the data indicated that inventory turnover has a substantial positive link with the financial success of SMEs. The study also found a negative association between inventory conversion period and profitability, as well as no significant positive relationship between inventory leanness and profitability. Overall, the study concluded that inventory management plays a significant role in a firm's corporate

financial performance; thus, firms' inventory systems should maintain proper inventory levels to improve profit and reduce inventory costs associated with holding excess stock in warehouses

Another study was by Wangari and Kagiri (2019) which sought out find out the influence of inventory control management practices at Safaricom Kenya Ltd on its competitiveness edge in the market. The drop and pick questionnaires from respondents' method were used to collect data which were analyzed through multiple regression analysis technique. According to the findings of the study, inventory venture, inventory shrinkage, and inventory incomings were important forecasters of competitiveness in Safaricom Ltd and organisational effectiveness in the Kenyan market.

2.3.2 Material Storage and production Performance

Kisioya and Moronge 2019 Materials storage and Performance in Manufacturing Organizations and Companies in Kenya were studied in their study. In Nairobi, 355 big industrial businesses in Kenya were studied in a descriptive research approach. They selected 188 large-scale industrial businesses in Nairobi using stratified random sampling. Using well-structured questionnaires, primary data was obtained. As responders, we used all of the general managers from the selected businesses. They were then coded, put into SPSS and analyzed. Both descriptive and inferential statistics were used in the study of the data. According to the findings of the study, most material storage have a favorable impact on the performance of the organization or any manufacturing businesses in Kenya

Nsikan, Etimb and Imec (2019) used a sample size of 368 organizations. The survey uses interviews and questionnaires to collect information. Reviews show that raw material purchasing and storage has a significant impact on profitability from packaging organizations in Production Company. The review also shows that the raw material inventory has a notable commitment to the profitability of the fermentation businesses; and cross-departmental cooperation has essentially added to the productivity of the prepared businesses.

Kolarovszki and Vaculík (2019), looked at materials Management on selected automatic identification technology in Slovakia. The study established that materials management are all those functions involved in the supply and logistics process from initial identification to final

receipt by end-user or customer. Typically, some of these functions may not report through to a materials manager but rather to finance, engineering or production, but for the purposes of this chapter are deemed to include; specification, sourcing, purchasing and expediting, cataloguing and inventory control, warehousing and materials handling, quality assurance, testing and tracking, internal and external distribution. While all of these' functions are just as likely to exist in a pure manufacturing environment, their relative importance and the optimum approach to carrying out each function is generally very different in the capital-intensive sector.

Ngugi, Muhalia, and Moronge (2021) One of Kenya's finest consumer merchandise makers wanted to know what influence warehouse management solutions had on its supply chain. The researcher used a descriptive study approach. Nairobi's 51 FMCG manufacturers each have an operations manager; Kenya was among the responders. The research included Nairobi-based operations managers from FMCG manufacturers. A census technique was used to choose 51 makers of FMCGs. The study used the questionnaires to gather the results from the respondents; the data used only primary data. An FMCG supply chain research in Nairobi and Kenya found that management of warehouse systems has a favorable and critical impact on supply chain performance. The warehouse administration system assists to optimize the control of the stock; warehouse management systems grow and improves productivity of the work.

A study done by Subramanya, Ramaa and Rangaswany (2019) on the impact of WMS on India's. Focus of the study was on a major retailer involved with consumer goods. The study looked at 60 retailing businesses and concluded that those with WMSs that were programmed had seen their process length reduce to 773 minutes. Mungu (2019) did an examination concentrate fully intent on deciding what use of practices of overseeing co-ordinations can mean for the degree of loads of fundamental medications in general wellbeing organization. The study was conducted in Bungoma Kenya. The study reviewed 15 wellbeing organizations. It was established that acts of overseeing inventories, transport, and stockroom like quality control, naming, clear specialization and evaluating emphatically affected degree of supplies of fundamental medications in the offices. In their study Kimeu and Malala (2021), Inventory storage enhances supply chain effectiveness, according to a study of industrial businesses. This was due to the benefits of inventory management systems (JIT, EOQ). Marketing executives and supply chain officers were polled in a sample of ten firms. The target demographic was studied

using a census method. An inventory management systems implementation, according to the study, resulted in a more efficient supply chain.

Adeyemi and Salami (2018) while looking at the use of inventory storage established that inventory management systems (JIT and VMI) led to improved cost savings and the firms that employed the technology had an efficient supply chain. The target population was sampled via purposive sampling in this study. 2010 to 2015 were the years covered by the research. Using inventory management systems enhanced supply chain performance was achieved according to the study's findings.

Khan (2020) evaluated the mediating aspects of business strategies in affecting the aspects of inventory capability and firm performance of the Bangladeshi readymade garment industry using a survey of 385 senior managers. The study results revealed that business strategies mediate the consequence of inventory materials capability and performance of the firm. Shin, Ennis, and Spurlin (2015) assessed the relationship between firm performance and inventory management using data from the US manufacturing industry and the findings indicated that a lower ratio of inventory to sales generated a higher profit.

Atnafu & Balda (2018) examined the impact of inventory management practices on firms' competitiveness and organizational performance of micro and small enterprises operating in the manufacturing sub-sector in Ethiopia and found that higher levels of inventory management practice can lead to an enhanced competitive advantage and improved performance. Also, competitive advantage can have a direct, positive impact on performance

2.3.3 Material Controls and Production Performance

Okore and Kibet (2019) material control and production supply chain performance in Kakamega County were examined. The study was designed as an explanation study. Four recognized travel groups and five authorized inns in Kakamega County, Kenya participated in the survey, which had 459 representatives. The study findings indicated that collaboration has a positive influence on the functioning of the supply chain.

Oyebamiji (2018) examined the effect of materials managements on the performances of manufacturing industry with particulars reference to the selected cement industry. 30 respondents were selected for the study. Structured questionnaires and a personal interview were used to collect data. Data analysis was conducted with the aids of multiple regression analysis. The result revealed that materials management dimensions jointly contributes significantly to firm performances. The findings further revealed that materials inventory, materials procurements and inter-departmental collaborations have an insignificant effect on firm performances.

