ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMAENT OF BUSINESS ADMINISTRATION

THE IMPACT OF MATERIALS MANAGENENT ON ORGANIZATIONAL PERFORMANCE: A CASE OF WALIA STEEL INDUSTRY PLC

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University in Partial Fulfillment of the Requirements for the Degree of Master of Business Administration (MBA) in Management

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September, 2021

Addis Ababa, Ethiopia

Declaration

I, the undersigned, declare that this thesis entitled ***"The Impact of Materials Management on Organizational Performance: A Case of Walia Steel Industry PLC"*** is my own original work. This thesis has not been presented for any other University and is not at the same time submitted in compliance of any other degree. All sources of materials used for the thesis have been properly acknowledged.

Abera Zerihun Belew	_____	_____
Name of Author	Signature	Date

Statement of Certificate

This is to certify that Abera Zerihun Belew has completed his thesis entitled ***"The Impact of Materials Management on Organizational Performance: A Case of Walia Steel Industry PLC)"*** is his original work and is submitted for examination with my approval as a thesis.

Yohannes Workaferahu (PhD)		17/09/2021
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School of Graduate Studies

This is to certify that the thesis entitled ***"The Impact of Materials Management on Organizational Performance: A Case of Walia Steel Industry PLC"*** was carried out by Abera Zerihun Belew under the supervision of Yohannes Workaferahu (PhD) submitted in partial fulfillment of the requirements for the Degree of Master of Business Administration complies with the regulation of the University.

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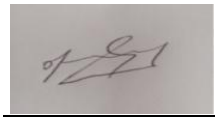
Temesgen Belayneh (PhD)		02/10/2021
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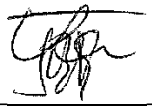
Yohannes Workaferahu (PhD)		02/10/2021
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Abbreviations

ABC – Always Better Control

ANOVA – Analysis of Variance

Df – Degree of Freedom

EMM – Effective Materials Management

HRM – Human Resource Management

IDC – Interdepartmental Collaboration

IM – Inventory Management

JIT – Just-In-Time

MIS – Management Information System

MRP – Materials Resource Planning

OP – Organizational Performance

OLS - Ordinary Least Square

PLC – Private Limited Company

PM – Procurement Management

R&D – Research and Development

SM – Storage Management

SPSS – Statistical Package for Social Science

WIP - Work-In-Process

Abstract

Recently, in the dramatically growing digital world, the management of materials plays a critical role on the performance of manufacturing companies. This study focuses on the impact of materials management on organizational performance of Walia Steel Industry PLC. Relevant data was gathered through structured questionnaire via five point Likert scale and analysis was made using SPSS version 23, so that a cross-sectional data type was used in the study. A total of 171 populations were used through census survey. The study adopted both explanatory and descriptive research designs in integration with a commonly used quantitative and qualitative research methods. The findings revealed that there was positive and significant association between effective materials management functions and organizational performance which was supported by interdepartmental collaboration among materials related departments such as inventory, procurement and storage managements. The main problems faced in materials management of the selected steel industry were weak materials management practices due to weak interdepartmental coordination of the firm. This study revealed that, in order to achieve significant cost saving, improved performance and production quality, firm competitiveness and increased profitability, priority should be given to the management of materials in Walia Steel Industry PLC. Recommendations were made for the focal firm to make the materials management system to be effective and efficient for the attainment of organizational performance through improved procurement, inventory and storage management system with better and strong collaboration. The results implied that there is a need of be aware of the functions of materials management so that the role and benefits of materials management practices should be examined and outlined for further investigation.

***Keywords**: Materials Management, Procurement Management, Inventory Management, Storage Management, Interdepartmental Collaboration and Organizational Performance*

CHAPTER ONE

INTRODUCTION

In this chapter, the author introduced the chosen research topic that consists of background of the study, statement of the problem and objective of the study. It also dealt with research questions, significance of the study and research hypothesis of the study. In addition, it provided scope and limitation of the study and how the author organized the whole thesis in the end.

1.1 Background of the Study

Materials management is an essential business activity, which tends to service and maintain a stable flow of materials or goods (components, raw materials, semi-finished components, etc.) that are necessarily required for manufacturing, logistics or other operations of a company. In particular, materials management is a science that deals with the planning, acquisition and supply of overall materials flows throughout the whole supply chain (Anton, 2017).

Materials management is a tool to optimize organizational performance and effectiveness in meeting customer service requirements at the same time adding to enhance organizational profitability through minimizing costs and making the best use of available resources. Materials management involves a series of processes which are essential to be integrated, coordinated and synchronized well to ensure that materials are available at their point of use when needed (Banjoko, 2000).

Materials management is the system for planning and overseeing all of the efforts that are mandatory to ensure that the precise quality and quantity of materials are correctly specified in a timely order, gotten at a reasonable price and most importantly, always available at the point of use when needed which made the manufacturing firms responsible for the coordination of planning, sourcing, purchasing, moving, warehousing and controlling the production activities in an integrative way for the firms in an optimum manner and at a minimum pre-determined level of costs to enhance their performance and to maximize their profitability. A poor materials management can bring about increase in costs during production and reduction in profitability leading to poor performance (Arnold, Chapman and Clive, 2008,).

Materials are the lifeblood and heart of any manufacturing companies and as a result no manufacturing firms can operate without them. They must be made available at the right price, at

the right quantity, in the right quality, in the right place and at the right time in order to co-ordinate and schedule the production activity in an integrative way for an industrial undertaking. A manufacturing firm will remain unstable if materials are under stocked, overstocked or in any way poorly managed. The main objective of materials management is to make sure that production materials are always available at their point of use when required (Taiwo, Claudius and James, 2012).

Taiwo et al., (2012) showed that materials management encompasses all operations management functions from purchasing of raw materials through the production processes to the final delivery of the end products. It brings together under one management responsibility for determining the manufacturing requirement, scheduling the manufacturing processes and procuring, storing and dispensing materials. These materials requirements planning, procurement of materials, inventory control, storage (warehouse), materials supply, transportation and materials handling are the management of materials functions (activities). Hence, materials management has been recognized as a source of opportunities to reduce production costs and can be treated as a profit center.

James M. U. (2012) had seen that, the introduction of advanced technology as a great improvement to the adoption of materials management as materials functions have many common databases. Therefore, effective and efficient materials management is fundamental to the survival and sustainability of businesses, industries and economy.

Organizational performance is the organization's ability to attain its goals by using resources in an efficient and effective method. Performance relates to the ability to attain goals or a specific mission (Jacobs, 2009). Organizational performance is measured by how an organization realizes its objectives, including increasing productivity and reduction of inventory in the short-run and increasing market share in the longer duration. Organizational performance is compared to performance of other organizations in the same industry. Organizational performance should be measured under various perspectives; these include quality, efficiency, productivity, profitability and sustainability (Thomas, 2017).

Organizational performance commonly comprises three special areas of firm outcomes; monetary overall performance (profits, return on assets, return on investment, etc.), product market overall performance (sales, market share, etc.) and shareholder return (total shareholder

return, economic cost added, etc.). Specialists in many fields are worried with organizational performance along with strategic planners, operations, finance, legal, and organizational improvement in that the concept of organizational performance is connected to the ideas of effectiveness and efficiency (Abdulaziz, 2019).

International researchers (Ogbadu, 2009 and Ondiek, 2009) have shown that materials account for more than fifty percent of the annual turnover in the manufacturing companies. Hence, priority should be given to materials management in manufacturing companies in order to achieve significant cost saving, improvement in production efficiency and increase in profitability and competitiveness.

Several scholars argued that, the world has changed enthusiastically due to the growing wonder of globalization and revolution in information and communication technology. Several organizations in today's business environment are forced to rising up their market share both domestically and internationally in order to survive and sustain their business growth. The challenge is to design an effective strategy to minimize the continued operational costs and maximize the return on investment to those organizations in order to improve product quality and provide reliable delivery dates through effective and efficient coordination of production and distribution activities (Cross, 2019).

Domestically from previous researches, materials management has attention after few years in Ethiopia but not this much satisfactory. For instance, Asmara (2015), Dawd (2015) and Tibebu (2016) revealed the role of materials management in Ethiopian construction industry which shows lack of proper construction materials management system in the country leading to a high construction costs and poor quality of construction products. Tezera and Yadesa (2017) argued that materials resource management and utilization is fundamental for organizations success or failure associated with the flow of materials to, through and out of an organization.

Based on this background, this study was intended to examine the impact of materials management on the performance of a manufacturing company with a particular reference to Walia Steel Industry PLC.

1.2 Statement of the Problem

Materials management is the coordination of efforts (planning, controlling, organizing and directing) towards achieving efficiency in the procurement, inventorying, storing, coordinating

and utilization of inputs of a manufacturing organization which is central to production activities and management (Akindipe, 2014). According to Edoze (2010), effective and efficient materials management functions contribute to the improvement of firms' performance that leads to a significant reduction in materials costs and helps to enhance organizational performance

According to Cross (2019), as a current interruption from inappropriate materials management and utilization; organizational performance, productivity and profitability are founded on the existence of the total margin output of any organization that was based on how materials are managed and used effectively and efficiently. As the materials purchased, inventoried, stored, integrated and distributed by many companies are not properly managed in order to ascertain the strategized objectives of the firm, the opposite has been the case.

The management of materials in a manufacturing organization therefore deserves attention and critical study in order to achieve uninterrupted production runs and enhanced performance in operations. An integrated material management system with electronic data processing support avoids many of the common volume data in a short time span and checking the actual against the preset norms, so as to take quick preventive and/or corrective actions. These objectives could only be achieved through integrated approach to material management functions by combining and coordinating procurement, inventory control, and storage (Akindipe, 2014).

Consequently, it is doubtful whether companies make use of effective planning, organizing, controlling and coordinating of their materials at their disposal before properly implementing them in order to achieve the desired goals or not. Different manufacturing companies practiced the side-effects of ineffective management of materials in the process of purchasing, inventory, storage and distribution of materials (Cross, 2019).

This research varies from the previous studies by focusing on the inclusion of interdepartmental coordination variable to the functions of materials management on organizational performance of the selected manufacturing company in contrast with studies conducted on service offering firms like government secondary schools of Addis Ababa City Administration by Molla (2017), Wollega University materials resource utilizations practices and its challenges by Tezera and Yadesa (2017), and construction industry by Asmara (2015), Dawd (2015) and Tibebu (2016).

From the results of different previously investigated research works, the practices of materials management of the manufacturing firms in Ethiopia need improvements. This encourages the researcher to focus on this topic and conduct research and then recommend what should be done in the area of materials management to enhance organizational performance terms of the functions of materials management such as materials inventory, materials purchasing, materials storage and interdepartmental collaboration of the manufacturing company.

Moreover, investigating the impacts of materials management which determines the firm's performance are those that desire clarification from this research work. This study aimed at investigating if there is any association between materials management functions and organization performance sought to analyze perceived impacts of selected explanatory variables on the targeted steel industry performance. Signifying the independent variables which impact the performance of the targeted steel industry has not yet been sufficiently investigated. Though taking this into consideration the insufficiency of previous investigation on the extent that independent variables have on organizational performance, the researcher attempts to give some insight contribution and enhances new findings of this study area in order to fill the knowledge gaps in empirical evidence.

Therefore, sightseeing the impact of materials management functions (procurement management, inventory control, storage management and interdepartmental collaboration) on organizational performance becomes an interesting topic for the researcher to conduct an empirically evidenced study particularly on Walia Steel Industry PLC.

1.3 Objectives of the Study

1.3.1 General Objective

This study has shown how materials management functions positively and significantly impacts the organizational performance of Walia Steel Industry PLC through statistical evidences.

1.3.2 Specific Objectives

The specific objectives of the study are:

1. To examine the impact of procurement management on organizational performance
2. To investigate how inventory management/control affects organizational performance
3. To examine the impact of storage management on performance of the organization

4. To examine the impact of interdepartmental collaboration on organizational performance

1.4 Research Questions

This study attempted to provide answers to the following research questions:

1. What is the effect of procurement management on organizational performance?
2. What is the impact of inventory management/control on organizational performance?
3. What is the effect of storage management on company's performance?
4. What is the impact of interdepartmental collaboration on organizational performance?

1.5 Significance of the Study

This research work was taken-up to show the significance of materials management to an aggregate performance of the organization, basically through procurement management, inventory management/control, storage (warehouse) management and interdepartmental collaboration. Moreover, the findings of this study benefit the selected manufacturing firm in understanding its materials management practices and provides a ground for the company to reduce its internal and external costs that results due to poor materials management practices. The results of this study may also contribute in defining new ways/strategies/methods and for decision making trends of materials management for manufacturing sectors. Therefore, this study possibly help by providing background for materials management as a reference for students, scholars and upcoming researchers to conduct future/further researches on similar area of study or any other sectors.

1.6 Scope of the Study

The study was focused on the impact of materials management functions in Walia Steel Industry PLC from manufacturing companies in Ethiopia. It also covered the management of procurement, inventory, and storage as well as the interdepartmental collaboration practices. The research used both primary and secondary data from the employees of each department and department heads of the firms with specific focus on those managers who are responsible for acquiring and managing/handling the steel industry's overall materials activities during manufacturing/production operations for the achievement of the targeted objectives.

1.7 Limitation of the Study

Lack of current locally researched articles/literatures to be reviewed in the area of management of materials in manufacturing sector in Ethiopia is one of the major lacks of study limitations of this study. Focusing only to one manufacturing firm is also a key limitation of this study rather than using two or more manufacturing firms. This study focuses on only one year of study than focusing on two or more years was another critical time span limitation.

Furthermore, the other core limitation of the study was a variable limitation in assessing only the impact of materials management functions on the performance of a selected manufacturing company in terms of procurement, inventory control, storage and interdepartmental collaboration practices excluding other functions of materials management from the stand point of the selected Steel Industry namely called Walia Steel Industry PLC, "Alemgena branch", only due to time and financial scarcity to investigate more manufacturing companies and other branches.

1.8 Organization of the study

The organization of this thesis paper was enclosed in five main chapters.

The first chapter, which is the introductory section of the research paper, was already mentioned at the beginning, is where the researcher gives a brief introduction and an initial overview of the whole work on the research topic.

The second chapter dealt with review of related literature. It provides theoretical foundation of the study through exploring the arguments of different theoretical perspectives and empirical evidences on materials management impact through materials procurement, inventory control, materials storage (warehouse) and interdepartmental collaboration practices on the performance of Walia Steel Industry PLC and at the end sets conceptual framework of the study.

The third chapter involves the research methodology which discusses and describes the research design and the research activities that the researcher undertaken. The research methodology includes research design, population, sample size and sampling techniques, types and sources of data, data collection procedures and instruments, methods of data analysis and presentation, reliability and validity of the study.

The fourth chapter is about data analysis and research findings where the researcher presents and analyzes the results of the questionnaire using appropriate statistical tools for discussion and interpretation in order to get good understanding about the research issue.

The last chapter (chapter five) contains summary, conclusion and recommendations which will summarizes the research findings, draws conclusion from the research study and explaining limitations and further recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter focuses on providing theoretical review and empirical models that are relevant to the present work of the study. The theoretical review for materials management is clearly set up discussing all the important factors related to management of materials. The purpose of this part of the research work is to set up a foundation for the theoretical frame of materials management concepts. Moreover, it also presents the findings of previous researchers work and different author's ideas that puts ground particularly for the analysis and interpretation of the data to make recommendations based on the impact of materials management functions on the performance of the organization resulting in profitability. Finally, it sets conceptual framework of the study that what the researcher wants to work on.

2.1 Theoretical Review on Materials Management

2.1.1 Natures of Materials Management

Due to the organizational disintegration of some of the basic management functions concerned with materials in corporate activity, the management of materials is many things to various individuals and business firms. Some overstress the role of purchasing while others totally reject this view and are ready to place stores and inventory control in the frontline of significance. Still other scholars argue that the quality maintenance and quality assurances have an equal impact if not more on performance, profitability and productivity through cost reduction in elimination rates. Some authors argued that control of quality from the source to final destination of the product improves organizational performance, productivity and company's image, and still materials handling and physical distribution logistics can contribute something more by assuring a steady flow of materials within and without a plant by sustaining the production channel in a continuous way (Datta, 2004).

At the present moment, materials management, which is seen as a system for assuring the availability of the products desired by customers at the best obtainable cost of manufacture is not anybody's total responsibility. Truly enough quality and cost of manufacture are production management's responsibilities, but materials management must see timely delivery of materials of proper quality and quantity at the work site. Pricing is a sales function, but materials management must be in a position to advice sales regarding the laid-down costs at various

destinations. Depending up on the customer demand, a flow of materials is initiated. Raw materials move from vendor to plant warehouse and hence to the manufacturing process. Thereafter, the finished goods move either to plant warehouse or to customers directly. Management of this whole flow of materials more often is called Materials Management. Implicitly, therefore, materials management is a social technology which demands professional expertise and advanced technology of its own (Datta et al., 2004).

2.1.2 Meaning and Scope/Function of Materials Management

The history of materials management indicates that materials management was initially used in the United States of America within the manufacturing industries. The scarcity of materials, which was felt during World War I in USA to a very large extent and it has become difficult for production managers to supply the war goods. This has created it necessary to organize the materials management department for managing large inventories in stores and to analyze the problems arising to control and economize inventory cost problems and shortage elimination. The concept of materials management was widely spread during World War II and included as an important function of management. This concept was welcomed by a number of major companies in USA specifically the manufacturing companies and construction firms as a new effective approach for dealing with materials problem. For instance at early 1939 by the management of Goodyear Company and a little decade later by General Electric (GE) to coordinate the complex movement of materials to, through and out of the factory (Chandra and Retish, 2007). Since different scholars and various books define materials management differently, there is no single definition for materials management.

Traditionally, some individuals are thinking the price companies paid to acquire the materials as the cost of materials which usually displayed on a company statement of annual reports. Since materials management concept is beyond this viewpoint, it concerns itself not only with these very high costs but also with a large number of other costs added to the price paid to acquire the materials. And also the focus of materials management is “the cost in materials” rather than “the cost of materials” to control each and every type of cost that is incurred on materials (Clive, 2012).

Datta, et al. (2004) indicates that from the viewpoint of national economic development, management of materials will be called upon to manage resources in a broader context than earlier. Technological changes and creation of new materials are demanding an altogether new

information system. The management of materials in this decade will be the center of information that will rate high in the economic context, and a new mode of management intelligence will be required to guide the most effective use of total resources. Materials management will be the source of facts to predict the future with reasonable accuracy through suppliers' information systems. It will be required to collect basic information on new technology, new process, new methods and new ideas. It will also be expected to know accurately and quickly about new materials, markets, their developments and available sources.

Kokila and Ram (2018) explains that material management is a term used to contain controlling the kind, amount, location, movement and timing of various commodities used in production by several manufacturing companies. Material management is the process of organizing, guiding, controlling and coordinating those activities concerned with materials and inventory requirements. Material management plays an important role in enhancing the performance of manufacturing firms. The effective management of materials should be considered at the input, process and output of manufacturing firms. It is important for planning and controlling materials in order to make sure that the right quality and quantity of materials are appropriately provided in a timely manner obtained at a reasonable cost and are available when needed.

Chandra et al., (2007) defines materials management as the process by which an organization is supplied with the goods and services that it needs to attain its objectives of buying, storing and movement of materials. Materials management is related to planning, procuring, storing and providing the appropriate material of right quality, right quantity at right place in right time so as to co-ordinate and schedule the production activity in an integrative way for an industrial undertaking. Most industries buy materials, transport them in to the plant, change the materials in to parts, assemble parts in to finished products, sell and transport the product to the customer. All these activities of purchase of materials, flow of materials, manufacture them in to the product, supply and sell the product at the market requires various types of materials to manage and control their storage, flow and supply at various places, which is only possible by efficient materials management.