Keitny, Wanyoike and Ricu (2020) sought to assess the role of materials managements on organizational performances of the New Kenya Cooperative Creameries, Eldoret, Kenya. The study targeted 49 employees from different departments including productions, purchasing, quality Controls, Warehouse/stores, Human Resources Developments, Finances and audits and physical Distributions departments. Data was collected through a structured questionnaires and analyses through descriptive statistics. The findings showed that there were significant increases in organizational performances as results of inventory controls systems involvement. Further, results showed that lead time was highly significant to organizational performances through acquiring and delivering the needed materials within the shortest time possible

Ondiek and Odera (2018) study the recognition of manufacturing companies in Kenya by giving to material management and the benefits of adopting good material management practices. The study found that there's a long-term success and the survival of these companies who depend on where management of the material costs. The study did a survey of large and medium manufacturing companies which were based in Kenya Nairobi. Sampling technique was used which was stratified and selected 55 companies while data was collected using questionnaires which were open-ended questionnaires. Data was analyzed through the description measures. 23% of these companies found to have recognized material management is the head in charge reported directly to the chief executive. The study found that Kenyan manufacturing firms were not practicing professionalism in management and Material Handling going to the amount increasing or resources that were committed to material and related activities

Ibegbulem and Okorie (2021) study on handling of organizations material management. The study found that the organizations can handle the problems which are connected to effective material management to increase the profitability in Nigeria. Study revealed that the material management in Nigeria was used for the purposes of increasing profitability for the majority of the companies to ensure storage facilities are adequately use without interruption and production processes among other things are kept intact. Study recommended that there should be a good record system connected to material for the purposes of good operations of the organization which ensures productivity and training of employees to acquire better knowledge and skills for the work of the organization and benefits of the shareholders in general

Munyao and Omulo (2021) analyzed the job of stock control practices in performance of the manufacturing and assembling firms in Mombasa County. The investigation used a sample of 45 fabricating firms while information was gathered utilizing polls. The investigation uncovered that manufacturing and assembling firms utilize different stock administration procedures, for example, JIT, EOQ and intermittent audit system. The investigation discovered that regardless of the way that that MRP was best in adding to performance of the generation division most associations in the assembling business utilized activity level techniques.

Ogbo, Onekanma & Wilfred (2019) did an examination on the impact of effective system of stock administration on association performance in the seven-up bottling organization, Nile Mile Enugu. The analysts were propelled to set out on this investigation, with the end goal to convey to fore the significance of powerful stock control framework on authoritative performance as it identifies with the packaging organization. A sum of eighty-three respondent comprises the example for the examination. Four research questions were produced and tried at 10% level of significance. The aftereffect of the investigation demonstrated that flexibility in stock control administration is an essential way to deal with accomplishing performance of an organization. It was discovered that associations profits by stock control administration by method for simple stockpiling and recovery of material, enhanced deals adequacy, and diminished operational expense

Asaolu, Agorzie and Unam (2019) assert that modernized stock control framework can help enhance the proficiency of the store division. Modernized stock administration framework is precise, dependable, predictable, quicker, productive and simple to utilize. The framework expels repetition/duplication and immateriality and can undoubtedly be custom fitted for multi-client condition with minor adjustments. The framework furthermore is related with upgraded effectiveness, exactness, ease of use and compactness.

Paper by Odhiambo (2021) researched on the crude materials controls in the agrochemical firms in Kenya and their impacts on the tasks of the firm. The purpose of the investigation was to determine the connection between crude materials conveyance frameworks and operational performance of agrochemical firms in Kenya. The investigation established that crude material conveyance frameworks gave firms an aggressive edge in spite of the poor computerization of frameworks among agrochemical firms in Kenya. The investigation established that organizations that adopted transport management of raw materials acknowledged operational proficiency and viability

According to Ross, (2018) many firms in manufacturing sector in Dar Es Salaam complained of additional material handling costs that resulted into decline in profit margins. Other challenges involves high and extreme cost of production, low demand of Kenyan produced items; sale of counter fait products, substandard merchandise; high living expenses that drives up wage costs and lower consumer purchasing power; insufficient export support by government and poor linkages with nearby supplies.

Edewin *et. al* (2019) conducted a research on the effect of material handling on profitability of cement manufacturing companies in Kenya: case of Bamburi Cement Company where the findings showed that proper streamlined material handling systems had a positive impact on the profitability in the company. Wilfred (2020) carried out a study on the effect of the effective system of material handling techniques on organization performance in the seven-up bottling company in Nigeria where he came up with the conclusion that organizations benefits from material control management by way of easy storage and retrieval of material, improved sales effectiveness, and reduced operational cost.

2.4 Research Gaps

The study objective was to assess the relationship between materials management and production performance, several studies were conducted in Somalia. There are several studies such as of Mogere, Oloko, and Okibo (2018) who discovered a good relationship between the usage of material requirements, distribution planning, and vendor-controlled inventory and operational efficiency and organizational performance. Atnafuand Balda (2018) empirically examined the impact of inventory management practices on firms' competitiveness and organizational performance in micro and small enterprises in Ethiopia. Kisioya and Moronge (2019) Materials storage and Performance in Manufacturing Organizations and Companies in Kenya were studied in their study. Ngugi, Muhalia, and Moronge (2021) One of Kenya's finest consumer merchandise makers wanted to know what influence warehouse management solutions had on its supply chain. Oyebamiji (2018) examined the effect of materials managements on the performances of manufacturing industry with particulars reference to the selected cement industry, Keitny, Wanyoike and Ricu (2020) sought to assess the role of materials managements on organizational performances of the New Kenya Cooperative Creameries, Eldoret, Kenya, Ogbo, Onekanma & Wilfred (2019) did an examination on the impact of effective system of stock administration on association performance in the seven-up bottling organization, Nile Mile Enugu. Paper by Odhiambo (2021) researched on the crude materials controls in the agrochemical firms in Kenya and their impacts on the tasks of the firm. The reviews cited out a series of gaps that included geographical, time or contextual gaps as many of the cited studies were conducted outside the manufacturing companies, the review also indicate that several reviewed empirical studies were done before 2022 presenting a time gap and finally there exist methodological gaps as many studies were done based on secondary data and those with primary used smaller populations of less than 20 while the current study employed a large sample above 100 respondents, the current study addresses methodological, time and contextual gaps.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter systematically describes the research design and methodology adopted by the study. It explains procedurally the plan that was used by the researcher to validly, objectively, economically and accurately answer the research questions. This section of the study therefore describes the research design, target population, sampling design including the sample size determination and sampling procedure and data collection involving research instruments, validity and reliability and data collection procedures, data presentation and analysis and finally the ethical concerns.

3.1 Research Design

Babbie (2002), describes research design to be the arrangement and procedure utilized with an aim of solving the research problem. This study was adopt a correlation research design. The researcher adopted a correlation design as the interest to establish the nature and magnitude of effect and relationship existing between independent and dependent variables. Correlation design was adopted because the design is appropriate in determining the effect of independent variables on dependent variables. Correlation was achieved through analysis of the 5 likert scale data. The data in the likert scale from which each independent variable was measured was then fed into SPSS software which later generated correlation table. The cause and effect was achieved through multiple regression analysis models with aid of SPSS software. Both correlation and causal designs provided proper recommendations to enable them realize better financial performance upon working on such recommendations.

3.2 Population of the study

According to Mugenda and Mugenda (1999), the term target population is the complete set of cases, individuals or objects with some characteristics the researcher wants to generalize the result of the study. Lancaster (2005) coined that population is the full set of cases, people or items which are under investigation. Population is the total collection of elements (people, firms, decisions etc) about which individuals would wish to make some deductions (Cooper and Schindler, 2011). For the purpose of the study, the researcher collected information from employees of Caafi mineral water and Somali plastic factory; the employees were be routed from

stores, procurement, operations and finance department. The employees in these categories are to the tune of 181 according to the HRM Report, 2022.

3.3 Sample Population

‘A sample is a proportion of the total items that mirrors the population in all contexts.’ The term sample is defined as a smaller group which has been obtained from the accessible population (Mugenda and Mugenda, 2003) or a subgroup of the population you are interested in, (Kumar, 2012). The researcher used Taro Yamane’s sample size calculation formula to determine the sample size of this study. The researcher preferred to use this sample size formula because it users friendly, had a minimal margin of error, it was more accurate and statistical in nature hence it provided an adequate sample size population for this study.

$$n = \frac{N}{1+N[e]^2}$$

Where; N = total population [181]

n= total sample size.

E= desired margin error [0.05]

$$n = \frac{181}{1+181[0.05]^2}$$

n= 125 respondents

Table 3.1: Population and Sample of respondents

Category	Population	Sample
Caafi Mineral water		
Stores and Procurement	27	19
Operations	55	38
Financial management	18	12
Somali Plastic Factory		
Stores and Procurement	21	15
Operations	45	31
Financial management	15	10
Total	181	125

Source: Primary data (2023)

3.4 Sampling Procedure

The researcher used simple random technique in order to get target respondents (Mark, Philip & Adrian, 2007). The random sampling technique was used in order to give each targeted respondents' equal chance to participate in the study by being part of the sample. Simple random sampling used through rotary to select the respondents on the basis of pick and play. The simple random technique solved biasness as each client were given equal chance to be selected and provide data for this study.

3.5 Data Collection Instruments

The study used primary sources of information. Primary data is one which is collected directly from the sources and firsthand experience. The researcher was use questionnaires for the collection of the information from the field. A questionnaire can be defined as a collection of printed questions which have been deliberately designed and structured to be used in collecting information from respondents. Primary data was collected with the use of closed ended questionnaires by the dropping and picking method in an attempt to save time and financial resources as well as to make it easier for analyzing as they are immediately and readily for use. This method was appropriate because questionnaires are easy to administer and the respondents were accessed easily and was assumed to have willingness to co-operate and ability to reading and writing independently (Creswell, 2009).

3.6 Validity and Reliability of the study

3.6.1 Validity of the instrument

This is the measuring instrument's ability to measure what it is designed to measure (Kumar, 2012). The instrument's validity is measured by the extent to which outcomes achieved from the analysis of the data represent the phenomena under study (Mugenda & Mugenda, 2003). To make sure that the validity of the instruments is achieved, the study considered both the face value method and content validity of the questionnaire. To ensure validity of the instrument, face value validity was assessed by having all the questions phrased in line with the study objectives to reduce ambiguity to the lowest limit possible. Content validity was undertaken through a review of the questionnaire by an expert in the study field. The researcher sought support, guidance and advice from the supervisor to assist in reviewing the content validity of the data collection instrument.

Table 3.2: Determination of the Validity of the Instrument

	Relevant items	Not relevant	Total
Rater 1	22	3	25
Rater 2	21	4	25
Rater 3	23	2	25
Total	66	9	75

$$CVI = \frac{66}{75} = 0.88$$

If the overall Content Validity Index (CVI) of the instrument is equal to the average acceptable index of 0.7 or above, then the instrument was accepted as valid (Amin, 2005)

3.6.2 Reliability of the study

Reliability is the measure of the extent to which a research instrument generates consistent outcomes after repeated trials (Kothari, 2003). It is the ability of an instrument to give consistent results if it is administered to the same respondents twice or more. To establish the reliability of the research instrument, the instrument (questionnaires) was piloted as this would help remove ambiguities in the questions. Reliability of the research instrument enhanced through a pilot study that was done in one public organization selecting a pilot group of 10 respondents. The data collection instrument was administered to conveniently selected respondents. According to Cooper and Schindler (2003), the pilot group can range from 25 to 100 subjects but it does not need to be statistically selected. The respondents were conveniently selected since statistical conditions are not necessary in the pilot study (Cooper and Schindler, 2003). The pilot data was included in the actual study. This reliability estimate was measured using Cronbach Alpha coefficient (α). Nunnally (1978) recommends that instruments used in research should have reliability of about 0.70 and above.

Table 3.3: Cronbach's Alpha show construct validity

Construct Variable	Cronbach's Alpha	Number of items
Material transportation	0.79	6
Material Storage	0.81	6
Material Controls	0.85	6
Production performance	0.70	7
Mean	0.787	

The mean of the reliability is established at 0.787 therefore the internal consistency (Reliability) of the instrument is confirmed.

3.7 Data Collection Procedure

An introductory letter was obtained from Kampala International University. When it is approved, the researcher made a list of qualified respondents and selects them through random sampling and purposive sampling. The researcher explained the purpose of study to the respondents and requests them to sign the informed consent form. The researcher used and train research assistants to collect accurate data timeously. The respondents were requested to answer in full and not to leave any part of the questionnaires unanswered. The researcher adopted a drop and pick method in collecting the data. This method involved handing out the questionnaires to the respondents and picking them at a later date. This method was favored since it allows the respondent to have ample time in giving out their responses.

3.8 Data Analysis

Data analysis is the process of bringing order, structure and meaning to the mass of information gathered. Data was collected from the respondents were entered into a computer and analyzed with the use of statistical packages for social scientists (SPSS) Version: 22, which assisted to summarize the coded data and expedited data analysis. Data analysis on the first to the third objective took into consideration the analysis of the constructs on the variables. The bio-data were analyzed using frequency and percentages while objectives were analyzed to determine materials management and production performance. The relationship between the variables were

assessed using Pearson correlation analysis to prove the nature of relationship at 0.05 level of significance ($P = .000 < 0.05$); Pearson correlation detected and determine the state of the relationship between the variables of the study.

3.9 Ethical Considerations

The researcher adhered to the ethical issues observed during the research process. The researcher was obtained permission from the research department and the researcher carried out the research study.

The researcher ensured that privacy of the respondents is not invaded and that confidentiality of information provided from the respondents were guaranteed to the highest level possible. The researcher upheld the principle of good faith throughout the research process to ensure that the findings were arrived at in the most objective way.

Right of the participant in this study, no attempt was made to harm participants deliberately and those who could experience any form of harm be it through victimization, emotional or otherwise, was informed in advance of their right to withdraw from participating in the study.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter presents the findings determines the effect of material management on production performance in selected manufacturing companies of Mogadishu Somalia. The study was guided by the objectives of the study which were (1) To examine the relationship between Material transportation and production performance (2) To determine the relationship between Material Storage and production Performance and 3) To examine the relationship between Material controls and production Performance in manufacturing companies. This chapter is organized based on the demographic characteristics of respondents, following by the analysis as per the research objectives presented objective by objective. The data Presentations, interpretations analysis and discussions are presented in the subsequent sub-sections.