Arnold et al. (2008) defines materials management as a special area of management which concerns itself with the management of materials resources. What firms are attempting to do in managing materials is to reduce and control the cost relating to this important resource, which normally accounts for about fifty per cent on average of the cost of production. So, materials

management creates a competitive advantage by delivering quality products/services on time and offering lower costs by cutting its own cost as well as cutting cost of purchased item, that account for over fifty per cent of the sales revenue which notifying superior value.

Materials management is a coordinating function responsible for planning and controlling materials flow. Its objectives are maximizing the use of the firm's resources and providing the required level of customer service (Chapman, Arnold, Gatewood and Clive, 2017).

According to Banjoko et al. (2000), materials management is a tool to optimize organizational performance and effectiveness in meeting customer service requirements at the same time adding to enhance organizational profitability through minimizing costs and making the best use of available resources. Materials management involves a series of processes which are essential to be integrated, coordinated and synchronized well to ensure that materials are available at their point of use when needed.

To ensure an effective material management in an organization, the overall installation and maintenance of an inventory control system which is a system that include all the chain from purchasing to warehousing should be implemented. For an effective material management, stock valuation is principal in deciding the integral worth of company's share. Most companies fail in material management because of the incapability to manage lead time. Thus, the initiation of inventory purchase and the time it gets delivered to the company is a giant determinant of the performance of an organization which is the actual output of the organization measured against its expected output (Adamu, 2020).

Ondiek et al. (2009) defines materials management as the function accountable for the coordination of planning, purchasing, obtaining, moving, storing and controlling materials in an optimum way so as to provide a predetermined service to the customer at a minimum cost.

Florence (2018) defines materials management as a process which integrates the flow of supplies into, through and out of an organization to achieve a level of service which ensures that the right materials are available at the right place, at the right time, in the right quantity and quality, and at the right cost.

Monday et al. (2012) saw materials management as a process of planning, procuring, storing, moving and controlling materials to use facilities, personnel, resources and capital effectively.

He also specified materials management as the process to provide the right materials at actual place, at the right time to maintain a desired level of production at a minimum cost. Successful implementation of material management concept in an organization leads to reduction in duplication of functions, improvement in delivery of materials among other benefits.

Materials management is an essential business activity, which tends to service and maintain a stable flow of materials or goods (components, raw materials, semi-finished components, etc.) that are necessarily required for manufacturing, logistics or other operations of a company. In particular, materials management is a science that deals with the planning, acquisition and supply of overall materials flows throughout the whole supply chain (Anton, 2017).

As stated by Chandra et al., (2007), the definition of materials management accepted by International Federation of Purchasing and Materials Management is: "Materials Management is 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 its requirements in time." This involves materials planning, purchasing, receiving, storing, inventory control, scheduling, production, physical distribution and marketing. It also controls the materials handling and its circulation. The materials manager has to manage all these functions with proper authority and responsibility in the material management department.

Hence, these definitions provide the scope of materials management which includes materials requirements planning, decision on purchasing, procurement of materials, inventory management, staffing, storing and warehouse management, production and distribution of finished goods at minimum cost at due date with the required quantity and quality (Ogbadu et al. 2009, Monday et al. 2012).

Fabio, Petrillo and Monfreda (2013) defines materials management as the function responsible for the coordination of planning, sourcing, purchasing, moving, storing and controlling materials in an optimum manner so as to provide a pre-decided service to the customer at a minimum cost. As of the definition it is clear that the scope of materials management is vast. The functions of materials management can be classified as purchasing, inventory control or management, stores management, material planning and control, standardization, simplification, specifications, value analysis, ergonomics, Just-in-Time (JIT).

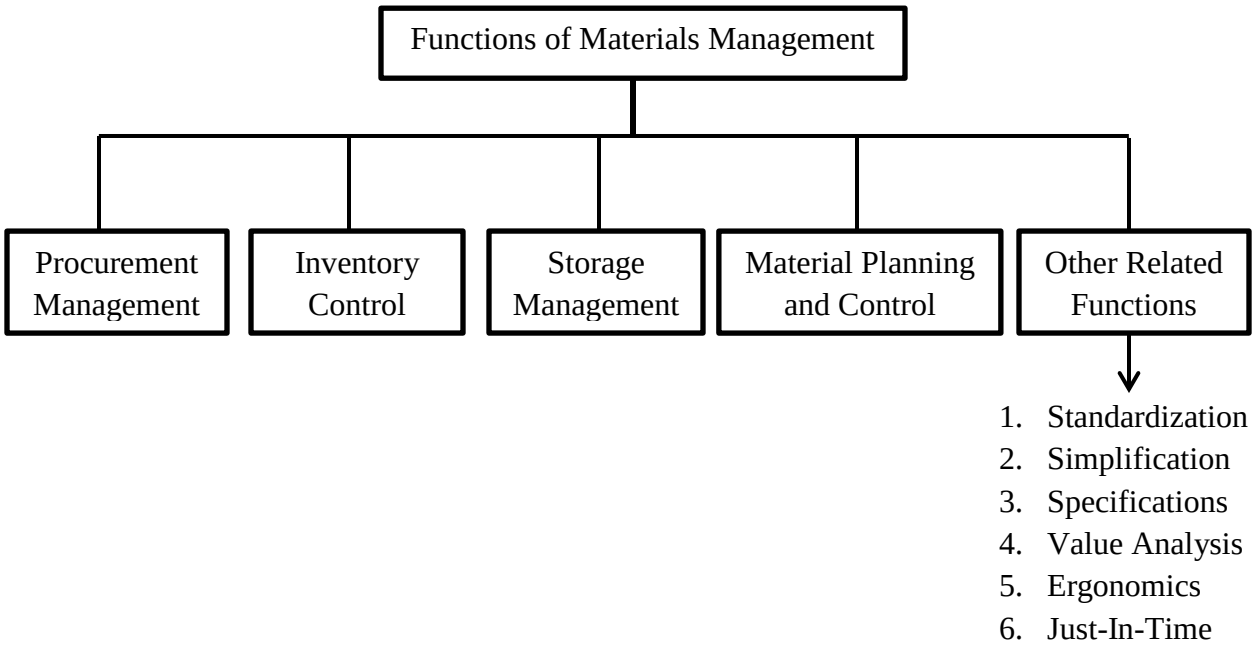

Figure 2.1: Functions/Scopes of Materials management

Source: Adopted Modification from Modern Production Management 1965 (2021)

Table 2.1: Differences between inventory management and storage/warehouse management

	Inventory Management	Storage/Warehouse Management
Complexity	-Simple -gives record of total items in specific store location	-complex -follow to manage the entire storage system
Control	Only tell us the quantity of a specific item we have at hand	-provides a firm with much more control over its operation
Integration	-take place in storage/warehouse management for order fulfillment	-related to other aspects of order fulfillment
System	-Tracks counts of individual items	-tracks units of storage spaces inside store and forecast demand

Source: Adapted Modification from Materials Management 2008 (2021)

2.1.3 The Objectives and Role of Materials Management

As Lenders (1992) stated, the objective of materials management is to solve materials problems from a total organizational perspective through controlling the effectiveness and performance of different materials functions, providing a communication network and controlling the system of materials flow. Furthermore, he explained about introducing the application of advanced technology into the company which provided further reasons to adopt effective management of materials, since material features have several common data needs that can share a common database.

According to Arnold et al. (2008) classical definition, the objectives of materials management is the acquisition of materials and services of right quality in the right quantity, at the right price from the actual source at the right time. Several evidences have been found that inefficient materials management would lead to high costs and low productivity. Hence, it is very necessary to take effective actions to manage materials in order to minimize costs and improve productivity and competitiveness.

The main objectives of materials management are to buy at the lowest price, maintain a low inventory, maintain continuity of supply, develop reliable and preferable sources of supply, minimize the overall costs of acquisition, develop and maintain good supplier relationships, achieve a high degree of cooperation and coordination with user departments. The fundamental objectives of the materials management are acquisition of materials and services of the right quality, in the right quantity, at the right time, from the right source and at the right price (Wenjie, 2014).

According to Saini (2016), the primary objectives of materials management department are low procurement price, high inventory turnover, low cost of acquisition and possession, continuity of supply, consistent quality, low payroll costs, favorable supplier relations and maintenance of good records while the secondary objectives of materials management are new materials, processes and products, economic make or buy decisions, standardization and product improvement.

Taiwo et al., (2012) and Florence et al., (2018) argue that, the objective of management of materials is to optimize organizational effectiveness and performance in attaining customer service requirements for its sustainability and additionally at the same time to enhance profitability of the company via minimizing costs and making the best use of available resources to attain competitive advantage in globally fast growing technologically advanced manufacturing industries.

According to Wenjie et al. (2014), the major role of materials manager is to ensure the free flow of materials in manufacturing industries which could be achieved through proper production planning, procurement, storage control and distribution.

Procurement: - has to do with determining order quantity, work processing, store requisitions, issue of requests, evaluation of quotations, supplier appraisal, negotiations, placing of contracts, progressing of deliveries and clarifying payments (Monday, 2012).

Storage: - involves the responsibility of the materials storage manager such as storage location, layout and equipment, mechanical handling, stores classification, coding and cataloguing, receipts of purchased items, assessment of materials, safety of stores, production issues, provision of cost data, stock records and disposal of obsolete goods (Chapman et al., 2018).

Production Control: - involves forward ordering, arrangement of materials for production, preparation of production schedules and sequences, issue of order to production emergency, action to meet material shortages, make or buy decision, quality and reliability, feedback and adjustment of supplies flow to production lines or sales trends (Chapman et al., 2018).

2.1.4 Importance of Materials Management

Management of materials offers superior promise as a cost minimizing tool. Healthier and scientific materials management can not only bring about significant cost savings but also result in improved production capacity of plants, saving of labor time, reduction in inventory costs, reduction in storage space, reduction in materials damage, smooth flow of production, easier production control and monitoring and reduced employee tiredness. Effective and efficient materials management is critical to the performance of several manufacturing firms. Hence, the importance of management of materials lies in the fact that any significant involvement made by the managers of materials in minimizing materials cost and enhancing productivity will help to improve organizational performance and the rate of return on investment (Henry, 2015).

2.1.5 Key Functional Areas of Materials Management

Barker et al. (1989) identified five key functional areas that management of materials cuts across which include purchasing, production and inventory control, quality control, storage and warehousing, and physical distribution (as cited by James, 2012, p-27). Purchasing and inventory control are the key elements for efficient material management (Akindipe, 2014). Whyback and William (1986) expanded the areas to include predicting demand and amount of materials requirements, good supplies and customer relationships, homegrown source of supply for foreign materials, developing skills of employees in management of materials, improved interdepartmental efficiency and Research and Development (R & D) in management of materials.

Ondiek et al. (2009) and James et al. (2012) have shown that purchasing, inventory control, selection of personnel for marketing, stores management and materials handling and their

training and placement was seen by the materials management department. The materials manager has to manage all these functions with proper authority and responsibility in the materials management department. This indicates that it is very essential to have materials management department in any organization to help the management in the production activities. It also helps in the marketing, sales promotion and control of all the types of materials for its quantity, quality and cost. And also, some scholars categorize these functions of materials management as primary function and secondary function.

2.1.6 Achieving Organizational Performance through Materials Management

Effective and efficient management of materials contributes a major role to achieve organizational performance and productivity through effective materials purchasing, acquisition, inventory control, materials handling and movement of materials.

2.1.6.1 Procurement Management

Procurement is a broader concept that includes purchasing products required for production, stores, movement, receiving, inspection and retrieve while purchasing describes the process of buying which covers the knowledge of the requirements, identifying and selecting a supplier and negotiating price. It is clear that since purchasing is responsible for controlling a dominant share of the company's revenue, it directly impacts organizational performance and profitability and the financial success of the overall business enterprise (Saini, 2016).

Ibegbulen (2015) states that, materials purchasing starts with the receipt of the purchase requisition from the store. Purchasing can be defined as the process of buying and procuring of materials, parts, components, equipment’s, spare parts, tools and supporting items required by industries or any organization to deliver its products as per customer requirements at the competitive rates and of good quality. The purchase order is therefore prepared based on the contents of the requisition.

Purchasing can simply be considered as the process of buying. Many assume purchasing is simply the responsibility of the purchasing department. However, the function is much broader and, if carried out effectively, all departments in the company may be involved. Obtaining the right material, in the right quantities, with the right delivery (time and place), from the right source, and at the right price are all purchasing functions (Chapman, 2017).

David and Victor (1997) specified that, for any function to be successful, it must establish clear measurable objectives and work wisely to achieve them. To maximize its contribution to the firm's overall performance, purchasing must establish the following two overarching objectives:

1. To ensure economic supply by the procurement of goods, supplies, and services to keep the company in operation
2. To contribute to profits by efficiently controlling the flow of money passing through the operation

To be the unbeatable among competitors and prepare better for long term progress, organizations should integrate the best procurement practices such as supplier development, value engineering, cost management, strategic sourcing and supplier incorporation to its operations. Due to the escalation of competition in the global market organizations have resorted to the implementation of procurement strategies that lower prices and increase quality, meet expectations, reduced production time, speedy response and financial requirements. Thus, procurement management has contributed to the improvement of internal activities in order to assist the organization's external activities (Masudin et al., 2018).

Chandra et al., (2007) stresses that, the most important thing to bear in mind while planning for the achievement of profit is to procure the right quality and quantity at the right price. Procurement in highly technical areas requires skilled and experienced purchasing managers. Purchasing is the process of buying. Cost improvement is the result of learning effect among employees, reflecting the development of skill that occurs when a task is done repeatedly.

Ibegbulen (2015) indicates that, the acquisition circle consists of recognizing, defining and describing the need, transmitting the need, investigating and selecting the supplier, order, receipt and inspection of goods supplied, auditing the invoicing and closing the order. The effect of acquiring defective materials can be reduced by buying from the right suppliers at the right price without compromising quality.

On the average, manufacturing firms spend about fifty per cent of their sales in the purchase of raw materials, components, and supplies. This gives the purchasing function incredible potential to improve performance and increase profits. Purchasing is responsible for establishing the flow of materials into the firm, following up with the supplier, and accelerating delivery. Missed deliveries can create disorder for manufacturing and sales, but purchasing can reduce problems for both areas, further adding to the profit and firm's performance (Chandra and Retish, 2007).

The objectives of purchasing include; obtaining goods and services of the required quantity and quality, obtaining goods and services at the lowest cost, ensuring the best possible service and speedy delivery by the supplier and developing and maintaining good supplier relations and developing potential suppliers

Hence, procurement has to do with determining order quantity, work processing, store requisitions, issue of enquiries, evaluation of quotations, supplier appraisal, negotiations, placing of contracts, progressing of deliveries and clarifying payments (Ogbadu, 2009).

i. Parameters of Purchasing

According to Buffa (1965), the success of any manufacturing activity is largely dependent on the procurement of raw materials of right quality, in the right quantities, from right source, at the right time, at right price right contractual terms, right material, right place, right mode of transportation and right attitude popularly known as the **10"R"s** of the art of efficient purchasing. They are explained as the basic principles of purchasing.

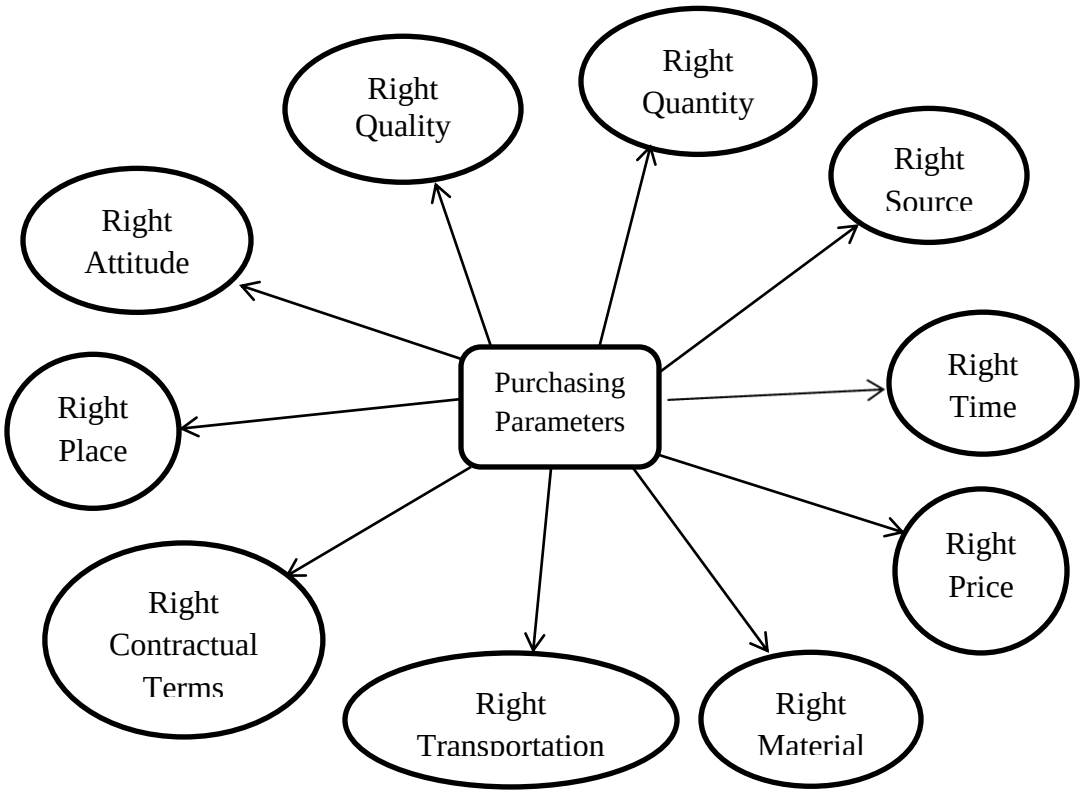

Figure 2.2: Purchase Parameters

Source: Adopted Modification from Modern Production Management 1965 (2021)

ii. Procedures of Purchasing

Chandra et al. (2007) revealed that, the procedures for purchasing describes the operating methods and instructions in a written form as manual or journals of purchasing to be followed as per the policy of purchasing to carry out duties and tasks of buying a number of materials of the organization needed for production or otherwise. This procedure is the best practice to be followed and identified through benchmarking comparisons with leading organizations. Procedures are information followed for successful purchasing strategies. There is no standard method describing this procedure but it will be guide to the new employees, purchasing persons, reference and clarification for experience personnel and a routine method to be followed. Time to time management must review and evaluate the procedure of purchasing to suite the changes and development needed.

According to Saini, (2016), since these procedures of purchasing (purchasing cycles) are the functions carried out by purchasing personnel, they can be stated as: recognition of need, description of need, selection of suppliers, determination of price, preparation of purchase order, placing the order with a selected supplier, monitoring and follow up the order, receiving the ordered materials, checking and approving for payment to supplier and record keeping.

Depending upon the size of organization, types of materials purchased, quantity and variety of items purchased and number of departments requiring various types of materials, it is a management function to decide whether to follow centralized method or decentralized method of purchasing. Hence, the purchasing department normally follows centralized or decentralized methods of purchasing (Retish, 2007).