The study targeted a sample population of 125 respondents who were employees of manufacturing companies in Mogadishu Somalia, out of the questionnaires which were provided to the respondents, 121 were received back in the period of 3 weeks targeted to enable response to the questionnaires, this provided a response rate of 96.8 % which never the less is in agreement with those of Amin, (2010) who contend that a response rate of 50% is adequate when quantitative data is manually collected. Based on the data collected it informs that the response rate of 96.8% is deemed adequate when data is collected hence the data attained is from a very high response rate.

Table 4. 1: Response Rate

Respondents Category	Sample Size	Returned	Percentage
All respondents	125	121	96.8

Source: Primary Data, 2023

Table 4.1 above presents the response rate of the responses to which the research instruments were administered. This implies that the response rate was high; the data collected is therefore reliable.

4.1 Demographic Characteristics of respondents

This was based on the gender of respondents, gender, age, education, marital status and time of work in the manufacturing companies. This was intended to attain a detailed understanding of the respondent's key characteristics influences the result of the study. The different demographic characteristics are analyzed and presented in Table 4.2.

4.1.1 Gender of Respondents

Here the researcher was interested in gathering information on the gender of respondents and information got was presented in the table 4.2.

Table 4. 2: Gender of Respondents

Gender	Frequency	Percent
Male	74	61.2
Female	47	38.8
Total	121	100.0

Source: Primary Data, 2023

Results in Table 4.2 indicate that male respondents were 74(61.2%) of the respondents while female respondents were 47(38.8%) of the respondents. The study sought to draw responses on the views of respondents on gender identity in the responses. The study findings enumerated indicate that the majority respondents were female although both genders participated in the study; it indicates that data attained is a balanced assessment of both the male and female respondents of the study.

4.1.2 Education of Respondents

Here the researcher was interested in attainment of the responses for the study based on the education of the respondents for the study.

Table 4.3: Education of Respondents

Responses	Frequency	Percent
Certificate	7	5.8
Diploma	6	5.0
Degree	97	80.2
Masters and Above	11	9.1
Total	121	100

Source: Primary Data, 2023

Findings in Table 4.3 indicate that majority respondents were degree holders representing 97(80.2%) of the respondents while the master degree and above holders were 11(9.1%) of the respondents followed by diploma holders who were 6(5%) of the respondents, then 7(5.8%) respondents were certificate holders of the respondents. The researcher her set to attain respondents view on the education identity of the respondents. The study findings therefore indicate that the majority respondents were educated hence has adequate understanding of the association between materials management and production performance of manufacturing companies in Mogadishu Somalia.

4.1.3 Age of Respondents

Here the researcher set to investigate the age of respondents for the field, the responses provided indicate that the age of the respondents are provided in Table 4.4

Table 4.4: Age of Respondents

Age	Frequency	Percent
20-29	16	13.2
30-39	50	41.3
40-49	33	27.3
50 years above	22	18.2
Total	121	100.0

Source: Primary Data, 2023

Results in Table 4.4 on the age of respondents indicate that majority respondents were in the age of 30-39 years who were 50(41.3%) of the respondents, then 33(27.3%) respondents were in the age of 40-49 years, then those of 50 years above were 22(18.2%) respondents and finally those of 20-29 years were 16(3.2%) respondents. The study findings based on the study indicate that the majority respondents in the study are mature, responses are hence deemed to be taken from people with reasonable understanding of the study area. The results therefore indicate that the majority of respondents were of mature and of experienced age which made the researcher to consider their views as valid and authentic in relation to the study. These findings concur with Amin, (2005) who argue that majority age of above 18 years adds value to the responses given that mature people are more and take time to think about a particular aspect of life given their wide exposure and experience.

4.1.4 Period of Work Experience

Here the researcher sought to investigate the time the respondents have been in Manufacturing, Mogadishu Somalia. The findings are presented in Table 4.5.

Table 4.5: Period of work Experience

Responses	Frequency	Percent
1- 5 years	15	12.4
6- 10 Years	43	35.5
10 Years above	63	52.1
Total	121	100.0

Source: Primary Data, 2023

Table 4.5 Provide findings on the working experience of employees in the manufacturing companies in Mogadishu Somalia, the information attained indicate that those of 10 years and more were 63(52.1%) respondents, those with 6-10 years were 43(35.5%) and finally those of 1-5 years were 15(12.4%) respondents. The findings from the field indicate that the majority respondents have been in manufacturing companies of Mogadishu Somalia for a long period of time, the responses indicate that many respondents have been in the manufacturing companies for a long period of time. Information attained is significant for the study since it was from informed persons.

4.2 Objective One: Relationship between Material transportation and production performance in manufacturing companies of Mogadishu Somalia

The first research objective was to examine the relationship between Material transportation and production performance in manufacturing companies of Mogadishu Somalia, In order to attain the information for the study, the researcher attained data from the field in that regard, first provided descriptive data based on mean and standard deviation. Then provided Pearson correlation analysis to attest the association between material transportation and production performance in manufacturing companies of Mogadishu Somalia

4.2.1 Materials transportation in manufacturing companies of Mogadishu Somalia

The first independent variable in this study was materials transportation, it was provided with 6 variables in the study. Each of these questions was based on a five point Likert scale where by respondents were asked to rate the materials transportation by indicating the extent to which they agree or disagree with each question and their responses were analyzed using SPSS and summarized using means and rank as indicated in table 4.6;

Table 4.6: Materials transportation in manufacturing companies of Mogadishu Somalia

	Mean	Std. Deviation
There is a policy on effective materials transportation	3.314	1.483
This company has a materials transportation department	3.396	1.417
This company has effective employees in materials transportation	3.405	1.399
This company maintains quality during materials transportation	3.743	1.326
Materials transportation is undertaken by trained experts	2.735	1.682
Materials transportation involve precautions and control	3.570	1.359
Average Mean	3.360	1.443

Source: Primary Data, 2023

Table 4.6 indicate findings on the level of materials transportation in manufacturing companies of Mogadishu Somalia, in the study, the mean responses were $M=3.360$, the standard deviation was $SD=1.443$ interpreted as fairly satisfactory, the study results imply that the material transportation in the manufacturing companies is fairly good. It further implies that material transportations are undertaken in management following a fairly needed order of the manufacturing companies in Mogadishu Somalia.

The first study item set to determine whether there is a policy on effective materials transportation, the researcher found that the mean response was $M=3.314$, the standard deviation $SD=1.483$ interpreted as fairly good. The results imply that there is a policy provided fairly handling the transportation management in manufacturing companies of Mogadishu Somalia.

Secondly, the researcher sought to determine whether the manufacturing companies have a materials transportation department, the results indicated that he mean was $M=3.396$, the standard deviation $SD=1.417$ interpreted as fairly satisfactory. In this study, the researcher findings indicated that there exist materials transportation department in the management of the transport systems in Mogadishu Somalia.

Thirdly, it was found that manufacturing companies have effective employees in materials transportation according to the mean $M=3.405$, the standard deviation was $SD=1.399$ interpreted as fairly satisfactory meaning that the study findings indicate that the manufacturing companies employ materials transportation management in the manufacturing companies of Mogadishu Somalia.

The fourth item sought to determine whether manufacturing companies maintains quality during materials transportation, the results indicated that the mean $M=3.743$, the standard deviation was $SD=1.326$ interpreted as satisfactory meaning that the manufacturing companies in Somalia maintain good quality during materials transportation.

On the fifth item, the researcher sought to determine whether the researcher Materials transportation is undertaken by trained experts, in this study, the researcher found that the mean

was $M=2.735$, the standard deviation was $SD=1.682$ interpreted as fairly satisfactory. In the study, the researcher contends that the material transportation is undertaken by experts in materials management.

Finally, the last item of the materials transportation sought to determine whether materials transportation involve precautions and control, the mean responses were $M=3.570$, the standard deviation of $SD=1.359$ interpreted as satisfactory. In the study, the researcher contends that materials transport there exist strict transport precautions and controls in the manufacturing companies in Mogadishu Somalia.

4.2.2 Production Performance in Manufacturing Companies of Mogadishu Somalia

The dependent variable in this study was production performance in manufacturing companies Mogadishu Somalia for which respondents were required to ascertain the extent to which they agree or disagree with the items or statements by indicating the number which best describes their perceptions. This variable was measured using questions with response rate ranging between 5=strongly agree, 4=agree, 3=Not Sure, 2=Disagree and 1=strongly disagree. The responses were analyzed and described using means as summarized below in table 4.7;

Table 4.7: Production Performance in Manufacturing Companies of Mogadishu Somalia

	Mean	Std. deviation
This company has registered consistent increment in the production levels	3.041	1.635
There is constant changes in the production capacities of the company	3.843	1.384
This company products meet the needed specifications	3.487	1.391
The company had not experienced stoppage as a result of lack of goods	3.140	1.67
The products of this manufacturer are competitive	3.090	1.673
The quality of inventory has assisted the company to increase its sales	2.958	1.583
The products of the company attracts less complaints from consumers as a result effective material management	2.553	1.384
Average Mean	3.158	1.531

Source: Primary Data, 2023

Table 4.7 findings on the Production Performance in Manufacturing Companies of Mogadishu Somalia, indicated that the mean responses was $M=3.158$, the standard deviation was 1.531 interpreted as fairly well. Based on the findings, the researcher contends that the state of production performance in manufacturing companies is generally in moderate terms. This was supported by the responses provided which were in agreement as enumerated here under.

This company has registered consistent increment in the production levels with the mean responses of $M=3.041$, the standard deviation is $SD=1.635$ interpreted as fairly good, the findings attained from the field imply that there production levels of the companies consistently increases.

Secondly the researcher sought to determine whether there are constant changes in the production capacities of the company, the study findings had Mean $M=3.843$, standard deviation

SD=1.384 interpreted as good meaning that the majority respondents agreed that there are constant changes in the production capacities of the manufacturing companies.

The third item set to determine whether these company products meet the needed specifications had the mean $M=3.487$, the standard deviation was 1.391 interpreted as good meaning that the majority respondents implying that majority respondents agree that the study manufacturing firms products are done based on the specifications

Fourth aspect set to determine whether the company had not experienced stoppage as a result of lack of goods, this had the mean of $M=3.140$, the standard deviation $SD=1.671$ interpreted as fairly good meaning that a fairly reasonable respondents agreed that the manufacturing companies experience stoppages.

The fifth aspect of the study was to determine whether, the products of this manufacturer are competitive, the mean $M=3.090$, the standard deviation is 1.673 interpreted as fairly well. Based on the responses, the researcher contends in agreement that majority respondents agree that the products manufacture is very competitive in the industry.

On whether the quality of inventory has assisted the company to increase its sales, the mean responses for the study was 2.958, the standard deviation was 1.583 interpreted as fairly good. Based on the study, the researcher contends that the majority respondents agree that there quality inventory generates sales increment in the manufacturing companies.

The final item set to evaluate whether the products of the company attracts less complaints from consumers as a result effective material management, this had a mean of 2.553, the standard deviation was 1.384 interpreted as fairly good. Based on this the researcher indicate that products of the company attracts the less complaints amongst the customers. This is so because the complaints rarely exist the company.

4.2.3 Relationship between Material transportation and production Performance in manufacturing companies of Mogadishu Somalia

The first objective in this study was to examine the relationship between material transportation and production Performance in manufacturing companies of Mogadishu Somalia. To achieve this objective the researcher correlated the mean on material transportation and that on production performance using the Pearson's Linear Correlation Coefficient, as indicated in table 4.4; examine the relationship between Material transportation and production Performance in manufacturing companies of Mogadishu Somalia

Table 4.8: Relationship between Material transportation and production Performance in manufacturing companies of Mogadishu Somalia

		Materials Transportation	Production Performance
Materials Transportation	Pearson Correlation	1	.542**
	Sig. (2-tailed)		.000
	N	121	121
Production Performance	Pearson Correlation	.542**	1
	Sig. (2-tailed)	.000	
	N	121	121

** . Correlation is significant at the 0.05 level (2-tailed).

Source: Primary Data, 2023

Results in Table 4.8 indicated a positive relationship material transportation and production Performance in manufacturing companies of Mogadishu Somalia, since the sig. value (.000) was far less than 0.05, which is the maximum level of significance, required declaring a significant relationship in social sciences. This finding can be seen in the r-values of 0.542 and a small significant value of 0.000. This research finding means that any variation in materials transportation was lead to 0.542 variations in production Performance in manufacturing companies of Mogadishu Somalia. The research hypothesis is rejected, which had provided that there is a no statistically significant relationship between material transportation and production performance in manufacturing companies of Mogadishu Somalia, the researcher contends that material transportation has a significant leads to the production performance of the companies.

4.3 Objective Two: Relationship between Material Storage and production Performance in manufacturing companies of Mogadishu Somalia

The second research objective was to determine the relationship between Material storage and production performance in manufacturing companies of Mogadishu Somalia, In order to attain the information for the study, the researcher attained data from the field in that regard, the researcher first provided descriptive data based on mean and standard deviation. Then provided Pearson correlation analysis to attest the association between material transportation and production performance in manufacturing companies of Mogadishu Somalia

4.3.1 Materials storage in manufacturing companies of Mogadishu Somalia

The second independent variable in this study was materials storage, it was provided with 6 variables in the study. Each of these questions was based on a five point Likert scale where by respondents were asked to rate the materials storage by indicating the extent to which they agree or disagree with each question and their responses were analyzed using SPSS and summarized using means and rank as indicated in table 4.9;

Table 4.9: Materials storage in manufacturing companies of Mogadishu Somalia

	Mean	Std. Deviation
Employees of this company are oriented on materials storage	3.196	1.318
There is use of technology in materials storage	3.413	1.345
Materials storage plan is well designed	3.115	1.539
Materials storage is undertaken by experts in storage	3.405	1.4117
The stores layout enables materials flows	3.421	1.453
There are specialized storage facilities in your organization	3.487	1.272
Average Mean	3.338	1.389

Source: Primary Data, 2023

Table 4.9 provide results on the level of materials storage in manufacturing companies of Mogadishu Somalia, based on the findings, the mean responses had $M=3.338$, the standard deviation was $SD=1.389$ interpreted as fairly satisfactory. In this study, the researcher contends

that state of the materials storage is provided with indication that materials storage in the manufacturing companies fairly exist in the companies.