Centralized purchasing: In centralized purchasing, one purchase department or its single authority will be authorized and made responsible to make all types of purchases of all the departments. Requisitions are supplied from all the departments to a centralized purchase system. This type of purchasing is suitable to industries having single plant or number of plants in nearby location, which are manufacturing similar products at various plants, needs bulk purchase of few items. The purchase procedure is same and will be followed in long run (Buffa, 1965).

Decentralized purchasing: Decentralized or localized purchasing permits every individual department or its authority to make purchases of its own requirements of materials and is responsible to make its deliveries. In industries having plants at different locations and manufacturing varieties of products cannot have centralized purchasing. These types of

industries require different types of materials and have lot of changes in purchasing policies and procedures. The decentralized type of purchasing system will be suitable to them (Buffa, 1965).

From Saini, (2016), there are two major forms of purchasing activities that take place in an organization; tactical purchasing and strategic sourcing:

Tactical Purchasing: - The organizations require some materials for the smooth flow of production. The day-to-day management of materials flow is called tactical purchasing. These activities generally ensure that products and services are delivered to the right internal people at the right time but are often not carried out using a long-term horizon. (Saini, 2016)

Strategic Sourcing: - Strategic purchasing is the purchasing which affects the long-term profitability of an organization. Strategic sourcing is a part of purchasing activities but in a border sense that may include members from other than purchasing department like from engineering, quality, design, manufacturing, marketing and accounting department for managing, developing and integrating with supplier capabilities to achieve competitive advantages like cost reduction, technology development, quality improvement and cycle time reduction (Saini, 2016).

Tiwari, (2016) classifies purchasing mainly into two as individual purchase and organizational purchase.

Individual Purchase: - Individual or personal purchase includes those types of items or products which are purchased for personal or family consumption. Social factors, cultural factors, personal factors and psychological factors are generally the main factors that influence individual purchase behavior (Tiwari, 2016).

Organizational Purchase: - A purchase will be considered to be organizational if it is made in the name of a company or organization, regardless of size, from a medium sized company up to a multinational or state company. Organization consists of business, industries, retailers, wholesaler, government and non- government organizations (Tiwari, 2016).

2.1.6.2 Inventory Management

According to Kotler (2012), inventory management refers to all the activities involved in developing and managing the inventory levels of raw materials, semi-finished materials and finished good so that adequate supplies are available and the costs of over or under stocks are low. Inventories are essential for keeping the production controls moving, keep the market going

and the distribution system unharmed serving as key drivers for production and distribution systems of organizations.

Ibegbulen et al. (2015) and Cross et al. (2019) advocates that inventory control enhance organizational profitability and performance by reducing costs related with storage and handling of materials. Inventory control is a means by which materials of the right quality and quantity are made available when needed with due regards to the economy of shortages, ordering cost, purchase price and working capital.

Inventory control determines the degree of stock holding of materials. It equally makes it possible for materials manager to carryout accurate and efficient operation of the manufacturing organization through pairing of individual segment of the total operation and it requires the process of assessing of stock into the store house and the issue of stock. Comparatively, shortage of materials can lead to disturbance of products for sales which hurts customer relations while machines and equipment becomes underutilized. So, a company can only realize substantial savings by using a rational procedure for inventory control management (James et al., 2012).

Masudin (2018) indicated that poor inventory management affects sales, customer services and revenue, which impact an organization's performance. Maintaining accurate records of inventory improves customer service by providing knowledge of customers' demands; improves organization's productivity by ensuring that materials are available when needed and maximizes revenue by avoiding holding excess inventory that will eventually end up being written off.

Arnold et al. (2008) defines inventories as materials and supplies that a business or institution carries either for sale or to provide inputs or supplies to the production process. All businesses and institutions require inventories which are a substantial part of the total assets. Financially, inventories are very important to manufacturing companies. He specifies that, on the balance sheet, they usually represent from twenty per cent to sixty per cent of total assets. As inventories are used, their value is converted into cash, which improves cash flow and return on investment. There is a cost for carrying inventories, which increases operating costs and decreases profits. Hence, a good inventory control management is essential for sustainable organizational performance, competitiveness and profitability.

According to Baker (2009), inventory management is responsible for planning and controlling inventory from the raw material stage to the finished goods stages provided to customers. Since inventory results either from production or supports, it could be managed separately and must be coordinated. Inventory must be considered at each of the planning levels and is part of production planning, master production scheduling, and material requirements planning. Production planning is concerned with overall inventory, master planning with end items, and material requirements planning with component parts and raw materials.

Morgan (2009) defines inventory management system as a set of policies that controls and monitors inventory level and determine what level should be maintained, how large orders should be made and when stock should be replenished so as to support the operation of the business. Inventory is the availability of any stock or resources at right quantity and quality used in an organization. Other scholars define inventory management as a science-based art of ensuring that just enough inventory stock is held by an organization to meet demand.

Maximum customer service, low-cost plant operation and minimum inventory investment are the core objectives what firms are wishing to maximize organizational performance and profit. The costs which are used for inventory management decisions are item cost, carrying costs, ordering costs, stock-out costs and capacity-associated costs. The role of inventory management is arranging and organizing the overall operation of the organization, maintaining the transactions of sales appropriately and keeping the level of stock to satisfy customer's needs (Clive, 2017).

The achievement of inventory management is satisfying customer and driving profit by keeping the required inventory items and balancing the right order as customer needs to improve organizational performance and competitiveness. These reasons for keeping inventories includes; to stabilize production, to take advantage of price discounts, to meet the demand during the replenishment period, to prevent loss of order (sales), to keep pace with changing market conditions and sometimes the organizations have to stock materials due to other reasons like suppliers minimum quantity condition, seasonal availability of materials or sudden increase in prices (Morgan, 2009).

An automated and technologically advanced inventory management system is essential to approve the quality of control in stock handling and the area of customers served by consumer

goods. Since all businesses have limited working capital, inventory management is responsible to make decisions on what type of materials bought, the quantity and quality bought and how much bought within the capital limits. Inventory is a major consumption of capital and for this motive; the objectives of inventory management are to increase profitability, to forecast the impact of company policies on inventory levels and to minimize the total cost of logistic activities. Hence, an effective inventory management is very necessary for any business's successes (Baker, 2009).

Also, Fitsum (2018) indicated that effective inventory management is essential in the operation of any business and keeping stock is used as an important strategy by companies to meet customers' needs without taking the risk of frequent shortages while maintaining high service level. Effective inventory management gives the chance to make continues competitive advantage and improvement of the competitive position of the companies. Moreover, it enhances the profit margins of the companies since it will reduce the operational and inventory cost thereby increase in organizational performance.

Ackah & Ghansh (2016) point out that, on the contrary, poor inventory management affect the organization cash flow, reduce efficiency and adversely affect the procurement performance out of the capital. The inventory system that helps the operating policies and organizational work flow for restocking and controlling materials in store will be suspended. Surpluses cause financial hardships because they tie up capital and shortages lead to poor operational results, but satisfactory and scientific inventory control eliminates these shortcomings and thus proving its importance. Accordingly, management of inventory system requires an appropriate system of making the decisions to keeping track of items in inventory and how much and when the order is applied (as cited by Fitsum, 2018, p-16).

Tekalign (2020), on his study "Assessing the inventory management practices, a case of manufacturing firms in Hawassa City, Ethiopia", concluded that, effective and efficient inventory management practices will always provide a competitive advantage to business, regardless of its nature. He determined that manufacturing firms found in Hawassa are good at managing their inventory since they appropriately use the various inventory management tools; JIT, ABC, and MRP to list few. It was predicted in their higher means of efficiency levels in inventory management and their widely application of theories of inventory management in their operations. He also revealed that, these manufacturing organizations heavily depend on

computerized and automated methods of inventory management, recording and costing techniques.

Inventory management increases organizational performance, productivity and profitability through predicting, controlling and managing inventory as well it minimizes costs resulting in greater profitability, accuracy, improvements & time savings in addition to the reduction of fixing costly mistakes that can result in substantial cost savings across an organization. Inventory management improves decision-making, rapid and accurate data collection that enables the access for real-time business intelligence across all areas of the company's issue and event. It escalates customer satisfaction, responding to trends, seasonality, promotions and changing marketing conditions results in having the right products in stock for customers. Customer service tools integrated within inventory managements equips the whole company to deliver consistent and personalized care for customers. Hence, inventory management helps businesses become successful and it plays a decisive share of any business success (Simon, 2018).

Agu (2016) revealed that inventory consists of stock of raw materials, work-in-process, spare parts, consumables for production and finished goods for sale. Thus, inventory control includes control over raw materials, spare parts, consumables, partially finished goods, and finished goods. The commonly used techniques of inventory control involve; determination of various levels of materials, Economic Order Quantity, ABC Analysis, perpetual Inventory System, materials requirement planning, vendor managed inventory system and so on.

1. **Determination of various levels of materials**

The store manager plays an important role in deciding upon the various levels of materials. In order to ensure that the optimum quantity of materials purchased were stocked neither less nor more, the store manager applies scientific techniques of material management. Fixing of certain levels for each item of materials management techniques are not permanent but require revision according to the change in the factors which determine these levels. The following levels such as re-order level, maximum level, minimum level, average level and danger level are generally fixed (www.gurupko.com).

The maximum level is that level of stock which can be held at any time. It is the level beyond which stock should not be maintained. The purpose is to avoid over stocking and thereby using

working capital in a proper way. This level is fixed after taking into account the factors such as rate of consumption, lead time, availability of capital, storage capacity and cost of maintaining stores including insurance cost.

Minimum level is the level below which the stock of an item should not fall. This is known as safety or buffer stock. An enterprise must maintain minimum quantity of stock so that the production is not hampered due to non-availability of materials. This level is fixed after considering the factors like re-order level, lead time and rate of consumption.

2. Economic Order Quantity

Agu et al., (2016) argued that the economic order quantity, known as EOQ, represents the most favorable amount to be ordered each time as new orders are placed. The amount to be ordered is called economic order quantity because the purchase of this size of material is most economical. It is helpful to determine in advance as to how much should one buy when the stock level reaches the re- order level. If large sizes are purchased, the carrying costs would be large. On the other hand, if small amounts are purchased at frequent intervals the ordering costs would be high. The economic order quantity is fixed at such a level as to minimize the cost of ordering and carrying the stock. It is the size of the order which produces the lowest cost of material ordered. While determining the economic order quantity, these three cost factors such as the cost of the material, the inventory carrying cost and the ordering cost are taken into consideration.

3. ABC Analysis

According to Biyani (2012), ABC Analysis technique of inventory control is also known as Always Better Control technique. ABC analysis is an analytical method of control which aims at concentrating efforts on those areas where attention is needed most. It is a principle of selective control. The emphasis of ABC analysis technique is that the management should concentrate its energy in controlling those items that mostly affect the organizational objects. Manufacturing concerns find it useful to group the materials into three classes on the basis of investment involved.

A-Item: Very tight control, the items being of high value. The control need be exercised at higher level of authority.

B-Item: Moderate control, the items being of moderate value. The control need be exercised at middle level of authority

C-Item: The items being of low value, the control can be exercised at grass root level of authority *i.e*., by respective user department managers

4. Just-In-Time (JIT)

Fabio et al., (2013) states that; the materials management, flow of materials, its storage and handling are assisted using computer and computer-aided equipment's. The recently developed Just-In-Time (JIT) technique by a Japanese Taiichi Ohno, used at the Toyota Motor Company, has greatly helped the manufacturer to modernize the flow and supply of materials exactly just in time when they are required in order to save the cost and increase the production and efficiency in manufacturing. In Just-In-Time (JIT) manufacturing, appropriate materials are made available to each operating position at the required time in the right quantity. Just-In-Time (JIT) is a systematic material handling and manufacturing concept to avoid waste in materials and manpower. It has changed employee's attitude, work habits and awareness of quality assurance.

Product quality is one of the significant attributes for every industry today. It requires planning and organization of every manufacturing resource brought and managed on high quality and performance. Just-In-Time (JIT) is a technique based on quality management methodology, which helps the industries to achieve their target and attract their quality product to customer (Rakish, 2014).

The phase Just-In-Time is used since the system operates with low WIP (Work-In-Process) inventory and often with very low finished goods inventory. Products are assembled just before they are sold, subassemblies are made just before they are assembled and components are made and fabricated just before subassemblies are made. This leads to lower Work-In-Process and reduced lead times. To achieve this advantage, organizations have to be excellent in other areas e.g. quality (Buffa et al., 1965).

According to Chandra (2007), Just-In-Time is viewed as a production approach which aims to improve overall productivity through elimination of waste and which leads to improved quality.

JIT provides an efficient production in an organization and delivery of only the necessary parts in the right quantity, at the right time and place while using the minimum facilities.

Chandra et al. (2007) described that, the main objective of using JIT is to minimize the cost of the product by improving productivity and quality. The factors, which can be considered for these improvements are product design, use of better technology, minimizing use of special equipment, reducing lead-time of manufacturing and supply of materials, reducing batch size, use of pull system and simplifying set up.

5. Perpetual Inventory Control System

Perpetual inventory record is a continual account of inventory transactions as they occur. At any instant, it holds an up-to-date record of transactions. At a minimum, it contains the balance on hand, but it may also enclose the quantity on order but not received, the quantity allocated but not issued, and the available balance. The accuracy of the record depends upon the speed with which transactions are recorded and the accuracy of the input. Because manual systems depend on the input of humans, they are more likely to have slow response and inaccuracies. Computer-based systems have a higher transaction speed and reduce the possibility of human error (Arnold et al., 2008).

6. Material Requirements Planning

Azeb (2017) states that material requirement planning is a scheduling procedure for production process that have several levels of production given information describing the production requirement of several finished goods of the system, the structure of the production system, the current inventory for each operation and the lot sizing procedures for each operation, material requirements planning determines a schedule for the operation and raw material practice.

Robert (2002) states that the main function of material requirements planning is to guarantee material availability, that it used to procure or produce the requirement quantities on time both for internal purpose and for sale and distribution. This process involves the monitoring of stock and in particular, the automatic creation of procurement proposals for purchasing and production. Materials management planning tries to strike the best balance possible between optimizing the service level and minimizing costs and capital lock up (Eunice, 2011).

Material requirements planning system is an inventory management information system concerned with getting the right materials to the right place at the right time (Akindipe, 2014). The material requirements plan is a plan for the production and purchase of the components used in making the items in the master production schedule. It shows the quantities needed and when manufacturing intends to make or use them. Purchasing and production activity control use the material requirements planning to execute the purchase or manufacture of specific items (Chapman et al., 2017).

2.1.6.3 Storage (Warehouse) Management

The materials storage has viewed in many ways and defined differently by different scholars. Cross (2019) argued that materials storage includes a careful management of the stock and maintaining a perfect control over them. Management of materials is one of the events performed by materials managers and can be an efficient tool for saving cost and holding up profit. Storage of materials depends on the nature and how they are used in the manufacturing procedures. Profits can be achieved if managers effectively and successfully handle issues relating to stores location, layout and equipment examination, safety of stores, production issues, stock records and disposal of obsolete materials.

Store keeping is the activity of receiving, storing or distributing supplies. The duty of the stores is to receive, store and issue materials. The store is separated into receiving section, tools stores, general stores, raw materials stores, and finished parts stores and so on. The receiving section receives all incoming materials, checked the correctness of the quantity and quality received, arranges for inspection and subsequently sends the materials to the respective stores along with a report called Goods Inwards Note or Materials Receipt Note (Fessha, 2004).

Different scholars argued that the functions of management uniquely describes managers' job. The most commonly cited functions of management which equally applicable for storage management are warehouse planning, leading in warehouse, directing, supervision, motivation and communication. Additionally, warehouse controlling and warehouse organizing are also key management functions which are linked closely with materials warehouse (Asmelash, 2017).

According to Kibrom (2019), a warehouse is a commercial building used for the storage of goods. The most important element of warehousing is order processing which generally refers to

the workflow coupled with delivering products ordered by customer. The primary objective of most warehouses is to facilitate the movement of goods from suppliers through the supply chain to the end consumer while meeting the customers' demand in a timely and cost-effective manner. In the old days of warehousing, inventory was seen to represent the wealth of a company. However, these days this is not the case anymore. Instead, several companies have noticed the high cost associated with holding inventory. In practice, however there are intervening factors such as meeting customer demand and expectations that make it hard to operate without inventory.

Baker (2009) indicates that traditional warehousing is declining since the last decade of the 20th century with the introduction of Just-In-Time techniques which are specially engineered to enhance the return on investment of a business by moderating in-process inventory. Recent developments in marketing field have headed to the development of warehouse designing style, where the same store is used for storage and as a showroom and retail store. These types of storage are equipped with tall and wider heavy-duty industrial stands with items which are ready for sale that are mostly placed at the bottom of the buildings.

Asmelash (2017) revealed that, in order to maximize company's efficiency, store must be fully integrated with the preceding and succeeding operation that is goods in wards and goods issued. Instead of being considered as a loss center it should be studied, planned and managed as profit center. Profits (except on direct sales) are unlikely, but, as in the situation of other supplies activities, savings made here can contribute directly to company profit, if not wasted elsewhere in the business. Stores equipment must be appropriate for the wise preservation and quick subjects of the materials stored. Safety in stores should be a major consideration, for this it is an area with an unpredictably high accident rate. Even in a small factory the location of the stores can affect work flow and thus productivity and performance. The sitting of stores at the center of gravity of demand appears an attractive solution.

Faber (2013) has been defined warehouse management as the combination of planning, decision-making and controlling inbound, storage and outbound flows. Warehouses have always been paid a great deal of attention from managers due to the large potential impact it can have in creating customer value. Like most areas the key objectives for managing warehouses have changed over time to create additional competitiveness. The first objectives within warehousing

are related to maximizing the utilization of resources within the warehouse. The more expanded concept is inventory control which aimed to maximize profits while providing good customer service.

Arnold et al., (2008) express that, the objective of a warehouse is to minimize cost and maximize customer service. To do this, efficient warehouse operations; provide timely customer service, keep track of items so they can be found readily and correctly, minimize the total physical effort and thus the cost of moving goods into and out of storage and provide communication links with customers. Operating a warehouse involves several processing activities in which the efficient operation of the warehouse depends upon receiving goods, identifying the goods, dispatching goods to storage, hold goods, pick goods, dispatch the shipment and operate an information system.

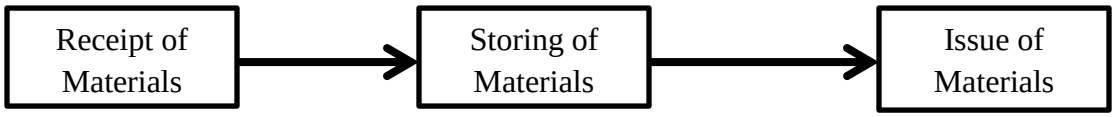

Figure 2.3: The Organization of Store

Source: Adopted Modification from Materials and Financial Management 2007 (2021)

i. Objectives of Store Keeping

The objectives of stores management is to assist the production department by procuring the required materials and goods and deliver them at appropriate time. It provides the service to all other departments along with production department to supply their requirements. The service provided by the stores is divided in four parts (Retish et al., 2007).

1. To procure and maintain the requirements of raw materials, components, parts, equipment, tools and other materials needed for operations and processes and to store them.
2. To provide maintenance of materials, spare parts and office materials.
3. To store scrap, discarded and obsolete goods.
4. To receive and issue finished products as stock

ii. Functions of Stores

Buffa et al. (1965) and Chandra et al. (2007) set classification for the functions of stores as:

1. To receive raw materials, components, tools, equipment's and other items and account for them.

2. To provide adequate and proper storage and preservation to the various items.
3. To meet the demands of the consuming departments by proper issues and account for the consumption.
4. To minimize obsolescence, surplus and scrap through proper codification, preservation and handling.
5. To highlight stock accumulation, discrepancies and abnormal consumption and effect control measures.
6. To ensure good housekeeping so that material handling, material preservation, stocking, receipt and issue can be done adequately.
7. To assist in verification and provide supporting information for effective purchase action.
8. To keep up-to-date records of all incoming and out-going materials to match with the balance in the stores.