Employees of this company are oriented on materials storage had the mean of 3.196, the standard deviation $SD=1.318$, this was interpreted as fairly satisfactory meaning that the manufacturing companies are fairly oriented to storage meaning that the state of the orientation of the materials are generally fairly good.

The researcher also sought to determine whether there is use of technology in materials storage, the responses indicated that the mean was 3.413, the standard deviation was 1.345 interpreted as fairly satisfactory. In this study, the researcher contends that there is technology usage in materials storage fairly prevailing in the manufacturing companies.

The third item of the study was to determine whether materials storage plan is well designed, this had the mean of $M=3.115$, the standard deviation was $SD=1.539$ interpreted as fairly satisfactory. These findings indicate that the state of the material storage plans is fairly designed in the state of planning in the planning.

Fourthly materials storage is undertaken by experts in storage which indicate that the mean was $M=3.405$, Standard deviation was $SD=1.411$, this was interpreted as fairly satisfactory meaning that the experts are provided in the storage of the inventories in manufacturing companies. This is provided in the study as fairly good.

The fifth item sought to determine whether the stores layout enables materials flows, the mean responses was $M=3.421$, the standard deviation was 1.453 interpreted as satisfactory implying that the stores layout are well involved in the materials flows in the manufacturing companies in Mogadishu Somalia

On whether there are specialized storage facilities in your organization, the researcher found that the majority respondents contend that the mean was 3.487, the standard deviation was $SD= 1.272$

interpreted as satisfactory, In this study, the researcher contend that there are storage facilities provided as fairly good in the manufacturing companies in Somalia.

4.3.2 Relationship between Materials storage and production Performance in manufacturing companies of Mogadishu Somalia

The second objective in this study was to examine the relationship between storage and production Performance in manufacturing companies of Mogadishu Somalia. To achieve this objective the researcher correlated the mean on material storage and that on production performance using the Pearson's Linear Correlation Coefficient, as indicated in table 4.4; examine the relationship between Material storage and production Performance in manufacturing companies of Mogadishu Somalia

Table 4.10: Relationship between Material Storage and Production Performance in manufacturing companies of Mogadishu Somalia

		Material Storage	Production Performance
Material Storage	Pearson Correlation	1	.485**
	Sig. (2-tailed)		.000
	N	121	121
Production Performance	Pearson Correlation	.485**	1
	Sig. (2-tailed)	.000	
	N	121	121

** . Correlation is significant at the 0.05 level (2-tailed).

Source: Primary Data, 2023

Results in Table 4.10 indicated a positive significant moderate relationship material storage and production Performance in manufacturing companies of Mogadishu Somalia, since the sig. value (.000) was far less than 0.05, which is the maximum level of significance, required declaring a significant relationship in social sciences. This finding can be seen in the r-values of 0.485 and a small significant value of 0.000. This research finding means that any variation in materials storage was lead to 0.485 variations in production Performance in manufacturing companies of Mogadishu Somalia. Based on the results it’s provided that the materials storage is an icon for generating production performance in the manufacturing companies in Mogadishu Somalia. The

researcher rejected the second hypothesis which was H_{02} : There is no statistically significant relationship between material Storage and production Performance in manufacturing companies of Mogadishu Somalia, the researcher argued that there is a statistically significant association between the variables of the study.

4.4 Objective Three: Relationship between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

The third research objective was to determine the relationship between Material controls and production performance in manufacturing companies of Mogadishu Somalia, In order to attain the information for the study, the researcher attained data from the field in that regard, the researcher first provided descriptive data based on mean and standard deviation. Then provided Pearson correlation analysis to attest the association between material controls and production performance in manufacturing companies of Mogadishu Somalia

4.4.1 Materials controls in manufacturing companies of Mogadishu Somalia

The third independent variable in this study was materials controls it was provided with 6 items in the study. Each of these questions was based on a five point Likert scale where by respondents were asked to rate the materials storage by indicating the extent to which they agree or disagree with each question and their responses were analyzed using SPSS and summarized using means and rank as indicated in table 4.11;

Table 4.11: Materials controls in manufacturing companies of Mogadishu Somalia

	Mean	Std. Deviation
There is periodic materials replenishment	3.173	1.458
This company has a reorder level for their inventory	2.818	1.460
Materials are handled with specialized equipments	2.843	1.622
There is timely reviews of inventory quantity	2.859	1.644
The inventory checks for quality are frequently done	2.933	1.569
The organization make use of material bin cards to monitor and control	3.049	1.667
Average Mean	2.945	1.570

Source: Primary Data, 2023

Table 4.11 provide findings Materials controls in manufacturing companies of Mogadishu Somalia, the mean was $M=2.945$, the standard deviation $SD= 1.570$ interpreted as fairly satisfactory implying that the material controls in the manufacturing companies is generally fairly good. The results indicate that material controls are undertaken in the manufacturing companies in Mogadishu Somalia.

There is periodic materials replenishment had the mean of $M=3.173$, standard deviation $SD=1.458$ interpreted as fairly satisfactory indicating that the state of satisfactory is fairly good. The findings are in agreement with the notion of the materials replenishments in the companies.

The researcher sought to determine whether the manufacturing companies have a reorder level for their companies inventory, the mean responses for the study was $M=3.173$, the standard deviation was $SD=1.460$ interpreted as fairly satisfactory, based on the findings the researcher contend that manufacturing companies have been in the environment of limited existence of the response level mechanism for their operations.

The third item of the study was to determine whether materials are handled with specialized equipments with the mean of $SD=2.843$, the standard deviation was $SD=1.622$ interpreted as fairly satisfactory, the research findings indicate that materials handling is done with the usage of fairly specialized equipment.

The fourth item was to determine whether “There are timely reviews of inventory quantity, this had the mean of 2.859, the standard deviation was $SD=1.644$ interpreted as fairly satisfactory implying that majority respondents agree that there are reviews of inventory quantities amongst the employees in the manufacturing companies in Somalia

The researcher sought to determine whether the inventory checks for quality are frequently done, the researcher contend in agreement that arguing that the mean was $M= 2.933$, the standard deviation was $SD=1.569$, the results implies that it was fairly satisfactory indicating that the majority respondents agree that many respondents are in agreement with the existence of the checks in inventory quality.