Clive et al., (2008) specified that, warehouses are designed and located depending upon the type of materials to be stored, the design of stores and methods of storing and withdrawing the materials will depend on how frequently the materials are received and stored inside the storing rooms and storing places and withdrawn from there. Every organization has to plan the type of warehouses according to their needs and production requirements and categories of materials purchased and stored. These warehouses are classified in two categories as:

a. Physical size and location of store

b. Functional store

Physical Stores: - In physical consideration, the stores are located at various places and locations are of different sizes. Depending upon quantity and type of materials kept in them, their sizes will be determined as; central warehouse, temporary or transit warehouse, sub stores, storing cites, departmental stores and company warehouses (Arnold et al., 2008).

Functional Stores:- are the places where the materials of particular use are stored and supplied for further production operation and process and classified as; raw materials stores, spare parts stores, general supplies stores, stores for tool room materials, packing stores, receipt stores or quarantine stores, work-in-process stores, finished goods stores, stationary stores, bonded stores, cold storage or refrigerated store, dehumidified and flammable stores, open shed and open yards storages (Arnold et al., 2008).

2.1.6.4 Interdepartmental Coordination (Collaboration)

Uzma and Muhammud (2012) describes that several mid to large sized organizations are consists of different departments, in order to keep the different operations separated and handled by the skilled experts in each particular area. But, in order for a business to be successful, organizations need to implement and maintain the effective interdepartmental communication. One of the major reasons today that organizations fail is due to the lack of internal coherence and proper communication systems among various departments. Interdepartmental communication breakdowns can have a serious impact on the efficiency of an organization and increases the stress level among employees, ultimately resulting in poor performance.

Research conducted by Uzma and Muhammud (2012) indicates that, organizations are composed of social components that come together for production, designed by individuals with diverse opinions and awareness to accomplish a common goal. Most of the organizations do not give the due attention on providing the employees with intra-organizational cooperation and collective sense for performing their jobs. Consequently, employees remain unfamiliar with dynamic, competitive and uncertain situations in the external world. Therefore, a well-designed and effective interdepartmental communication system is essential for adapting organizational and managerial tasks, and also sharing the necessary information inside and outside of the organization.

James (2012) discloses that an appropriate organizational structure can be determined as a result of a proper and effective interdepartmental communication system facilitated by the human resource management which is the responsible one for the implementation of effective interdepartmental communication system of an organization in order to achieve better outcomes. And also he argued that, human resource management is responsible for the effective functioning of interdepartmental communication processes and it must be the prime medium for open and integrative communications processes within an organization.

In today's rapidly changing and competitive business environment, it is significantly vital for human resource management to emphasize broadly on developing and strengthening excellent managerial skills to foster effective interdepartmental communication system among different functioning of departments (Wayne and Joseph, 2016). Human resources sustain to stabilize the

requirements of various diverse tasks of operative and managerial professionals, manager and subordinates advocate, corporate partner and private adviser. This might look like typical business functions that are not expected to make an uncontrolled hurry of human resource individuals preparing themselves for the future. Nevertheless, very little interdepartmental communication is found that might result from personal conflicts, unsound hiring and lack of interest from the top management. The enduring challenge for organizations is to determine original deliverables and to maintain enduring relationships with consumers (Brown, 2008).

Kalla (2005) stated that the fundamental role of interdepartmental communications is to build and encourage employee relations, establish trust, providing timely and reliable information and thereby contributing to general motivation, particularly in times of change and stress. He also viewed that the main goals of interdepartmental communication with respect to its significant role in an organization are: to develop a mutual sense that employees are the vital asset to the organization, to increase employees morale and foster friendliness among workers and management, to update workers regarding internal changes, to inform compensation and benefit plans, to enhance employees understanding of the organization and its products, organizational ethics and culture, and external environment and to encourage employees in order to become more productive, quality oriented, and entrepreneurial.

Generally, interdepartmental collaboration plays a vital role in an organization's success, and organizations need to fill the gaps between what the customers expect and what they deliver. In large business organizations, many individual departments are challenged with the daily challenge of communicating successfully with internal shareholders in order to attain organizational performance and profitability (Uzma et al., 2012).

2.1.7 Organizational Performance

As Adamu (2020) revealed, organizational performance has been defined in a different way by different intellectuals but some of them are in agreement that organizational performance describes the achievement of established goals. Organizational performance is the organization's ability to attain its goals by using resources in an efficient and effective method. Performance relates to the ability to attain goals or a specific mission (Jacobs et al., 2009). James (2012) carried out an empirical study on material management using chi square as a statistical tool and

found efficient materials management is positively related to firm success. Thus, through a well-organized organization of production materials, cost effectiveness can be achieved in an organization

Organizational performance is measured by how an organization realizes its objectives, including increasing productivity and reduction of inventory in the short-run and increasing market share in the longer duration. Organizational performance is compared to performance of other organizations in the same industry. Organizational performance should be measured under various perspectives; these include quality, efficiency, productivity, profitability and sustainability (Thomas, 2017).

Organizational performance center on inputs (the effort put in) and outputs (the result of the effort put in). According to Stukhart (2007), performance is the sum of the effects of work, because they provide the strongest relationship with the organization's strategic objectives, the customer's satisfaction and the economic contributions. Florence (2018) asserted that performance refers to both behavior and results. Behaviors are therefore arising from the performer and turn the performance of an abstract concept into concrete action**.**

Cross (2019) believed that the organizational performance consists in achieving the goals that were given in the joining together of enterprise orientations. Performance is seen as a state of the enterprise's competitiveness, reached by a level of effectiveness and efficiency that ensure sustainable market existence (Dagim, 2018). He also considered organizational performance as subjective and interpretative, not least, being related to the cost lines, which emphasizes the ambiguous nature of the concept. Rolstadas (1998) also believed that the performance of an organizational system is a complex relationship involving seven performance criteria that must be followed: effectiveness, efficiency, quality, productivity, quality of work, innovation and profitability.

Many business companies have failed to attain their growth targets in revenue and profitability. Though, having a clear growth strategy and strong execution of infrastructure is linked to the performance of an organization in achieving the targeted profit. Cross (2012) recommended that methods in which management of materials applied through effective purchasing practices can help to minimize materials cost and increase organizational performance and profitability. These

include obtaining materials at lower prices through development of new sources, effective price negotiations with vendors and using cost-price analysis to determine the right price for materials, managing taxes payable, reducing the cost of packaging, optimizing transportation costs, ensuring right material's quality and adopting import substitution.

According to Abdulaziz (2019) organizational performance commonly encompasses three special areas of firm outcomes; monetary overall performance (profits, return on assets, return on investment, etc.), product market overall performance (sales, market share, etc.) and shareholder return performance (total shareholder return, economic cost added, etc.). Specialists in many fields are worried with organizational performance along with strategic planners, operations, finance, legal, and organizational improvement in that the concept of organizational performance is connected to the ideas of effectiveness and efficiency.

Adeyemi and Salami (2010) suggested that effective inventory management is a sine qua non for increased organizational performance and profitability in any manufacturing firm since about seventy per cent of the total funds employed are linked up in current assets, of which inventory is the most significant component. They argued that inventory control enhances profitability by reducing costs associated with storage (warehouse) and handling of materials that improves the organizational performance and competitiveness in business.

2.1.8 Measurement of Materials Management

Suleiman et al., (2010) viewed that, materials management department plays a vital role in an organizational performance and productivity through different measuring management functions that have a linkage with each other. Management of materials can be measured through effective management of purchasing, control of materials inventory, management of storage (warehouse) and their constructive interdepartmental relationship resulting into the required organizational performance.

The maintenance and creation of effective inventory management is very essential for the continuity of production, for the entire utilization of man power and machines, and for the ability to meet particular customers' demands in time. Hence, effective inventory control and its sustainable improvement measure the effectiveness of materials management on firm's performance and profitability (Simon, 2018).

According to Datta et al., (2004), the purchasing process can be located at the heart of the management of materials inventory optimization which influences the materials storage management effectiveness throughout the firm. As a result, spending in purchasing frequently is one of the biggest shares of a company's budget and accurately managing inventory offers cost cutting as well as service improvement potential, purchasing and inventory management constituting in good storage/warehouse of materials becomes an integral portion to effectively managing any supply chain.

Companies should develop a strong, positive and significant inter-relationship between their purchasing management, materials inventory and management of storage (warehouse) for their sustainable growth in the current competitive world. Therefore, an effective and efficient interdepartmental collaboration between companies purchasing, inventory and storage (warehouse) management ensures the impact of management of materials has on the performance of manufacturing sectors (Uman, 2012).

2.2 Empirical Review

Previous studies done by different authors have common thoughts to clarify the relationship between the materials management and the performance and profitability of an organization. For instance, Monday et al., (2012) revealed how manufacturing industries can achieve the targeted profitability through effective management of materials practices with a particular attention on sourcing, receiving, storing and issuing materials.

Ogbadu et al., (2009) have also shown how organizational performance can be achieved through effective management of materials with particular attention on sourcing, receiving, storing and issuing materials and claimed that careful management of materials reduces depreciation, theft and wastages while ensuring availability of the materials when required. He would like to re-emphasize that for a firm to achieve improved performance and profitability, the goal of materials management should be properly carried out. In technical management activities, this goes a long way to affect the performance of the firm.

A study carried out by Monday et al. (2012) on Nigerian Food and Beverage Manufacturing Firms shows that there is a positive and significant relationship between efficient materials management and firm's performance. Through efficient management of materials, an

organization can achieve significant cost saving, improvement in production efficiency and increase in profitability. Among the materials management functions; effective procurement management, inventory control system, warehouse (storage) management and their interdepartmental coordination were found to be the key factors.

Suleiman et al., (2010) investigated the contribution of the effect of management and control of materials in an organization to the performance and profitability of the organization. The essence of management of materials to a manufacturing organization lies on its ability to control the flow of materials resources in an organization as well as the production process to ensure profitability and performance improvement. This ensures efficiency in the procurement of materials, materials handling, transportation of materials, disposal of waste, storage of materials as well as assembly line management. Therefore, the effectiveness of these activities in enhancing production and minimizing costs will lead to the generation of profit to the acceptable level of organizational performance.

Florence et al. (2018) confirmed that materials management functions jointly contribute significantly to firm's performance. His study revealed that materials inventory, materials procurement and inter-departmental collaboration have insignificant effect on firm performance, while only materials storage has significant effect on firm performance. Finally, he concluded that effective materials management is a suitable tool to organization performance.

A study conducted by Fitsum (2018) on the inventory management system at Habesha Steel Mills PLC revealed that there is a use of information technology which is highly effective in data accuracy, real time inventory reports, service provision, customer service and interdepartmental coordination. However, further improvement is required to upgrade the data accuracy and real time report of inventory management system of the company. He also disclosed that, the internal inventory control of the company is weak to record inventory items properly up to date, inspect the physical inventory items timely and handle overstocking and under stocking of inventories. Additionally, he has shown that the inventory management system has a contribution in improving the company's overall operational activities in terms of service delivery, customer service and supplier relationship, management of information reports and inventory planning and scheduling. Besides, it has a role in reducing damages and wastages as well as minimizing unwanted operational and inventory costs.

A study done by Tibebu (2016) on construction sites revealed that materials management processes require a transformation to improve the overall handling of materials for more efficiency and effectiveness on construction sites. He also specifies that since poor handling of construction materials affects the overall performance of construction projects in terms of cost, time, quality and productivity, the minimization of materials wastage during the construction phases is important in order to avoid loss. Hence, effective management of materials should be necessary for business success and better performance to attain sustainable earnings.

Generally, various studies carried out on the impact of materials management on the performance of manufacturing companies concluded that effective and efficient materials management is the key to sustainable growth of organizational performance and business success through effective implementation of procurement management, inventory control management, and storage (warehouse) management practices and their best interdepartmental harmonization.

2.3 Conceptual Framework of the Study

A conceptual framework is a structure of concepts or theories which are built as a map for the study and it shows the relationship of research variables. The conceptual framework is used to provide an explanation for the relationship between the equitable variables and the organized variable. It shows the diagrammatical relationship between the different variables in the study. The independent variable was detected as materials management and the dependent variable was organizational performance. The procurement, inventory and storage management and the collaboration between these functions are aspects of the independent variable which are functions of materials management while organizational performance is the dependent variable which concerns market position, quality products/services, increased profit and organizational efficiency (Abdulaziz, 2019).

Materials management plays an essential role in the growth and survival of an organization in the sense that failure to an effective and efficient management of materials, will mean that the organization will lose competitiveness leading to poor performance, poor services delivery and declining of sales. Performance is seen as a state of the enterprise’s competitiveness and productivity, reached by a level of effectiveness and efficiency that ensure sustainable market existence (Florence et al., 2018).

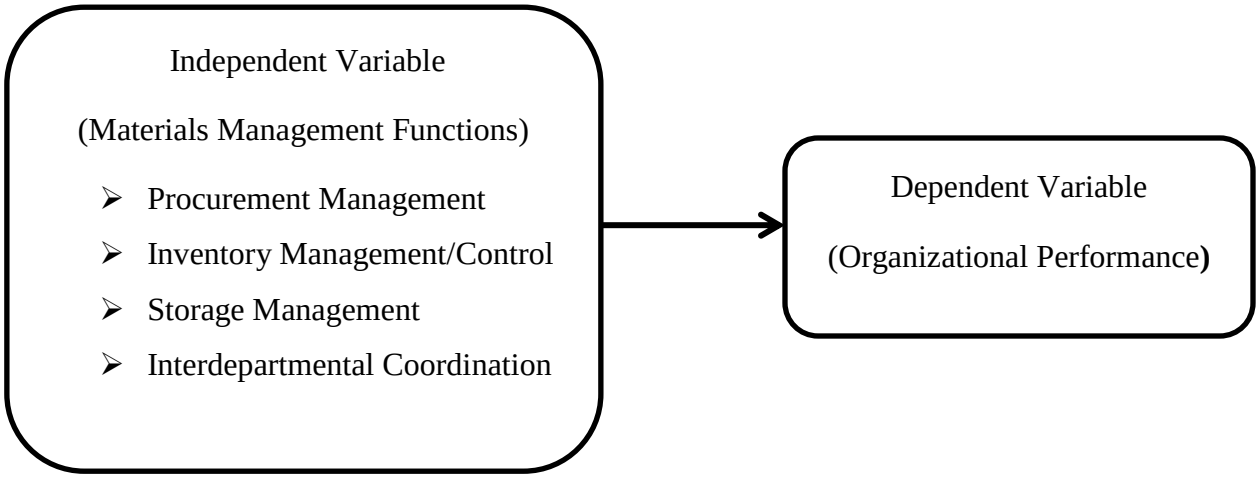

Figure 2.4: Conceptual Framework of the Study

Source: Adapted Modification from Chandra and Retish, 2007 (2021)

This conceptual framework outlines the link between materials management functions and organizational performance resulting in profitability of the company. Hence, it will provide a structured means for the study that will identifies the significance between the independent and dependent variables (Asmelash, 2017).

2.4 Hypotheses Development

Functions of materials management are implemented currently almost in all small, medium and large companies. These materials functions have their own impact on organizational performance of the firm in order to meet customer requirements. So, this research was confronted towards testing the following hypotheses towards the improvement of firm's performance in order to achieving the organizational objectives.

Procurement management is one of the key functions in managing materials flow in, through and out of the company. For healthy flow of raw materials, spare parts, equipment, work-in-process and finished goods the management of procurement plays an essential role in obtaining the right material, in the right quantities, with the right delivery (time and place), from the right source, and at the right price that directly impacts organizational performance (Chapman, 2017). Based on this assumption the next hypothesis was proposed for procurement management function.

Ha_1: There is significant association between procurement management and organizational performance.

Inventory management system is a set of policies that controls and monitors inventory level and determine what level should be maintained, how large orders should be made and when stock should be replenished so as to support the operation of the business. Maximum customer service, low-cost plant operation and minimum inventory investment are the core objectives what firms are wishing to improvise organizational performance. Based on this information the following hypothesis was proposed for inventory management function.

Ha_2: There is significant relationship between inventory management and firm's performance.

Cross (2019) argued that storage management includes a careful management of the stock and maintaining a perfect control over them. Storage management is the combination of planning, decision-making and controlling inbound, storage and outbound flows. Even in a small factory the location of the stores can affect work flow and thus productivity and performance. It provides the service to all other departments along with production department to supply their requirements. So that storage management is a key function of materials management that contributes influential role to the attainment of improved organizational performance. According to this information the following hypothesis was proposed on storage management function.

Ha_3: There is significant association between storage (warehousing) management and organizational performance.

In order for a business to be successful, organizations need to implement and maintain the effective interdepartmental communication. Uzma and Muhammud (20120 indicates that, organizations are composed of social components that come together for production, designed by individuals with diverse opinions and awareness to accomplish a common goal. A well-designed and effective interdepartmental communication system is essential for adapting organizational and managerial tasks, and also sharing the necessary information inside and outside of the organization. So, interdepartmental collaboration plays a vital role in an organization's success, and organizations need to fill the gaps between what the customers expect and what they deliver. Having this information, the following hypothesis was proposed for interdepartmental collaboration as a key factor.

Ha_4: There is significant relationship between interdepartmental collaboration and company's performance.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter focused on a detailed discussion about the research design and methodology of the study on the impact of materials management functions on the performance of steel manufacturing industry. It explains the type of research strategy that the researcher adopted in the approach of data collection and the methodology used in conducting this research. Outlining a good research strategy helps the researcher to reach a fruitful conclusion.

This chapter consisted of the research design, sources of data, population of the study, sample size and sampling techniques, data collection instruments, procedures of data collection methods, method of data analysis and presentation and at the end questionnaire validity and reliability test.

3.1 Description of the Study Area

Walia Steel Industry is a private limited manufacturing company established in 2006E.C in Oromia Regional State, Sebeta City Administration Alemgena area 20km away from Addis Ababa, which is built on a total land area of 53,000m^2 with an initial capital of Birr 200,000,000.00 and in the years to follow has increased the capital. The company was established with the objective of manufacturing and marketing of steel products and expands its industry to five other manufacturing sites such as Merkato and Haile Garment area branches.

When Walia Steel Industry was established, it was the first private Steel Industry at the time. Being one of the steel industries in the country and having demonstrated impressively a swift growth, Walia Steel Industry has rapidly reshaped Ethiopia's Steel Sector and taken initiative that will expand its operation to the wider African market. Walia Steel Industry was established with the view of alleviating the acute shortage of construction materials in Ethiopia and to support the national endeavor of achieving the economic development by contributing in the harnessing of social problems through job creation to the citizens. Walia Steel Industry has been certified with the ISO 9001:2015 by an international certifying company for its provision of quality products to satisfy its customer requirements to attain its vision to be the leading and most reputable steel industry in East Africa.

This research focuses on investigating the impacts of materials management functions (procurement, inventory and storage managements and their constructive collaboration) on the

organizational performance of Walia Steel Industry. From the materials management functions of the firm procurement department and inventory department works under one umbrella while the storage department was working separately at the operation area of the firm. However, there are six branches of the steel industry this study focuses only on Alemgena branch due to time and financial shortages.

3.2 Research Design and Approach

Descriptive research method was employed in this study to get first-hand, detailed and factual information that describes an existing phenomenon to draw valid general conclusions and to help the researcher to assess and define the nature, situation and extent of the current circumstance of materials management practices of the selected firm. And also, it permits the researcher to collect data through different tools such as questionnaires, interviews and observation as they are commonly used in researches (Kothari, 2004).

Explanatory research design was also used to investigate the casual relationship between the dependent and independent variables to be addressed in the research questions. It has importance to describe the nature of certain relationships, or develop and understand the differences among groups or the independence of two or more variables. Hence, the effect of independent variables over dependent variable can be easily identified through explanatory design.

Additionally, based on Creswell (2014), due to the numeric nature of the data quantitative research method which is commonly and widely used methods in business and management research was also employed in this study for data collection techniques and analysis procedures. Since the combination of quantitative and qualitative approaches provides a more complete understanding of a research problem than either approach alone, a mixed methods approach that incorporates both quantitative and qualitative approaches were used in this study.

Since relevant data was collected at one point in times that are important to consider the practices of materials management functions in the selected firm, a cross-sectional data type was used in this the study.

3.3 Types and Sources of Data

Primary sources of data were used in this study in order to gather detailed information. The primary data for this research was collected from the managers, department heads and workers of Walia Steel Industry PLC. These participants were selected because they directly or indirectly participate in procurement, inventory control, storage (warehouse), distribution, and utilization of materials in the firm.

3.4 Population, Sample and Sampling Technique

Since this study was limited to assessing the existing materials management practices of the target company, the total population of the study is 171 which consist of 3 top managers, 7 heads of all departments and 161 workers of Walia Steel Industry PLC who are working together. Since the entire target populations were used as the respondents of the study, a census survey was used. Selection of target respondents with the right knowledge about the research area is significant in order to achieve relevant objectives.

Key respondents of the research were consisting of respondents from Walia Steel Industry PLC purchasing and property administration department, marketing and sales department, management information system (MIS) department, technical department, human resource management (HRM) department, financial department, and storage and production department.

3.5 Data Collection Instruments

This research used primary sources of data. The use of these sources helps to get relevant data related to the study from these important sources. The researcher collected primary data using self-administered five point Likert scale questionnaires to be distributed personally to the respondents by the researcher to measure the perceived practice of materials management functions in the case of Walia Steel Industry PLC.

The questionnaires would be structured in terms of a five point Likert Scale measurements, which provided the respondents an opportunity to give their varied views on diverse aspects of materials management functions and organizational performance. Two semi-structured open-ended questions also designed and used by the researcher to collect qualitative data from the managers and workers of the selected steel manufacturing company.

Three types of questionnaires were prepared (English version, Amharic and Afan Oromo (native languages) version). The Amharic and Afan Oromo version of the questionnaires were fundamentally prepared to help those respondents who can't read, understand and respond in English version. The questionnaire has three parts. The first part (section) dealt with the respondent's profile (socio-demographic characteristics of the respondents). The next section concerned with impacts of materials management functions on firm's performance in the study area while the semi-structured open-ended questions were described in the last section.

3.6 Method of Data Analysis and Presentation

After collecting all the essential data, the data were coded and edited, analyzed and rephrased to eliminate errors and ensure consistency. It comprises categorizing, discussing, classifying and summarizing of the responses to each question in coding frames, grounding on the various responses. The data that was collected using data collection instruments were classified into meaningful categories.

The data were entered into a computer and analyzed with the use of Statistical Package for Social Sciences (SPSS) version 23. Since the questions in the questionnaire were quantitative, to summarize data, descriptive statistical method of analysis like; percentage, frequency, mean and standards deviation were used for the analysis. Inferential analysis was used i.e. regression analysis like correlation analysis, model summary, ANOVA test and a significance test of the variables.

Hence, the researcher employed the regression analysis to demonstrate the correlation between materials management practices and organizational performance in the firm through a particular case of Walia Steel Industry PLC. Finally, the researcher wrote a report from the data which was analyzed in which conclusions and recommendations were made.

3.7 Measurement of Materials Management

Materials management can be measured through different measurement mechanisms. Among these mechanisms questionnaire-based surveys, content analysis and one-dimensional measure are some. Since materials management is multidimensional by its nature, in this study questionnaire-based survey was used as a measurement for materials management functions.

In this study, three key materials management functions and functionally interrelated in their activity considered as coordination were adopted to measure materials management impacts on organizational performance. These key measuring variables are procurement, inventory and storage management and interdepartmental collaboration associated to firm's performance. Questionnaire was adapted through five-point likert scale for each dimension to measure materials management impacts on organizational performance. The constructed questionnaire was contained close ended questions to easily convert the qualitative data in to quantitative form by using five-point level likert methods using SPSS version 23. The following table shows the adapted instrument.

Table 3.1 Materials Management Measurement Constructs

Variable	Item	Source
Organizational Performance (OP)	Materials management problems have impact on organizational performance and competitiveness.	Adeyemi and Salami (2010) and Adamu (2020)
	Materials procurement management sustains the performance of an organization.	
	Organizational performance is affected by materials inventory control systems.	
	The organizational performance can be enhanced by materials storage (warehousing) system.	
	The organizational performance can be impacted by interdepartmental collaboration.	
Procurement Management (PM)	Most of the time the firm's purchasing management practices affects the overall organizational performance in profit generation procedures.	Ogbadu (2009), Tezera and Yadesa (2017) and Masudin (2018)
	Procurement (purchasing) procedures affect organizational performance.	
	The procurement system of the steel industry is managed by trained and skillful personnel.	
	Effect of procurement of materials enhances the steel industry's productivity.	
	The purchasing department made a check and balance between the planned and the purchased materials quantity and quality.	

Inventory Management (IM)	Inventory management practices enable the industry to meet the targeted objectives.	Ibegbulen (2015), Fitsum (2018) and Tekalign (2020)
	Knowing stock at hand and expected stock enhances organizational growth.	
	The firm has computerized all inventory management systems.	
	The firm paid maximum attention to those inventories whose value is highest.	
	Growth of a firm is measured based on the level of stock it has.	
Storage Management (SM)	The storage (warehouse) management has a significant role in achieving firm's objective.	Fessha (2004), Asmelash (2017) and Kibrom (2019)
	The firm pays great attention to the storage management in order to handle items properly.	
	Storage of materials ensures continuity of production and productivity.	
	Most of the time, in your firm's warehouse, items are placed in the correct location.	
	We are successful in minimizing total product damage in the warehouse.	
Interdepartmental Collaboration (IDC)	The interdepartmental coordination between all the firm's departments plays a significant role for the performance of the steel industry.	Uzma and Muhammud (2012) and Brown (2008)
	The entire firm's departments perform their duties collaboratively in order to achieve its objectives.	
	The top management focuses particularly to the inter-departmental coordination of the firm's departments.	
	There is a use of open and positive communication between all the firm's departments.	
	The firm's human resource management practices enhance good interdepartmental coordination.	

3.8 Model Specification

Gujarati and Porter (2009) formulate the relationships between dependent variable(s) and independent variable(s) to analyze using multiple linear regressions through ordinary least square (OLS) model estimator analysis techniques based on the behavior of the variables used.

$Y_i = \beta_0 + \beta_i X_i + e_i$

Where; y is the dependent variable,

$X_{i,}$ the explanatory variables (or regressors),

e, the stochastic disturbance term,

i the i^{th} observation, and

β_0 and β_i are parameters

To analyze the impact of materials management on organizational performance, mathematically the model is specified in regression equation as:

Organizational Performance = f(Materials Management Functions)

Florence (2018) and Oyebamiji, (2018) have shown that the key factors that promote materials management to be measured by procurement management (PM), inventory management (IM), storage management (SM) and interdepartmental collaboration (IDC), while organizational performance (OP) is measured by the ability to meet planned output quantities, the ability to meet market demand for product/service, the ability to deliver quality products/service to customers and the ability to meet scheduled profit levels.

Organizational Performance = f(PM, IM, MS, IDC)

The mathematical form of the function was;

$OP = \beta_0 + \beta_1 PM + \beta_2 IM + \beta_3 SM + \beta_4 IDC$

Following this mathematical model, the econometric estimation equation developed was:

Organizational Performance $= \beta_0 + \beta_1 PM + \beta_2 IM + \beta_3 SM + \beta_4 IDC + e_i$

Where:

- OP = Organizational Performance
- PM = Procurement Management
- IM = Inventory Management
- SM = Storage Management
- IDC = Interdepartmental Collaboration
- β_0 is the intercept of regression
- $\beta_{1,}$ β_2, $\beta_{3,}$ and β_4 are coefficients of regression or the coefficients of explanatory variables which measures the relative impact of materials management functions on organizational performance and

- e_i is the stochastic error term capturing other explanatory variables not explicitly included in the model

3.9 Validity and Reliability of the Instruments

Reliability and validity are ideas that help to establish the truthfulness, credibility or believability of findings. All researchers want to test reliability and validity that are central concerns in all measurements which connect measures to constructs (Neuman, Beaman and Sponarski, 2014).

3.9.1 Validity of Questionnaires

Kothari (2004) defines validity as the most critical benchmark and indicates the degree to which an instrument measures what it is supposed to measure. Validity is the extent to which differences found with a measuring instrument reflect true differences among those being tested.

Validity is the accuracy and meaningfulness of the inferences which are based on the research results. It is the degree to which results obtained from the analysis of the data actually represents the phenomena under study. He implies that the validity of the questionnaire data depends on a crucial way that the ability and willingness of the respondents to provide the information requested.

The validity of the items was tested using Pearson Correlation coefficients values between items using Statistical Package for Social Science (SPSS) version 23. Based on the output value computed using SPSS version 23 the validity of the instruments was tested by the Pearson correlation value between the items at sig. 2-tailed (0.000) at a significance level of 0.05 with a total survey respondents of 162 at a df(2, 160). Based on the significant level value obtained by the sig. 2-tailed $0.000 < 0.05$, since all the Pearson Correlation Coefficient values of each items were greater than the Pearson Critical value at df(2, 160) of 0.159, it can be concluded that all the items distributed to the respondents were valid.

3.9.2 Reliability of Questionnaires

Kothari et al., (2004) specified that, the test of reliability is an important test of sound measurement. A measuring instrument is reliable if it provides consistent results. Reliable measuring instrument does contribute to validity, but a reliable instrument need not be a valid instrument.

Before administering the main phase of the study, a pilot test was conducted to test the data collecting instrument and to improve the methodology. A pilot study is a small-scale version of a

planned study conducted with a small group of participants similar to those to be recruited later in the larger-scale study. Pilot studies are conducted to allow researchers to practice and to assess the effectiveness of their planned data collection and analysis techniques (Connelly, 2008).
The primary benefit of conducting a pilot study is that it provides the researcher with a chance to make adjustments and revisions to the main study (Connelly, 2008). Questionnaires were tested using 10% of potential respondents or 10 to 30 individuals from the total sample size to make the data collecting instruments relevant and suitable to the problem and internally consistent as recommended by Connelly (2008 and 2010).

Mohsen Tavakol and Reg Dennick (2011) stated that, Cronbach's alpha of ≤ 0.5 is unacceptable, $0.5 < \alpha \leq 0.6$ is poor, $0.6 < \alpha \leq 0.7$ is questionable, $0.7 < \alpha \leq 0.8$ is acceptable, $0.8 < \alpha \leq 0.9$ is good and finally Cronbach's $\alpha > 0.9$ is excellent as cited by Daniel Belay (2017).

To meet consistency of the instrument, the questionnaires was distributed to 20 individuals who are workers of Walia Steel Industry and as indicated in the table below, the sets of items of questionnaire have good internal consistency with Cronbach's alpha of 0.958 which is greater than 0.9, which indicated the questionnaire is a reliable and acceptable source of the whole items.

From Table 3.2 the Cronbach's alpha of 0.958 indicated that the sets of items of the questionnaires have highly good internal consistency which is best reliable and meet the acceptable level that implied the validity of the instrument. After a proper detection of the instrument, the upgraded version of the questionnaires were printed, duplicated and distributed to the targeted respondents. All of the respondents in the survey study for the pilot study are the managers and employees of the selected steel industry.

Table 3.2 Overall Reliability Statistics

Cronbach's Alpha	N of Items
.958	25

Source: Own Survey Results and Computation, 2021

Table 3.3: Reliability Test for Materials Management Functions

Materials Management Dimensions	Cronbach's Alpha	No. of Items
Procurement Management	0.935	5
Inventory Management	0.880	5
Storage Management	0.890	5
Interdepartmental Collaboration	0.896	5
Organizational Performance	0.879	25

Source: Own Survey Results and Computation, 2021

As indicated in Table 3.3 the Cronbach's Alpha coefficients for each of the explanatory variables assessed by the instrument were computed using SPSS version 23. The result in the Table 3.3 demonstrated that, the Cronbach's Alpha Coefficients for each of materials management impact indicators were 0.958 for overall organizational performance, 0.935 for procurement management, 0.880 for inventory management system, 0.890 for storage management and 0.879 for interdepartmental collaboration. As compared to the normal standards of reliability, each Cronbach's Alpha coefficients of the explanatory variables (materials management functions) were statistically significant enough and internally consistent.

CHAPTER FOUR

RESULT AND DISCUSSION

4.1 Introduction

This chapter comprises the data presentation, analysis and interpretation of the findings that was aimed at examining the impact of materials management on organizational performance of manufacturing companies, the case of Walia Steel Industry PLC. The researcher has collected the data in the form of five-point Likert scale questionnaire and semi-structured open-ended questions.

4.2 Response Rate

In order to collect primary data, a total of 171 customized questionnaires were distributed to 3 top managers, 7 department heads and 161 workers of Walia Steel Industry those who were used in census survey. Even if there was a great challenge to distribute and collect the questionnaires face to face to and from the respondents due to the occurrence of COVID-19 pandemic disease, out of these distributed questionnaires, from 3 top managers, 7 department heads and 152 workers, a total of 162 questionnaires were returned which was valid enough with a very good response rate of 94.7% while the unreturned questionnaires were 9 with unreturned rate of 5.3%.

A quantitative cross-sectional data type was collected in the form of questionnaire was analyzed using Statistical Package for Social Sciences (SPSS) version 23. The qualitative data collected using semi-structured open-ended questions are also analyzed and discussed in this chapter. The analysis starts with statistical description of socio-demographic characteristics of the respondents. The discussion tries to realize the objective of the study to answer the research questions and to test the significance of the stated research hypotheses.

4.3 Descriptive Statistics

4.3.1 Respondent's Personal Background

The demographic characteristics and background information of Walia Steel Industry managers, department heads and employees is necessary to be presented and analyzed. Analyzing the respondent's demographic characteristics and background is significant to validate the reliability of the collected data. Hence, the respondents were requested to give response to their gender and

age category, educational background, years of experience and work position in the firm's structure.

Table 4.1: Respondent's Demographic Information

Respondent's Personal Background		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	106	65.40	65.40	65.40
	Female	56	34.60	34.60	100
	Total	162	100.00	100.00	
Age	21-30Years	90	55.60	55.60	55.60
	31-40Years	32	19.80	19.80	75.30
	41-50Years	32	19.80	19.80	95.10
	Above 50Years	8	4.90	4.90	100.00
	Total	162	100.00	100.00	
Education Level	Up to Diploma	51	31.50	31.50	31.50
	BA/BSC	89	54.90	54.90	86.40
	MA/MSC	22	13.60	13.60	100.00
	Total	162	100.00	100.00	
Work Experience	≤5Years	43	26.50	26.50	26.50
	6-10Years	63	38.90	38.90	65.40
	11-15Years	29	17.90	17.90	83.30
	16-20Years	20	12.30	12.30	95.70
	>20Years	7	4.30	4.30	100.00
	Total	162	100.00	100.00	
Work Position	Top Manager	3	1.90	1.90	1.90
	Dep. Head	7	4.30	4.30	6.20
	Employee	152	93.80	93.80	100.00
	Total	162	100.00	100.00	

Source: Own Survey Results and Computation, 2021

According to the result in Table 4.1, out of the whole respondents 106(65.4%) of the respondents are male while 56(34.6%) are female respondents.

Result from Table 4.1 provided the age distribution of the respondents those who were participated in the study. The age categories of the respondents were divided with an array of 10 years except the age category above 50 years. Hence, the results showed that 55.6% (90) were aged between 20 and 30 years old, 19.8% (32) were between 31 and 40 years of age, similarly 19.8% (32) were between 41 and 50 years, 4.9% (8) were aged above 50 years. This indicates that most of the respondent's age is found in the age category from 21 to 30 and 31 to 40 years, with a percentage of 55.6% and 19.8% respectively followed by the age category from 41 to 50 years with a percentage of 19.8% and lastly the smaller proportion of the respondents were older than 50 years with a percentage of 4.9%.

As indicated in Table 4.1 with respect to educational level of the respondents, the education level attained by majority of the respondents was 54.9% out of the valid respondents was first degree holders, followed by 31.5% those who own up to diploma level and the remaining 13.6% of the respondents were second degree (master's degree) holders. Accordingly, from the above fact, one can easily understand that most of the respondent of the company possesses first degree educational background. Thus, it can be expected that they are competent to recognize and clearly identify the existing materials management functions and its impacts on their firm's performance.

As indicated by Table 4.1 regarding to the respondent's work experience, 38.9% of the respondents in the firm have 6-10 years of experience. They were followed by 26.5% of the respondents those who are less experienced having up to 5 years (≤5 years) of work experience while 17.9% of the respondents have 11-15 years of work experience relatively more experienced. From the table above 12.3% respondents have 16-20 years of work experience and 4.3% of the respondents have more than 20 years (≥20 years) of work experience in the company. Based on the respondent's relative work experience in the firm's job position, most of the respondents about 73.5% have sufficient knowledge in relation to the materials management functions employed in the Steel Industry while 26.5% of the respondents were less experienced.

The survey made to assess the respondent's current position in Table 4. 1 indicated that 1.9% of the respondents were top managers, 4.3% were department heads those who leads the firm's managerial and operational activities and 93.8% were functional level employees of the

company. Hence, most of the respondents in the survey study were functional and operational level employees of the firm (93.8%) followed by firm's department heads (4.3%) while the top managers (1.9%) of the firms comes the last rank which implies that the respondents are from different educational background and work position.

4.3.2 The Impact of Materials Management Functions on Organizational Performance

This section discusses the result of the survey in order to answering the research questions in assessing the impact of materials management on organizational performance. The results were interpreted by using the frequency and percentage of the materials management and organizational performance measurements.

Table 4.2: Organizational Performance

Items	Response	Response Rate	
		Frequency	Percent
Materials management functions have high impact on organizational performance and competitiveness.	Disagree	3	1.90
	Neutral	23	14.20
	Agree	74	45.60
	Strongly Agree	62	38.30
	Total	162	100.00
Materials procurement management sustains greatly the performance of an organization.	Disagree	6	3.70
	Neutral	38	23.50
	Agree	65	40.10
	Strongly Agree	53	32.70
	Total	162	100.00
Organizational performance is highly affected by materials inventory control systems.	Disagree	9	5.60
	Neutral	44	27.20
	Agree	50	30.80
	Strongly Agree	59	36.40
	Total	162	100.00
The organizational performance can be enhanced less by materials storage (warehousing) system.	Disagree	3	1.90
	Neutral	78	48.10
	Agree	56	34.60

	Strongly Agree	25	15.40
	Total	162	100.00
The organizational performance can be impacted significantly by interdepartmental collaboration.	Disagree	6	3.70
	Neutral	45	27.80
	Agree	57	35.20
	Strongly Agree	54	33.30
	Total	162	100.00

Source: Own Survey Results and Computation, 2021

As indicated in Table 4.2, majority of the respondents 83.9% supported that materials management functions have high impact on Walia Steel Industry's organizational performance and competitiveness while 1.9% of them was denied. From the respondent's, 14.2% of the respondents were neither agreed nor disagreed whether materials management functions have high impact on organizational performance.