Finally, the researcher sought to determine whether the organization makes use of material bin cards to monitor and control, based on the findings, the researcher contend in agreement that the mean response was 3.049, the $SD=$ standard deviation was $SD=1.667$ interpreted as fairly satisfactory. In the study therefore the researcher contend that there exist fairly existing mechanisms in the material bins to monitor and control the environment of the companies.

4.4.2 Correlation between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

The third objective in this study was to examine the relationship between material controls and production Performance in manufacturing companies of Mogadishu Somalia. To achieve this objective the researcher correlated the mean on material controls and that on production performance using the Pearson's Linear Correlation Coefficient, as indicated in table 4.4; examine the relationship between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

Table 4.12: Relationship between Material Controls and Production Performance in manufacturing companies of Mogadishu Somalia

		Material Controls	Production Performance
Material Controls	Pearson Correlation	1	.518**
	Sig. (2-tailed)		.000
	N	121	121
Production Performance	Pearson Correlation	.518**	1
	Sig. (2-tailed)	.000	
	N	121	121

** . Correlation is significant at the 0.05 level (2-tailed).

Source: Primary Data, 2023

Results in Table 4.12 indicated a positive significant moderate relationship between material controls and production Performance in manufacturing companies of Mogadishu Somalia, since the sig. value (.000) was far less than 0.05, which is the maximum level of significance, required declaring a significant relationship in social sciences. This finding can be seen in the r-values of 0.518 and a small significant value of 0.000. This research finding means that any variation in materials storage was lead to 0.518 variations in production Performance in manufacturing companies of Mogadishu Somalia. Based on the results it's provided that the material controls is an icon for generating production performance in the manufacturing companies in Mogadishu Somalia. The researcher rejected the second hypothesis which was H_{03} : There is no statistically significant relationship between material controls and production Performance in manufacturing companies of Mogadishu Somalia, the researcher argued that there is a statistically significant association between the variables of the study.

4.5 Regression analysis of Material management and production performance in selected manufacturing companies of Mogadishu Somalia

In order to test the effect, the researcher used material management and production performance in selected manufacturing companies of Mogadishu Somalia, The results from the study indicated in the regard to test the effect of combined material management variables on production performance in selected manufacturing companies.

Table 4.13: Regression analysis of Material management and production performance in selected manufacturing companies of Mogadishu Somalia

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.572 ^a	.327	.309	.88204

a. Predictors: (Constant), Material Controls, Material Storage, Materials Transportation

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.178	3	14.726	18.928	.000 ^b
	Residual	91.025	117	.778		
	Total	135.204	120			

a. Dependent Variable: Production Performance

b. Predictors: (Constant), Material Controls, Material Storage, Materials Transportation

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.629	.239		6.809	.000
	Materials Transportation	.255	.104	.314	2.455	.016
	Material Storage	.149	.101	.169	2.10	.041
	Material Controls	.110	.107	.144	3.031	.021

a. Dependent Variable: Production Performance

Source: Primary Data, 2023

From table 4.6 show findings regarding material management and production performance in selected manufacturing companies of Mogadishu Somalia. The r-square is .327, which indicates that material management through materials transportation, material storage and material Controls has a 32.7% effect on the study. The standard error estimate of .88204 indicates the closeness of variables of the study.

From the coefficient of the independent variables that is; β_1 (materials transportation, material storage and material controls) was found to have the effect on production performance in selected manufacturing companies of Mogadishu Somalia. It indicates that materials transportation .016, material storage .041 and material control .021. The level of significance based on study is 95% confidence interval (0.05) level of significance taken as the degree of freedom in determining the association between the variables. The study indicates that materials transportation, material storage and material controls affect the production performance in the manufacturing companies of Mogadishu Somalia.

CHAPTER FIVE

DISCUSSION OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.0 Introduction

This chapter presents the presentation of discussion of the findings presented in the preceding chapter. The discussion was made with reference to other similar works done in previous studies. The section then makes conclusions from these discussions after which it offers recommendations. Finally, it suggests areas that were potential grounds for research that could not be completed in the body of this report.

5.1 Discussion of Findings

This section was further organized into three subsections with respect to the research objectives that guide the study.

5.1.1 Relationship between Material transportation and production performance in manufacturing companies of Mogadishu Somalia

The study found a positive relationship material transportation and production Performance in manufacturing companies of Mogadishu Somalia. The results are in agreement with those of Mukolwe and Wanyoike (2020) who contend that transportation of materials affect production performance in Mumias Sugar Company. Using descriptive and inferential statistics, the study revealed among other findings that transport management and the practices used for physical distribution are synonymous with the flow of raw materials and goods that is cost effective which impacts positively on operational efficiency. The results agree with those of Mwangangi (2020) who examined the influence of material transportation has on performance of manufacturing firms. The study used both primary and secondary data drawn from employees of the firms and published and unpublished records. Using multiple regressions analysis, the study revealed that transport management by use of transport management systems was a significant predictor of firm performance. The findings are in agreement with those of Ndubi, Iravo and Onchiri (2021) who examined the effect of materials transportation in lead times has on the performance of inbound logistics at Safaricom Limited. Using linear regression model, the study identified lead times in terms of production, shipping, the TAT time for customs brokerage, and the velocity for inspection of goods as having direct and significant effects on the performance of inbound logistics measured in terms of delivery time, cost and quantity.

5.1.2 Relationship between Material Storage and production Performance in manufacturing companies of Mogadishu Somalia

Results indicated that a positive statistically significant moderate relationship material storage and production Performance in manufacturing companies of Mogadishu Somalia. This finding can be seen in the r-values of 0.485 and a small significant value of 0.000. The findings are in agreement with those of Kisioya and Moronge (2019) who argued that materials storage and Performance in Manufacturing Organizations and Companies in Kenya were studied in their study.. According to the findings of the study, most material storage have a favorable impact on the performance of the organization. The findings are agreement with those of Adeyemi and Salami (2018) while looking at the use of inventory storage established that inventory management systems (JIT and VMI) led to improved cost savings and the firms that employed the technology had an efficient supply chain. Using inventory management systems enhanced supply chain performance was achieved according to the study's findings. Atnafu and Balda (2018) examined the impact of inventory management practices on firms' competitiveness and organizational performance. Inventory management practice can lead to an enhanced competitive advantage and improved performance. Also, competitive advantage can have a direct, positive impact on performance

5.1.3 Relationship between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

Results indicate a positive significant moderate relationship between material controls and production Performance in manufacturing companies of Mogadishu Somalia. The findings are in agreement with those of Odhiambo (2021) who researched on material controls and operational performance of agrochemical firms in Kenya. The investigation established that crude material conveyance frameworks gave firms an aggressive edge in spite of the poor computerization of frameworks among agrochemical firms in Kenya. The investigation established that organizations that adopted transport management of raw materials acknowledged operational proficiency and viability. The findings are in agreement with those of Asaolu, Agorzie and Unam (2019) who assert that modernized stock control framework can help enhance the proficiency of the store division. Modernized stock administration framework is precise, dependable, predictable, quicker, productive and simple to utilize. The framework expels

repetition/duplication and immateriality and can undoubtedly be custom fitted for multi-client condition with minor adjustments.