Regarding to Table 4.2, 72.8% of the respondents described that materials procurement management sustains greatly the performance of an organization while 23.5% of them were neither agreed nor disagreed whether materials purchasing management sustains greatly the performance of the firm or not. From the respondents 3.7% of them denied the issue.

According to Table 4.2, 67.2% of the respondents specify that Walia Steel Industry's performance is highly affected by materials inventory and 27.2% of the respondents have no suggestion whether firm's performance is highly affected by materials inventory or not while 5.6% of the respondents denied.

Based on the result in Table 4.2, from the respondent's response 50% of the respondents described that Walia Steel Industry's performance is enhanced less by materials storage (warehousing) system while 48.1% of the respondents neither agreed or disagreed whether the firm's performance is enhanced less by materials storage (warehousing) system or not and 1.9% of the respondents denied.

As a final point for Table 4.2, more of the respondents 68.5% supported that Walia Steel Industry's performance is impacted by interdepartmental collaboration significantly and 27.8% of the respondents have no opinion whether the firm's performance is impacted by interdepartmental collaboration significantly or not.

Hence, based on the survey result in Table 4.2, majority of Walia Steel Industry management staffs and employees supported the impact that materials management functions have on the organizational performance followed by those employees who have no opinion on the given indicators and there were few respondents that denied the impact that materials management functions have on organizational performance.

Table 4.3: Procurement Management

Items	Response	Response Rate	
		Frequency	Percent
Most of the time the firm's purchasing management practices affects the overall organizational performance in profit generation procedures.	Disagree	28	17.30
	Neutral	58	35.80
	Agree	39	24.10
	Strongly Agree	37	22.80
	Total	162	100.00
Procurement (purchasing) procedures highly affect organizational performance.	Disagree	20	12.30
	Neutral	63	38.90
	Agree	59	36.50
	Strongly Agree	20	12.30
	Total	162	100.00
The procurement system of the steel industry is managed by trained and skillful personnel.	Disagree	34	21.00
	Neutral	69	42.60
	Agree	30	18.50
	Strongly Agree	29	17.90
	Total	162	100.00
Effect of procurement of materials enhances the steel industry's productivity.	Strongly Disagree	4	2.50
	Disagree	30	18.50
	Neutral	66	40.70
	Agree	32	19.80
	Strongly Agree	30	18.50
	Total	162	100.00
The purchasing department made a check and balance between the planned and the purchased materials quantity and quality.	Disagree	29	17.90
	Neutral	59	36.40
	Agree	45	27.80
	Strongly Agree	29	17.90
	Total	162	100.00

Source: Own Survey Results and Computation, 2021

As indicated from Table 4.3, 46.9% of the respondents replied that most of the time Walia Steel Industry purchasing management practices affects the overall organizational performance in profit generation procedures while 17.3% of the respondents denied most of the time the firm's purchasing management practices affects the overall organizational performance in profit

generation procedures and 35.8% of the respondents were neither agreed nor disagreed whether most of the time the firm's purchasing management practices affects the overall organizational performance in profit generation procedures or not.

Based on Table 4.3, procurement (purchasing) procedures highly affect Walia Steel Industry's performance was explained by 48.7% of the respondents and 12.3% of the respondents denied that the procurement (purchasing) procedures highly affect organizational performance. From the respondents 38.9% have no opinion on whether the procurement (purchasing) procedures highly affect organizational performance or not.

According to Table 4.3, 36.4% of the respondents described that the procurement system of the steel industry is managed by trained and skillful personnel while 21% of the respondents were denied the procurement system of the steel industry is managed by trained and skillful personnel. From the respondents 42.6% of them neither agreed nor disagreed on the item the procurement system of the steel industry is managed by trained and skillful personnel.

Regarding to the result from Table 4.3, effective procurement of materials enhances the steel industry's productivity was explained by 38.3% of the respondents and denied by 21% of the respondents while 40.7% of them have no suggestion whether effective procurement of materials enhances the steel industry's productivity or not.

At the last from Table 4.3, the purchasing department made a check and balance between the planned and the purchased materials quantity and quality was clarified by 45.7% of the respondents while 17.9% of them did not accept it. From the respondents 36.4% have no opinion whether the purchasing department made a check and balance between the planned and the purchased materials quantity and quality or not.

Hence, depending up on the survey result in Table 4.3, almost near half of the steel industry employees supported the impact that procurement management practices have on the performance of the firm while near to those employees who were supporting the items indicated were neither agreed nor disagreed on the given indicators and to the average fewer employees did not support the given items.

Table 4.4: Inventory Management

Items	Response	Response Rate	
		Frequency	Percent
Inventory management practices enable the industry to meet the targeted objectives.	Disagree	20	12.30
	Neutral	91	56.20
	Agree	31	19.10
	Strongly Agree	20	12.30
	Total	162	100.00
Knowing stock at hand and expected stock enhances organizational growth.	Disagree	14	8.60
	Neutral	72	44.40
	Agree	63	38.90
	Strongly Agree	13	8.10
	Total	162	100.00
The firm has computerized all inventory management systems.	Disagree	22	13.60
	Neutral	84	51.80
	Agree	44	27.20
	Strongly Agree	12	7.40
	Total	162	100.00
The firm paid maximum attention to those inventories whose value is highest.	Strongly Disagree	2	1.20
	Disagree	22	13.60
	Neutral	64	39.50
	Agree	60	37.10
	Strongly Agree	14	8.60
	Total	162	100.00
Growth of a firm is measured based on the level of stock it has.	Disagree	26	16.00
	Neutral	66	40.70
	Agree	48	29.70
	Strongly Agree	22	13.60
	Total	162	100.00

Source: Own Survey Results and Computation, 2021

Based on Table 4.4, 31.4% of the respondents indicated that inventory management practices enable Walia Steel Industry to meet the targeted objectives while fewer respondents 12.3% of them denied this impact. More of the respondents 56.2% were neither agreed nor do disagreed whether inventory management practices enable the industry to meet the targeted objectives or not.

According to Table 4.4, knowing stock at hand and expected stock enhances Walia Steel Industry's growth was supported by 47% of the respondents and denied only by 8.6% of the respondents while 44.4% of the respondents have no opinion on this impact.

As indicated in Table 4.4, 34.6% of the respondents indicated that the firm has computerized all inventory management systems while 13.6% of the respondents were not support the indication. Almost more than half of the respondents 51.8% have no suggestion whether the firm has computerized inventory management system or not.

The survey result from Table 4.4 showed that 45.7% of the respondents described that the steel industry paid maximum attention to those inventories whose value is highest and some respondents 14.8% of them denied the given indication item. From the survey result in Table 4.4 above, 39.5% of the respondents were neither agreed nor disagreed on the given indication item.

Regarding to Table 4.4, 43.3% of the respondents clarified that the growth of Walia Steel Industry is measured based on the level of stock it has while 16% of the respondents were not agreed on the indication the growth of a firm is measured based on the level of stock it has. Accordingly, from the whole respondents 40.7% of them were neither agreed nor disagreed whether the growth of the firm is measured based on the level of stock it has or not.

Hence, the survey result in Table 4.4 indicated that more of the respondents of the survey have no more suggestions or judgments on the inventory management of Walia Steel Industry followed by those respondents supporting the given indication items and fewer respondents did not support the given inventory management system of the firm.

Table 4.5: Storage Management

Items	Response	Response Rate	
		Frequency	Percent
The storage (warehouse) management has a significant role in achieving firm's objective.	Strongly Disagree	2	1.20
	Disagree	20	12.30
	Neutral	65	40.10
	Agree	63	38.90
	Strongly Agree	12	7.50
	Total	162	100.00
The firm pays great attention to the storage management in order to handle items properly.	Strongly Disagree	2	1.20
	Disagree	42	25.90
	Neutral	61	37.70

	Agree	50	30.90
	Strongly Agree	7	4.30
	Total	162	100.00
Storage of materials ensures continuity of production and productivity.	Disagree	40	24.70
	Neutral	72	44.40
	Agree	44	27.20
	Strongly Agree	6	3.70
	Total	162	100.00
Most of the time, in your firm's warehouse, items are placed in the correct location.	Strongly Disagree	4	2.50
	Disagree	8	4.90
	Neutral	71	43.80
	Agree	59	36.50
	Strongly Agree	20	12.30
	Total	162	100.00
We are successful in minimizing total product damage in the warehouse.	Strongly Disagree	2	1.20
	Disagree	31	19.10
	Neutral	61	37.70
	Agree	49	30.20
	Strongly Agree	19	11.80
	Total	162	100.00

Source: Own Survey Results and Computation, 2021

As indicated in Table 4.5, the storage (warehouse) management has a significant role in achieving firm's objective was supported by 46.4% of the respondents and denied by fewer respondents (13.5%) while 40.1% of the respondents were neither agreed nor disagreed whether the storage (warehouse) management has a significant role in achieving firm's objective or not.

Regarding to Table 4.5 above, 35.2% of the respondents explained that Walia Steel Industry paid great attention to the storage management in order to handle items properly while 27.1% of the respondents did not support the given indicator item. The rest 37.7% of the respondents have no suggestion on the indicator the firm paid great attention to the storage management in order to handle items properly.

Based on the survey result in Table 4.5, storage of materials ensures continuity of production and productivity was described by 30.9% of the respondents and 44.4% of the respondents have no opinion on the given indicating item while 24.7% of the respondents did not accept that the storage of materials ensures continuity of production and productivity.

As indicated in Table 4.5, 48.8% of the respondents clarified that most of the time, in Walia Steel Industry's warehouse items are placed in the correct location. Fewer respondents (7.4%) denied most of the times, in the firm's warehouse items are placed in the correct location. From the respondents 43.8% of them neither agreed nor disagreed on this issue.

According to Table 4.5, 42% of the respondents indicated that they were successful in minimizing total product damage in the warehouse while 20.3% of the respondents indicated that they were not be successful in minimizing total product damage in the warehouse. The rest of the respondents (37.7%) have no opinion whether they were successful in minimizing total product damage in the warehouse or not.

Therefore, almost 40.66% of the respondents to the average were supporting the impact that storage management has on organizational performance while to the average 40.74%% of the respondents have no suggestion on the impact that storage management has on organizational performance. The rest of the respondents (18.6%) did not support the impact that storage management has on organizational performance.

Table 4.6: Interdepartmental Collaboration

Items	Response	Response Rate	
		Frequency	Percent
The interdepartmental coordination between all the firm's departments plays a significant role for the performance of the steel industry.	Disagree	6	3.70
	Neutral	37	22.80
	Agree	48	29.70
	Strongly Agree	71	43.80
	Total	162	100.00
The entire firm's departments perform their duties collaboratively in order to achieve its objectives.	Disagree	6	3.70
	Neutral	38	23.50
	Agree	79	48.70
	Strongly Agree	39	24.10
	Total	162	100.00
The top management focuses particularly to the inter-departmental coordination of the firm's departments.	Disagree	4	2.50
	Neutral	51	31.50
	Agree	42	25.90
	Strongly Agree	65	40.10
	Total	162	100.00
There is a use of open and positive communication between all the firm's departments.	Disagree	6	3.70
	Neutral	34	21.00
	Agree	57	35.20
	Strongly Agree	65	40.10
	Total	162	100.00
The firm's human resource management practices enhance good interdepartmental coordination.	Disagree	3	1.90
	Neutral	34	21.00
	Agree	44	27.10
	Strongly Agree	81	50.00
	Total	162	100.00

Source: Own Survey Results and Computation, 2021

Based on the result in Table 4.6, more of the respondents (73.5%) were decided that the interdepartmental coordination between all the firm's departments plays a significant role for the organizational performance of the steel industry while few respondents (3.7%) denied the item. The rest of the respondents (22.8%) have no indication on the interdepartmental coordination between all the firm's departments' plays a significant role for the organizational performance of the steel industry.

According to the result in Table 4.6, similar to the first indicator 72.8% of the respondents explained that the entire firm's departments perform their duties collaboratively in order to achieve its objectives and 3.7% of the respondents disagreed the item while 23.5% of the respondents were neither agreed nor disagreed whether the entire firm's departments perform their duties collaboratively in order to achieve its objectives or not.

As indicated in Table 4.6, 66% of the respondents clarified that the top management of Walia Steel Industry focuses particularly to the inter-departmental coordination of the firm's departments while 2.5% of the respondents denied the item. The rest 31.5% of the respondents have no opinion whether the top management of Walia Steel Industry focuses particularly to the inter-departmental coordination of the firm's departments or not.

Regarding to the result in Table 4.6, almost more of the respondents (75.3%) described as there is a use of open and positive communication between all the firm's departments while 21% of the respondents did not determine whether there is a use of open and positive communication between all the firm's departments or not. And few of the respondents (3.7%) disagreed on the given item.

Depending on the result in Table 4.6, majority of the respondents (77.1%) supported that Walia Steel Industry's human resource management practices enhance good interdepartmental coordination while 21% of the respondents did not determine whether the firm's human resource management practices enhance good interdepartmental coordination or not. Similarly, very few of the respondents (1.9%) disagreed on the given item.

Therefore, on the average almost majority of the respondents (72.95%) were supporting the impact that interdepartmental collaboration has on organizational performance while on the average 23.95%% of the respondents have no suggestion on the impact that interdepartmental collaboration has on organizational performance. The rest of the respondents (3.1%) did not support the impact that interdepartmental coordination has on organizational performance.

4.4 Inferential Analysis

4.4.1 Diagnostic Tests

Linear regression is an analysis that assesses whether one or more predictor variables explain the dependent (criterion) variable. Linearity, multicollinearity, homoscedasticity, autocorrelation and normality are among the five key assumptions of classical linear regression model or Gauss-Markov Assumptions that needs to be tested and analyzed in this survey study. These assumptions of classical linear regression analysis are needed for statistical influences (for estimation and hypothesis testing).

4.4.1.1 Test of Linearity Assumption

Linear regression needs the relationship between the independent variables (procurement, inventory and storage management and interdepartmental collaboration) and dependent variable (organizational performance) to be linear. The linearity assumption can best be tested by using scatter plots. Linearity assumption means that the predictor (independent) variables in the regression have a straight-line relationship with the outcome (dependent) variable. If the residuals are normally distributed and homoscedastic, there is no need of worrying about linearity issue (https://www.statisticssolutions.com). Hence, since the observations for all explanatory variables versus the dependent variable can be drawn approximately in a straight line and the variance between the upper and lower cases of the observations were reasonably similar, linearity is not a series problem to the study.

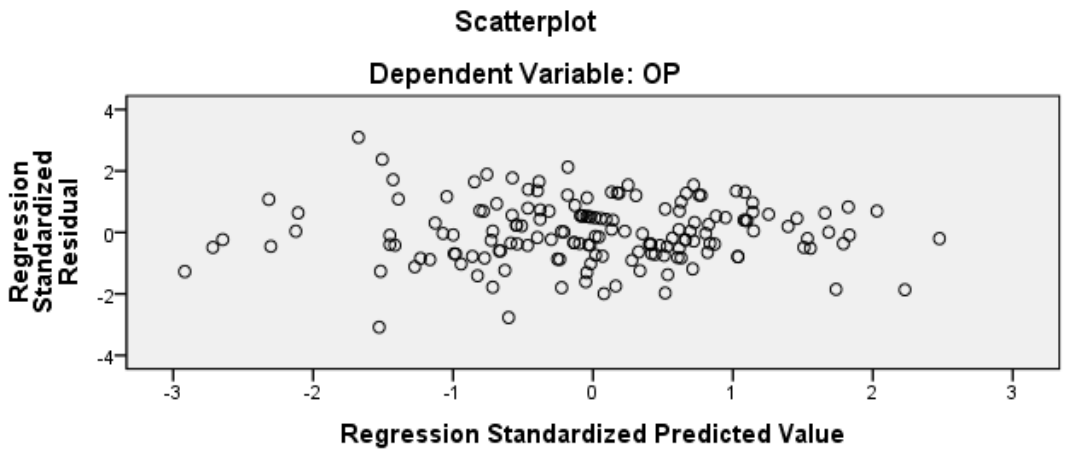

Figure 4.1: Linearity Test

4.4.1.2 Test of Normality Assumption

Assumption of normality means that the collected data fits a bell-curve shape before running certain statistical tests or regression. A test of normality assumption could be checked by graphical (histogram and dot plot) method of tests. The popular histogram can provide a good idea about whether the data meets the assumption. If the data looks like a bell-curve, then it is probably normal or if the fitted line in the Normal P-P plot of regression is approximately a straight line, one can conclude that the variables of interest are normally distributed (https://www.statisticshowto.com). Therefore, since the fitted line on the P-P plot of the result approximately straight line, the residuals of the model were approximately normally distributed.

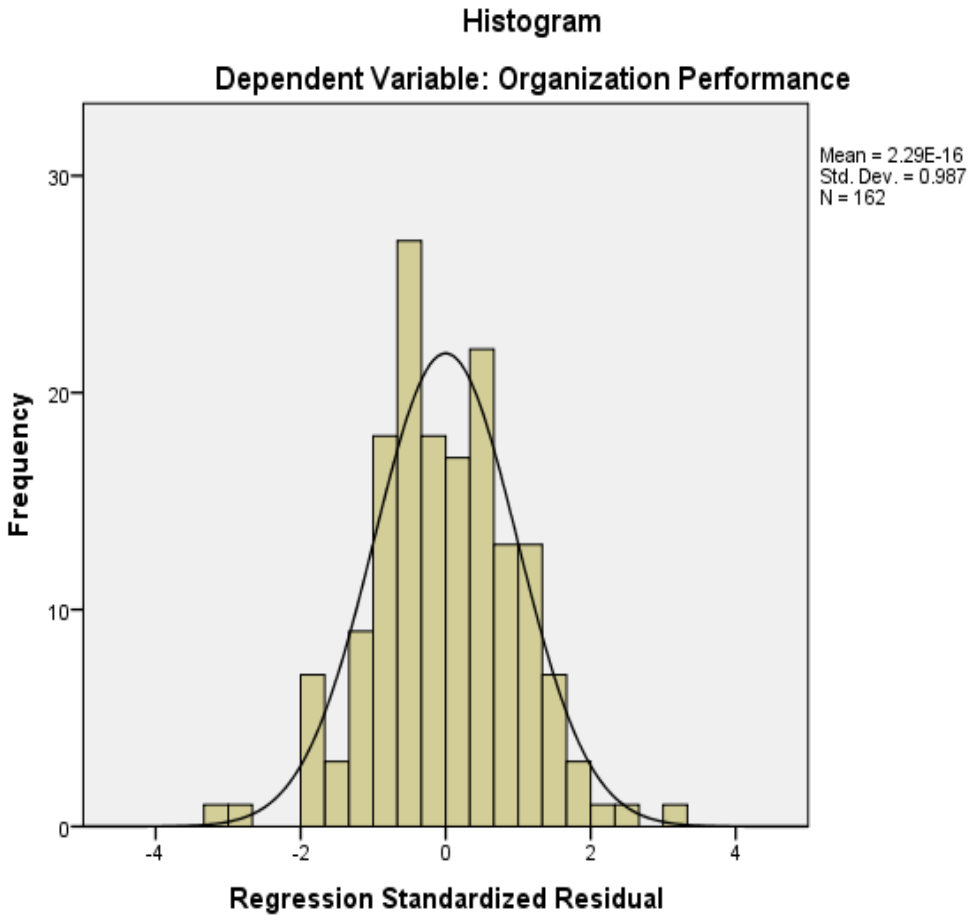

Figure 4.2 (a): Histogram

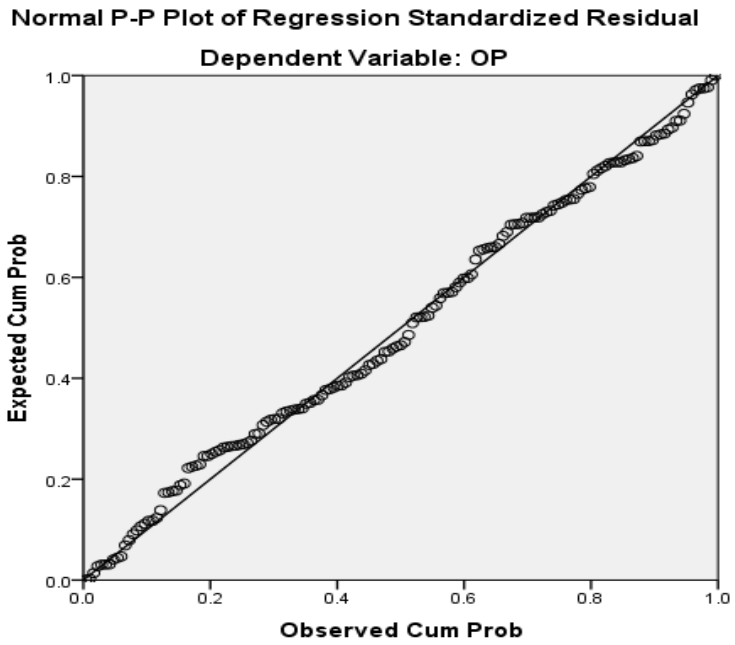

Figure 4.2 (b): Normal P-P Plot

4.4.1.3 Test of Multicollinearity Assumption

After the normality of the data in the regression model met, the next step is to determine whether there is similarity between the independent variables in a model. Similarities between the independent variables will result in a very strong correlation. Hence, multicollinearity occurs when the independent variables (procurement, inventory and storage management and interdepartmental collaboration) are too highly correlated with each other.