5.2 Conclusion

5.2.1 Relationship between Material transportation and production performance in manufacturing companies of Mogadishu Somalia

The study found a positive relationship material transportation and production Performance in manufacturing companies of Mogadishu Somalia. Based on the study, the researcher conclude that materials transportation is an avenue for enhancing the production performance therefore further contend that development of material transport systems is an icon to enhancing the production performance systems in manufacturing companies in Mogadishu Somalia. The study conclude that material transportation can have a bearing on the production performance of the manufacturing companies of Mogadishu Somalia.

5.1.2 Relationship between Material Storage and production Performance in manufacturing companies of Mogadishu Somalia

The study found that a positive statistically significant moderate relationship material storage and production Performance in manufacturing companies of Mogadishu Somalia. The study concludes that increased materials storage in the manufacturing company has a potential to generate production performance levels in the manufacturing companies. The study further implies that the material storage development if any can generate a functional performance of the production systems. In this study, the study contend in agreement that material storage would heavily generate the performance of the production system.

5.1.3 Relationship between Material controls and production Performance in manufacturing companies of Mogadishu Somalia

The study found a positive moderate statistically significant moderate relationship between material controls and production Performance in manufacturing companies of Mogadishu Somalia. The study indicated is in argument to the argument that material controls in the manufacturing companies are provided in the study, these findings indicate that there exist a

significant avenue for the generation of the production performance in the manufacturing companies in Mogadishu Somalia. The study indicates that materials controls are an avenue in provision of information necessary for the realization of the performance development.

5.3 Recommendations

Objective One: Relationship between Material transportation and Production performance

Management of manufacturing companies requires technical and analytical acumen to systematically access for material transportation practices alternatives as the success of every material transportation policy very much depend on i.e. the flow of vital information from top management level to every member of the organization and the receiving of feedbacks by top management.

Firms should outsource logistical transportation services from expertise firms so as to minimize damages and delays in materials in transport. These activities improve the performance of the firm as they reduce or prevent costs from deviations in delivery.

Objective two: Relationship between Material Storage and Production Performance

The researcher recommended that the management of companies should ensure fairness in tendering process by having open and clear systems.

Materials storage firms should practice proper material storage with suppliers and develop strategies to develop them so that they can be able to deliver the quality required without errors and defects and at the right place without delays. Reliable logistical communication practices should be adopted among the suppliers and the buying organization so as to curb costs from quantity and product deviations.

Objective Three: Relationship between Material Controls and Production Performance

Large manufacturing firms should embrace expertise in formulation of material automation program at early stages of materials design. User departments should always be involved and consulted in development of material requirement planning. The material control techniques should always be reviewed to meet requirements for use and purpose.

Material stock control of handling should be used for handling outlined materials correctly while putting the consideration that extra handling does not add value. Quantity and quality inspection should always be done and ensuring that there is no traffic of materials in the receiving section. Material controls are

5.4 Contribution to existing Knowledge

The study on materials management and production performance in selected manufacturing companies in Mogadishu Somalia has hit the ground; it has been proven that proper materials management induce the production performance to a moderate level. It has been provided for the future and existing companies that any attempt to induce materials management through material transportation, material storage and material controls can amplify the production performance to moderate terms implying that materials management is sufficient in the realization of performance for the manufacturing companies. The study confirm that materials management can be an engine for the realization of production performance, therefore proper materials management is pertinent in realization of production performance systems.

5.5 Limitations of the study

Sensitivity of information; some respondents were reluctant to respond to some of the questions since they deal with financial information. The researcher, however, assured them of maximum confidentiality for them to provide all the required information.

There may be unwillingness to complete questionnaires by respondents as they may feel the exercise unbeneficial to them. However, the researcher tried to persuade them that the study is for academic good

Many researchers are biased when it comes to collecting data; in this case respondents too become biased hence withhold information. To avoid bias the researcher presented a letter of introduction indicating that the study is academic and information to be provided was kept confidential.

5.6 Areas for Further Research

The objective of the study was to assess the influence of material management on production performance of manufacturing firms in Mogadishu Somalia. It recommended that a similar research should be conducted with other variables or of other firms in other sectors, including the

service industry, the banking among other sector to measure the observable features of the material management on production performance in Mogadishu Somalia.

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Appendix I: Material management and production performance Questionnaire

Dear Respondent,

I am MOWLID ADAN ALI, 2022-08-11644 a student of college of economics and management of Kampala International University pursuing Masters of business administration- Procurement and Logistics management. I want to thank you in advance for your time and willingness to share your views on “ Material management and production performance in selected manufacturing companies of Mogadishu Somalia”. Please know that your anonymity is guaranteed. No one in your Company was able to view your responses and the results will not include data that would identify individuals. I appreciate your participation in this effort.

Thank you,

PART I: FACE SHEET: Profile of Respondents (Please tick any which applies)

1. Gender:

Male

Female

2. Age:

20- 29

30- 39

40- 49

50- 59

60 and above

3. Education level:

Certificate

Diploma

Bachelors

Masters

Phd

4. Years of Experience

1-5 Years

6-10 Years

10 Years and above

SECTION B: Materials Management

The use of likert scale were 1= strongly disagree, 2= Disagree, 3= Not sure 4= Agree, 5= Strongly Agree.

		Rankings				
	Materials Transportation	1	2	3	4	5
CP1	There is a policy on effective materials transportation					
CP2	This company has a materials transportation department					
CP3	This company has effective employees in materials transportation					
CP4	This company maintains quality during materials transportation					
CP5	Materials transportation is undertaken by trained experts					
CP6	Materials transportation involve precautions and control					
	Material Storage					
Ms1	Employees of this company are oriented on materials storage					
Ms2	There is use of technology in materials storage					
Ms3	Materials storage plan is well designed					
Ms4	Materials storage is undertaken by experts in storage					
Ms5	The stores layout enables materials flows					
Ms6	There are specialized storage facilities in your organization					

	Material Controls					
M1	There is periodic materials replenishment					
M2	This company has a reorder level for their inventory					
M3	Materials are handled with specialized equipments					
M4	There is timely reviews of inventory quantity					
M5	The inventory checks for quality are frequently done					
M6	The organization make use of material bin cards to monitor and control					

SECTION C: Production Performance

The use of likert scale were 1= strongly disagree, 2= Disagree, 3= Not sure 4= Agree, 5= Strongly Agree.

		Rankings				
		1	2	3	4	5
P1	This company has registered consistent increment in the production levels					
P2	There is constant changes in the production capacities of the company					
P3	This company products meet the needed specifications					
P4	The company had not experienced stoppage as a result of lack of goods					
P5	The products of this manufacturer are competitive					
P6	The quality of inventory has assisted the company to increase its sales					

P7	The products of the company attracts less complaints from consumers as a result effective material management					
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