The Variance-Inflation Factor (VIF) of a linear regression is an indicator of whether there is multicollinearity or not. If the VIF value lies between 1 and 10, then there is no multicollinearity. If the value of VIF is < 1 or >10, then there is certainly multicollinearity among the variables.

The other multicollinearity indicator is the tolerance which measures the influence of one independent variable on all other independent variables. If the tolerance value is < 0.1, there might be multicollinearity in the data and if the tolerance value is < 0.01 there is certainly multicollinearity among the variables (https://www.statisticssolutions.com).

Based on this assumption test in Table 4.7, the VIF and tolerance values in the survey study for all independent variables became < 10 and > 0.1 respectively. Therefore, the model used did not

violate the assumption which means the model is free from multicollinearity. So, from the result in Table 4.7, there is no multicollinearity between the independent variables in the model used.

Table 4.7: Multicollinearity Diagnosis

Model	Collinearity Statistics	
	Tolerance	VIF
Procurement Management	.649	1.540
Inventory Management	.166	6.038
Storage Management	.202	4.940
Interdepartmental Collaboration	.407	2.460

a. Dependent Variable: Organizational Performance
Source: Own Survey Results and Computation, 2021

4.4.1.4 Test of Homoscedasticity Assumption

Homoscedasticity or homogeneity of variances is an assumption of equal or similar variances in different groups being compared whereas heteroscedasticity is a systematic change in the spread of residuals over the range of measured values. Heteroscedasticity is a problem because ordinary least squares (OLS) regression assumes that all residuals are drawn from a population that has constant variance (homoscedasticity). Homoscedasticity assumptions can be checked by scatter plot diagram (https://www.campusguides.lib.utah.edu). The result of the study implies the values of the model would forecast against the residuals achieved. As the expected values increase, the deviation in the residuals should be roughly similar. The graph looks like a casual group of dots. Therefore, the model of this survey study is homoscedastic.

4.4.1.5 Test of Autocorrelation Assumption

Autocorrelation is a characteristic of data which shows the degree of similarity between the values of the same variables over successive time intervals. When autocorrelation is detected in the residuals from a model, it suggests that the model is mis-specified or may be unreliable. The cause of the existence of autocorrelation is that some key variable or variables are missing from the model.

The standard method of testing for autocorrelation is the Durbin-Watson test. The Durbin-Watson test produces a statistic that ranges from 0 to 4. Durbin-Watson test values close to 2 (the middle of the range) suggest less autocorrelation and values closer to 0 or 4 indicate greater

positive or negative autocorrelation respectively. An acceptable range of Durbin-Watson statistic value is 1.50 - 2.50 (https://www.statisticssolutions.com).

Table 4.8: Durbin-Watson

Model	Durbin-Watson
1	2.152

a. Predictors: (Constant), Interdepartmental Collaboration, Storage Management, Inventory Management, Procurement Management
b. Dependent Variable: Organizational Performance
Source: Own Survey Results and Computation, 2021

According to the result in Table 4.8 above, the Durbin-Watson statistic value is 2.152 which are found in an acceptable range of 1.50 – 2.50. Based on the indicated result the assumption of independence of residuals was satisfied. Therefore, there is no existence of autocorrelation problem in the survey study model.

4.4.2 Correlation Analysis

Correlation is a bivariate analysis that measures the strength of association between two or more variables and the direction of the relationship. In terms of the strength of relationship, the value of the correlation coefficient varies between -1 and +1. A value of ±1 indicates a perfect degree of association between the two variables. As the correlation coefficient value goes towards 0, the relationship between the variables will be weaker. The direction of the relationship is indicated by the sign of the coefficient; a + sign indicates a positive relationship and a – sign indicates a negative relationship (Saunders, Lewis, and Thornhill, 2009).

Hence, correlation analysis is a statistical method used to evaluate the strength and direction of relationship between two or more quantitative variables. Any score from +0.5 to +1 indicates a very strong positive correlation, which means that they both increase at the same time. Any score from -0.5 to -1 indicates a strong negative correlation, which means that as one variable increases, the other decreases proportionally. A score of 0 indicates that there is no correlation or relationship between the variables (Saunders et al., 2009).

Table 4.9: Correlation between Materials Management Functions and Organizational Performance

		PM	IM	SM	IDC	OP
PM	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	162				
IM	Pearson Correlation	.522**	1			
	Sig. (2-tailed)	.000				
	N	162	162			
SM	Pearson Correlation	.495**	.892**	1		
	Sig. (2-tailed)	.000	.000			
	N	162	162	162		
IDC	Pearson Correlation	.570**	.739**	.667**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	162	162	162	162	
OP	Pearson Correlation	**.616****	**.831****	**.803****	**.779****	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	162	162	162	162	162

**. Correlation is significant at the 0.01 level (2-tailed).

N = 162

Source: Own Survey Results and Computation, 2021

Table 4.9 demonstrated the correlation matrix between materials management functions (procurement management, inventory management, storage management and interdepartmental collaboration) and organizational performance of Walia Steel Industry PLC. Among these materials management functions that have impact on performance of the manufacturing company, there is a positive and very strong relationship between inventory management and organizational performance with a correlation coefficient of 0.831 controlling for other impacting variables. The next indicator that had a positive and very strong correlation with the performance of the firm is the storage management with a correlation coefficient of 0.803 controlling for other impacting variables. The third explanatory variable that had a positive and very strong relationship with the performance of a firm is the interdepartmental collaboration with a 0.779 correlation coefficient controlling for other impacting variables. Relative to the other independent variables the explanatory variable that has positive and moderate relationship

with the organizational performance is the procurement management with a 0.616 coefficient of correlation controlling for other impacting variables.

Table 4.10: Correlation b/n Overall Materials Management Functions and Organizational Performance

		Materials Management	Organizational Performance
Materials Management	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	162	
Organizational Performance	Pearson Correlation	**.882****	1
	Sig. (2-tailed)	.000	
	N	162	162

**. Correlation is significant at the 0.01 level (2-tailed).
N = 162
Source: Own Survey Results and Computation, 2021

Table 4.10 demonstrated the relationship between effective materials management and the organizational performance of Walia Steel Industry PLC. Effective materials management was correlated very strongly with organizational performance of Walia Steel Industry with a higher value of correlation coefficient of 0.882. This illustrated that the effective materials management functions (inventory management, interdepartmental collaboration, storage management and procurement management) of the company had a positive and highly significant role on the overall performance of Walia Steel Industry. Therefore, effective materials management and organizational performance of Walia Steel Industry had a positive, highly significant and very strong correlation.

4.4.3 Regression Result Analysis

Regression analysis is concerned with describing and assessing the relationship between a given dependent variable and one or more independent variable(s). Regression analysis is used to understand the relationship between dependent and independent variables and to predict the value of explained variable based on one or more explanatory variables (Gujarati et al., 2009). This is specified in the model summary where the statistical relationship of the dependent and independent variables was shown. The model summary table showed the relationship between the independent variables: procurement management, inventory management, storage

management and interdepartmental collaboration on one hand and the dependent variable (organizational performance) on the other.

The result in Table 4.11 indicates that, the independent variables (the materials management functions) statistically predicted the overall performance of Walia Steel Industry. The model summary revealed that the degree of association between the materials management functions (procurement management, inventory management, storage management and interdepartmental collaboration) and their impacts on organizational performance shown by R with a value of 0.886 that specifying a very strong correlation between the independent variables and the dependent variable.

Table 4.11 indicates that the materials management functions (procurement management, inventory management, storage management and interdepartmental collaboration) jointly contribute 78.5% to the performance of the firm with R-Square (R^2) value of 0.785. This implies that on average, 78.5% of the variation on organizational performance was jointly explained by the variation in explanatory variables (materials management functions) while 21.5% could be due to the impact of unexplained factors. This result is in line with Cross (2019) that effects of materials management have a positive and significant association with productivity of an organization.

Table 4.11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.886[a]	.785	.780	.31775	2.152
a. Predictors: (Constant), Interdepartmental Collaboration, Storage Management, Procurement Management, Inventory Management					
b. Dependent Variable: Organizational Performance					

Source: Own Survey Results and Computation, 2021

According to the model in Table 4.11, the independent variables (materials management functions) have high impact on the performance of Walia Steel Industry indicated by the Adjusted R-Square value of 0.780. All independent variables procurement, inventory and storage management and interdepartmental collaboration have 78% impact on organizational performance. This result coincides with the findings of Florence and Oyebamiji (2018) that materials management has a positive and significant association with organizational performance

and also the result is in line with Taiwo, Claudius, and James, (2012) that there is a positive and significant relationship between efficient materials management and firm's profitability.

Table 4.12: ANOVA of the Variables

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.901	4	14.475	143.366	.000[b]
	Residual	15.852	157	.101		
	Total	73.753	161			

a. Dependent Variable: Organizational Performance

b. Predictors: (Constant), Interdepartmental Collaboration, Storage Management, Procurement Management, Inventory Management

Table 4.13: Regression Coefficients of the Variables

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.585	.150		3.904	.000
	Procurement Management	.147	.041	.166	3.620	.000
	Inventory Management	.287	.089	.294	3.230	.002
	Storage Management	.243	.076	.265	3.218	.002
	Interdepartmental Collaboration	.271	.054	.290	5.002	.000

a. Dependent Variable: Organizational Performance

Source: Own Survey Results and Computation, 2021

The regression model significantly was tested. In Table 4.12, the ANOVA model showing the p-value is 0.000 which means the model is significant for the use of regression analysis. The result in Table 4.12 displayed that the variance of the variables that was developed in the study with F statistic value of $F(2, 160) = 143.366$ and a probability value of $p = 0.000$ was statistically significant at $p < 0.05$ level of significance. The result implied that the interdepartmental collaboration, storage management, inventory management and procurement management have statistically significant impact on organizational performance of Walia Steel Industry. This result is in line with the findings of Ogbadu (2009) that there is a positive and significant relationship between materials management functions and organizational profitability. The result of this finding is also in line with Ibegbulem (2015) that materials management impacts and

organizational performance had a positive and significant association. Similarly, the finding is fit with Cross (2019) that there is a significant relationship between materials management functions and the frequent breakdown of the plant on his study of effects of materials management on the productivity of an organization.

The result in Table 4.13 presents the impact that materials management functions have on Walia Steel Industry performance in association with the level of regression coefficients of the explanatory variables. According to the result, all the materials management functions have high impact on the selected manufacturing company performance. The computed result in the table demonstrated that, all the four independent variables procurement management, inventory management, storage management and interdepartmental collaboration have a positive and significant impact on the organizational performance.

The unstandardized regression coefficients between the independent variables (materials management functions: PM, IM, SM, IDC) and the dependent variable (organizational performance, OP) are described in the form of regression equation.

The established regression function is:

$$\text{Organizational Performance} = \beta_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e_i$$

$$\text{Organizational Performance} = \beta_o + \beta_1 PM + \beta_2 IM + \beta_3 SM + \beta_4 IDC$$

$$OP = 0.585 + 0.147PM + 0.287IM + 0.243SM + 0.271IDC$$

From this regression coefficient results, we can analyze the following points:

1. **Procurement Management**

The result in Table 4.13 verified that, the beta (B) value for procurement management is 0.147 and the p-value is ($p < 0.05$). This implies that on average a 1% improvement in procurement management will increase the performance of Walia Steel Industry by 14.7%, other things remain constant and $p < 0.05$ implies that procurement management impact is significant at 5% level of significance. Thus, we conclude that the impact of procurement management has statistically significant relationship with the steel industry performance.

2. **Inventory Management**

As presented in Table 4.13, the beta (B) coefficient of inventory management 0.287 indicates that, on average a 1% increase in inventory management will increase the steel industry performance by 28.7% setting other things remain constant. This implies that there is a positive and statistically significant association between inventory control/management and

organizational performance. The p-value is ($p < 0.05$) indicates the inventory management impact is significant at 5% level of significance. Therefore, the impact of inventory management/control has a positive and statistically significant effect on the steel industry performance. This indicates that the inventory management system of the firm handled in a healthy manner.

3. Storage/Warehouse Management

The regression result in Table 4.13 regarding to the storage management has a positive and statistically significant relationship with the performance of the steel industry. The beta (B) value of storage management 0.243 indicates on average a 1% improvement in storage management will improve the steel industry performance by 24.3% remaining other things constant. The p-value is ($p < 0.05$) implies that the storage management impact is significant at 5% level of significance. This shows that finished goods/products, defective materials, scraps and surplus materials are relatively managed well in the warehouse of the company.

4. Interdepartmental Collaboration

As shown in Table 4.13, the beta (B) coefficient of interdepartmental collaboration 0.271 indicates that, on average a 1% improvement in interdepartmental collaboration will increase the steel industry performance by 27.1% putting other things remains constant. This implies that there is a positive and statistically significant association between interdepartmental collaboration and organizational performance. The p-value is ($p < 0.05$) indicates the interdepartmental collaboration impact is significant at 5% level of significance. Therefore, the impact of interdepartmental collaboration has a positive and statistically significant impact on the steel industry performance. This displays that there is a healthy communication channel between the departments of the company even if it needs improvement.

From the computed regression model, all the independent variables; procurement management, inventory management system, storage (warehousing) management and interdepartmental collaboration have positive and statistically significant impact on organizational performance of the steel industry. The impact of explanatory variables on organizational performance has been presented in their order of significance along with their beta value.

Inventory management system with a beta (B) value of 0.287 that has a significance level of (0.002) is the best predictor of organizational performance which is followed by interdepartmental collaboration with beta (B) value of 0.271 with a significance level of (0.000)

relatively. The third predictor of organizational performance is the storage (warehouse) management with a beta (B) value of 0.243 that has a significance level of (0.002). The least predictor of organizational performance with a beta (B) value of 0.147 with a significance level of (0.000) is the procurement management as compared with other explanatory variables under the study.

Hypothesis testing is a key procedure in an inferential statistic. This part of the research work is used to test the research hypotheses as follows.

Ha_1: There is significant association between procurement management and firm's performance

Based on the result observed in Table 4.13, the coefficient value for procurement management is positive (0.147) and is highly significant (0.000) which makes certain organizational performance. The p-value of 0.000 is less than the t-statistic value of 9.893 with a standard error value of 0.041. Therefore, the null hypothesis is rejected and the alternative hypothesis is accepted which means that there is a positive and significant association between procurement management and firm's performance of the steel industry.

Ha_2: There is significant relationship between inventory management and organizational performance

According to the result computed in Table 4.13, the coefficient value for inventory management is positive (0.287) and is highly significant (0.002) which ensures organizational performance. The p-value of 0.000 is less than the t-statistic value of 8.271 with a standard error value of 0.089. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted which means that there is a positive and significant relationship between inventory management and organizational performance of the steel industry.

Ha_3: There is significant association between storage/warehouse management and organizational performance

Regarding to the result in Table 4.13, the coefficient value for storage management is positive (0.243) and is highly significant (0.002) which verifies organizational performance. The p-value of 0.002 is less than the t-statistic value of 10.557 with a standard error value of 0.076. This indicates that, on average, other things remain constant; a unit increase in storage management will lead to increases organizational performance by 0.738. Thus, the null hypothesis is rejected,

and the alternative hypothesis is accepted which means that there is a positive and significant association between storage management and organizational performance of the steel industry.

Ha_4: There is significant relationship between interdepartmental collaboration and company's performance

Concerning to the results figured in Table 4.13 above, the coefficient value for interdepartmental collaboration is positive (0.271) and is highly significant (0.000) which make sure organizational performance. The p-value of 0.000 is less than the t-statistic value of 15.702 with a standard error value of 0.054. Therefore, the null is rejected, while the alternative hypothesis is accepted which means that there is a positive and significant relationship between interdepartmental collaboration and company's performance of the steel company.

The implication of these results obtained in the hypotheses tests is that, there is a positive and statistically significant relationship between effective materials management functions and performance of the steel industry in the study. This finding is in line with Florence and Oyebamiji (2018) that materials management dimensions jointly influenced the performance of cement manufacturing industries in Nigeria. And also this result is matched with Suleiman (2010) that effective management and control of materials contribute to the performance of an organization in Nigeria. This implies that there is a need of taking improving actions on materials management functions to make sure the organizational performance of the steel industry.

Table 4.14: Summary of Expected and Actual Impact of Independent Variables on Dependent Variable

Independent Variable	Dependent Variable	Expected Sign	Actual Sign	Significance Level
Procurement Management	OP	Positive	Positive	0.000
Inventory Management/control	OP	Positive	Positive	0.002
Storage Management	OP	Positive	Positive	0.002
Interdepartmental collaboration	OP	Positive	Positive	0.000

From Table 4.14 the variables are statistically significant at 5% significance level was considered as the independent variables have statistically significant impact on the dependent variable.

4.5 Semi-Structured Open-Ended Question Analysis

In addition to quantitative data, a semi-structured open-ended question was distributed to the respondents in association with the quantitative data. Out of 116 respondents those who gave their responses for the closed-ended questions used quantitatively, only 91 (78.45%) respondents gave their responses to the semi-structured open-ended question. Even if there is a wide gap how to express their idea between the respondents, as it was said "goes around the bush", most of them goes around similar challenges that their company mainly faced. Since, 78.45% respondent rate is appropriately enough for analysis, the researcher tried to make analysis on the open-ended question responses provided by the respondents by means of summarizing together.

Accordingly, among the responses given by the respondents, one of the main challenges explained by the respondents is the shortage of the raw materials that the company became in risk due to the occurrence of COVID-19 pandemic. The other reason raised by the respondents as critical issue for shortage of raw materials is the lack of foreign exchange (lack of dollar currency) resulted from the current situations that the country faced. As a result, the steel industry is not working with its full potential because of this shortage of raw materials and the occurrence of COVID-19 pandemic disease. The steel industry is forced to use its employees in shift to keep COVID-19 protection protocol. All the company's machineries are not working together as before the occurrence of the pandemic disease. Even though all the steel products are demanded by the market, the machineries of the steel industry work based on the availability of raw materials from the market in providing a smaller number of products than the usual resulting in reduced performance even if the company is not in loss.

The next considerable point that was raised by the respondents as the company's challenge is that there is a weak interdepartmental coordination. Based on their response, all the departments of the firm are running with less coordination to meet their planned goals. Even though the human resource management is the responsible department to coordinate all the firm's departments, practically the human resource management of the industry can be working with low efficiency in order to coordinate their activities. Therefore, since the company's departments are working with less collaboration with each other due to less performance of the human resource management, the steel industry interdepartmental collaboration needs improvement to achieve the company's performance objective.

The other important point that was focused by the respondents as a challenge that their company faced is the weakness of the storage (warehousing) system of the steel industry in finished goods and defective products storage. The respondents indicated that the finished goods/products were stored with the defective products in the same storage room with less proper location and both were stored at the operation room. The firm's raw materials and finished products are placed in a scattered means in the firm's compound that forced the products to become defected. Therefore, since the effective and defective products were stored side by side causing sometimes the defective products might be mixed with the correctly shaped products and the storage room was managed by unskilled employees, the steel industry storage system needs an improving action and skilled employees to meet the firm's targeted profit goal.

The next essential issue that the respondents raised as a challenge, for the steel industry in order to attain the expected profit level is the problem of procurement department. They indicated that the department is not managed by trained and skilled personnel. As a result, sometimes low-quality raw materials were purchased causing in high defective products which reduces the productivity of the steel industry. But almost all of the respondents did not raise the issue of inventory management system of the steel industry. Hence, there is a need of using trained and skilled personnel to manage the procurement department of the firm to achieve an improved organizational performance.

Additionally, the respondents raised essential standpoints that might needs improvement by the steel industry's management which are critical issues in the attainment of organizational competitiveness and performance to sustain the vision and mission of the firm as a business. These important points raised by the respondents additionally include unsteady power supply, insufficient water supply, shortage of trained and skilled manpower at some positions, management ignorance to understand the firm's employees need and interest, absence of training program for their employees to develop their knowhow, low level of salary and absence of incentives, no computerized inter linkage between departments, overlapping of duties, absence of maintenance of machineries and shortage of machineries spare parts. These points of view provided by the respondents have their own impact on the steel industry's productivity and performance which needs improvement.

4.6 Discussion

The findings of the data analyzed above based on respondent's responses was discussed in order to answer the raised research questions shown that, the impact of materials management functions jointly contribute their positive and significant role in the achievement of improved company's performance. From the result obtained, all the materials management impact indicators (functions) have positive and statistically significant relationship with the performance of Walia Steel Industry.

The materials management practices explained through effective procurement procedures, inventory control systems, storage handling and collaborative work of departments were positively and significantly associated with the performance of Walia Steel Industry. This result was consistent with the findings of Cross (2019), Florence and Oyebamiji (2018), Suleiman (2010) and Ogbadu (2009) in their study aimed to the achievement of improved organizational performance through effective materials management practices. It is also in line with Taiwo, Claudius and James (2012) findings that there is a positive and significant relationship between efficient materials management and company's performance. This indicates that effective management of materials is the most important predictor of organizational performance.

The primary predictor from the findings among materials management functions under the study obtained as there is a positive and significant association between inventory management system and organizational performance is in line with the finding of Eneje (2012) in that efficient inventory management influences the performance of brewery factories in Nigeria. And also, the result is in line with the finding of Uman (2012) in that effective inventory management is a key factor in attaining organizational performance. But it contradicts the finding of Dagim (2018), Florence and Oyebamiji (2018) that the management of inventory has a positive effect on firm's performance but it has insignificant effect on firm's performance.

The second impact indicator of materials management practices on organizational performance is the interdepartmental collaboration that has a positive and significant relationship with organizational performance which is supported by the finding of Adarsh, Shiva, Asisha and James (2015) in that interdepartmental coordination is an influencing indicator of materials management impacts on performance of beverage and spice manufacturing firms in India. But it

contradicts the finding of Florence (2018) in that interdepartmental collaboration has insignificant effect on company's performance.

The third predictor from the findings of materials management functions that has a positive and significant association with organizational performance is the storage management which is in line with the findings of Asmelash (2017), Ibegbulem and Okorie (2015) and Florence (2018) in that storage management has a positive and significant impact on firm's performance.

Comparatively, the least predictor from the result obtained on materials management functions is the procurement management. The finding on procurement management that it has a positive and significant impact on organizational performance opposes the finding of Florence and Oyebamiji (2018) that the procurement management system has a positive effect on firm's performance but not significantly. But the result is in line with the finding of Suleiman (2010) and Abimbola (2017) in that effectiveness in procurement management enhances production, reduces cost as well as leads to generation of profit that enhances organizational performance.

Therefore, the above findings provided answers to the research questions are connected to how do the steel manufacturing industry was engaged in attaining improved organizational performance and competitiveness through effective implementation of materials management functions. As already specified, most of the time the achievement of organizational performance of the steel industry under the study was the result of inventory management system, storage (warehouse) management practices, procurement management procedures and interdepartmental collaboration implemented by the industry. Based on this study results, the materials management function with strongest influence on organizational performance is the inventory management/control system. The second factor that impacts organizational performance from the finding is the interdepartmental collaboration followed by storage/warehouse management while the materials management function with least influence on firm's performance is the procurement management practices of the steel industry.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter provides the summary of the study, conclusions that have been derived from the study findings and at the last it proposes recommendations for improvement and for further studies on subject area.

5.1 Summary

The purpose of this study was to assess the impact of materials management practices on performance of manufacturing company with a particular emphasis on Walia Steel Industry PLC through a specific focus to the four materials management functions; inventory management, interdepartmental collaboration, storage management and procurement management practices of the focal firm. To get first-hand, detailed and factual information descriptive research design and to investigate casual relationship between variables explanatory research design were used in the study. The study was conducted using both quantitative and qualitative research methods which are referred as mixed research method. The study depends on the understanding of the selected respondents of the target steel industry. The study also used a cross-sectional data model. Hence, the findings of the study found from the analysis of the data were summarized clearly and briefly.

According to the results found in the study, majority of the respondent's response point out that materials management practices are the potential factors that influences the performance and profitability of manufacturing companies. For instance, 83.9% of the respondents made it clear that materials management problems significantly impact the overall performance of the target steel industry while only 14.2% of them have no awareness about the impact and 1.9% of the denied. Hence, the findings show that effective materials management practices can significantly enhances the performance of manufacturing companies.

Based on the findings found in the study, most respondents explained that the procurement management procedures implemented by the focal firm is one of the important predictors of the firm's performance. Even though it needs trained and skilled personnel, 72.8% of the respondents demonstrated that procurement management plays a crucial role on firm's performance positively while 23.5% of the respondents have no suggestion on the impact of procurement management and 3.7% of the respondents denied. This implies that there is a

positive and significantly relationship between procurement management and organizational performance.

Regarding to the inventory management system 67.2% of the respondents verified that inventory control enhances organizational performance by reducing costs related with storage and handling of materials but 27.2% of the respondents were not sure of the impact of inventory management system on firm's performance 5.6% of them was denied. This indicates that if the company implements effective inventory management it achieves the expected business competitiveness and attains organizational performance but it needs computerized inventory management system.

Concerning the result found in the study, almost half of the respondents (50%) revealed that profits can be achieved if managers effectively and successfully handle issues relating to stores location, layout and equipment examination, safety of stores, production issues, stock records and disposal of obsolete materials while near half of the respondents (48.1%) have no opinion on the impact that storage management has on organizational performance and 1.9% of them denied the issue. This is the implication of the requirement of better improvement on the use of proper storage location to achieve the targeted organizational objectives.

Depending up on the findings in the study, 68.5% of the respondents mentioned that for a business to be successful and competitive, organizations need to implement and maintain effective interdepartmental coordination while 27.8% of the respondents have no suggestion on the effect of interdepartmental collaboration on firm's performance and 3.7% of the respondents denied. This implies that the targeted firm tries to work on the implementation of interdepartmental coordination to meet its goal.

Based on their coefficient of correlation, the independent variables; the inventory management system, the storage management practices, the interdepartmental collaboration and the procurement procedures had a positive, highly and strongly significant correlation with a dependent variable organizational performance of the target firm Walia Steel Industry PLC with a coefficient of correlation 0.831, 0.803, 0.779 and 0.616 respectively.

Based on the result of the findings of regression analysis coefficients, the inventory management system is the best predictor of the performance of Walia Steel Industry PLC with a coefficient of determination value of 0.287 followed by interdepartmental collaboration and then by storage management practice with a coefficient of determination value of 0.271 and 0.243 respectively while in comparison with the other explanatory variables the least indicator of the performance

of Walia Steel Industry PLC is the procurement management procedures with a coefficient of determination value of 0.147.

Therefore, this study examines the impact of effective materials management on organizational performance of manufacturing companies with a specific orientation of Walia Steel Industry PLC. This study demonstrates that materials management impact indicators (functions) cooperatively contribute positively and significantly to organizational performance. The study summarizes that the materials management functions; inventory management, storage management, procurement management and interdepartmental collaboration, have a positive and significant impact on company's performance.

5.2 Conclusion

This study concludes that management of materials practices are continuous processes in manufacturing companies. There are always the requirements of managing the raw materials, work in process and finished goods/products properly throughout the implementation of systematic techniques of management of materials that leads to better performance attainment in the organization. The objective of the study is assessing the impacts that materials management functions have on performance of manufacturing companies in Ethiopia, with a particular reference of Walia Steel Industry PLC. The study uses four functions (impact indicators) of materials management as independent (explanatory) variables and organizational performance as dependent variable.

This study hypothesized the overall impacts of materials management practices and the impacts of materials management functions; inventory management system, storage management practices, procurement management procedures and interdepartmental collaboration on performance of manufacturing companies. In particular, the study focused on testing the hypotheses and answering the research questions of the study given that the observed findings of the study proposed some considerable conclusions that all the null hypotheses were rejected while all the alternative hypotheses were accepted.

According to the findings of the research study, it is decisive that the materials management practices impact the performance of Walia Steel Industry positively and significantly. The implementation of effective management of materials practices leads the manufacturing company to attain competitive advantages including lower inventory costs in handling balanced stocks and less obsolete stocks, better coordination between the departments activities, improved production atmosphere, lower storage and transport costs, lower prices and better delivery

conditions for purchased materials, greater flexibility locally and globally, the availability of advanced technology, the achievement of better market share and on time organizational performance in satisfying customer requirements in which all would improves the performance of the manufacturing company.

Moreover, the study model demonstrates that there exists a positive and statistically significant relationship between the materials management functions; inventory management, storage management, procurement management and interdepartmental coordination and the dependent variable the performance of Walia Steel Industry. From those materials management functions inventory management is the best predictor of the firm's performance relatively followed by interdepartmental collaboration having a positive and significant influence on Walia Steel Industry performance. The third predictor of the firm's performance is storage management that has a positive and significant impact on the firm's performance while the procurement management is relatively the least predictor of the firm's performance with positive and significant association.

Hence, the study concludes that effective and efficient management of materials is a genuine instrument through which an organization can achieve significant cost saving, improvement in production efficiency and increase in organizational performance.

5.3 Recommendations

In manufacturing companies, the management of materials is a corner stone and central concern to accomplish the objectives of the company. The study conducted on the target company is required to evaluate its existing materials management practices based on the main materials management functions to make the necessary modifications in order to benefit the firm through the attainment of significant cost saving, improved production efficiency to produce quality products and increased in organizational performance. Based on the findings of the study, it is necessary to forward the following suggestions.

- The concept of materials management is essential to Walia Steel Industry. The control of raw materials, work-in-process and finished goods/products has maximum impact on the success of organizational performance. Hence, the researcher recommends that greater attention shall be paid to the application of effective materials management practices in coordinating all departments properly.
- To enhance the organizational performance with the intention of handling the materials management practices properly in line with the global variations, the study recommends

that there is a need of particularly employing proper procurement procedures to surpass and assure its future in improving organizational performance.

- The research finding revealed that Walia Steel Industry should maintain good level of inventory control as it contributes a lot to the operational performance of the organization, since an effective inventory management has an overall impact on improving operational performance. Hence, the study recommends that the inventory management shall arrange better inventory control system for all inventory items for usages in order to enhance the organizational performance.
- In store house of the firm finished products and defective products were stored side by side. A visible weakness was observed clearly in storage management of the steel industry in storing materials, work-in-process, finished goods/products and defective products separately with proper warehouse/store layout. Hence, the study recommends that the storage management of the steel industry shall organize proper storage (warehouse) in order to enhance the firm's performance.
- Even though the finding of the study provides evidence for positive relationship of interdepartmental collaboration with organizational performance there was weak interdepartmental coordination between the firm's procurement, inventory and storage departments. Hence, the study recommends that the steel industry management shall develop effective interdepartmental collaboration especially in the area of procurement, inventory and storage managements for smooth flow of information and proper communication between them in order for the attainment of improved organizational performance.

5.4 Suggestion for Further Study

However, the outcomes of the research evidently add significant value to our understandings of materials management functions, and their impact on organization performance, the research have some limitations. Lack of previously conducted researches on this subject area as a fundamental standpoint for new research work was a great challenge and limitation during conducting this study. Conducting a study on only one firm and a year time duration cannot be a representative for others. Focusing only to one manufacturing firm is also a key limitation of this study rather than using two or more manufacturing firms. This study focuses on only one year of study than focusing on two or more years was another critical limitation.

The other core limitation of the study was a variable limitation in assessing only the impact of materials management functions on the performance of a selected manufacturing company in terms of procurement, inventory control, storage and interdepartmental collaboration practices excluding other functions of materials management from the stand point of the selected Steel Industry. Hence, this study might be a good basic stand point for future works on materials management contribution to the organizational performance of manufacturing companies. Therefore, the researcher recommended that further studies shall be carried out in the area of the implementation of effective materials management functions on several firms than on one firm and more than one-year surveys than a year in a wide range of study to set better generalization as representative of other manufacturing firms and to develop in-depth understandings in manufacturing companies of the country considering its importance to firm's performance.

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Appendix A

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMAENT OF BUSINESS ADMINISTRATION

Questionnaires

Dear Respondents:

This questionnaire is designed to gather pertinent information on "***The Impact of Materials Management on Organizational Performance: A Case of Walia Steel Industry PLC***" as a partial fulfillment of the requirements for the Degree of Master of Business Administration (MBA) in Management.

The purpose of this questionnaire is to gather relevant data for the proposed study, and hence you are kindly requested to assist the successful completion of the study by providing the necessary information. Your voluntary participation is very important for the study and the information you share will stay confidential and only used for the aforementioned academic purpose only, thus not affects you in any way rather it may possibly help you in improving the materials management practices of your company. So, your genuine, frank and timely response is vital for the success of the study. I want to thank you in advance for your kind cooperation and dedication of your precious time to fill this questionnaire.

Instructions: -

The researcher uses this questionnaire for the genuine information is highly decisive to the success of this study. Therefore,

- ✓ Not need of writing your name.
- ✓ Indicate your answer with a check mark (X) on the appropriate cell
- ✓ With great excuse, possibly return back to timely.
- ✓ For any challenges, explanation and suggestion please do not hesitate contact the researcher through the following addresses:

Email: aberazer@gmail.com Phone: +251911076682

Thank You Again!

Part I:- Respondent's Profile

1. Gender: 1. Male ☐ 2. Female ☐

2. Age: 1.21-30 ☐ 2. 31-40 ☐ 3. 41-50 ☐ 4. Above 50 ☐

3. Respondent's Educational level:

1. Up to Diploma ☐ 2. BA/BSC ☐ 3. MA/MSC ☐ 4. Above MA ☐

4. Respondent's Work Experience

1. ≤5years ☐ 2. 6-10 years ☐ 3. 11-15 years ☐ 4. 16-20 years 5. >20years ☐

5. Respondent's Current Position

1. Top Manager ☐ 2. Department Manager (Head) ☐ 3. Employee ☐

Part II: - Impacts of Materials Management Functions on the Firm's Performance

The following questions are about how your organization is implementing materials management practices in order to achieve its targeted performance objectives. The main purpose of the instrument is to assess the influences of procurement management, inventory management, storage (warehousing) management and the effectiveness between their interdepartmental collaboration. To what extent do you agree with the following statements about materials management practices in your organization, ranging from strongly disagree to strongly agree? And put "X" mark for each.

1: **Strongly Disagree**, 2: **Disagree**, 3: **Neutral,** 4: **Agree** and 5: **Strongly Agree**

Variables		Items	Agreement Scales				
			1	2	3	4	5
Organizational Performance (OP)	OP1	Materials management functions have less impact on organizational performance and competitiveness.					
	OP2	Materials procurement management highly sustains the performance of an organization.					
	OP3	Organizational performance is affected highly by materials inventory control systems.					
	OP4	The organizational performance can be enhanced less by materials storage (warehousing) system.					
	OP5	The organizational performance can be impacted significantly by interdepartmental collaboration.					
	PM1	Most of the time the firm's purchasing management practices affects the overall organizational performance in profit generation procedures.					

Procurement Management (PM)	PM2	Procurement (purchasing) procedures highly affect organizational performance.					
	PM3	The procurement system of the steel industry is managed by trained and skillful personnel.					
	PM4	Effective procurement of materials enhances the steel industry's productivity.					
	PM5	The purchasing department made a check and balance between the planned and the purchased materials quantity and quality.					
Inventory Management (IM)	IM1	Inventory management practices enable the industry to meet the targeted objectives.					
	IM2	Knowing stock at hand and expected stock enhances firm's growth.					
	IM3	The firm has computerized all inventory management systems.					
	IM4	The firm paid maximum attention to those inventories whose value is highest.					
	IM5	Growth of a firm is measured based on the level of stock it has.					
Storage Management (SM)	SM1	The storage (warehouse) management has a significant role in achieving firm's objective.					
	SM2	The firm pays great attention to the storage management in order to handle items properly.					
	SM3	Storage of materials ensures continuity of production and productivity.					
	SM4	Most of the time, in your firm's warehouse, items are placed in the correct location.					
	SM5	We are successful in minimizing total product damage in the warehouse.					
	SM6	The design of the store is easy to access items, free from damage of items and suitable to load and upload.					

	SM7	Most of the time your firm's store personnel utilizes a warehouse spaces properly at the time of receiving.					
Interdepartmental Collaboration (IDC)	IDC1	The interdepartmental coordination between all the firm's departments plays a significant role for the performance of the steel industry.					
	IDC2	The entire firm's departments perform their duties collaboratively in order to achieve its objectives.					
	IDC3	The top management focuses particularly to the inter-departmental coordination of the firm's departments.					
	IDC4	There is a use of open and positive communication between all the firm's departments.					
	IDC5	The firm's human resource management practices enhance good interdepartmental coordination.					

Part III: - Please Write Your Answer Briefly and Clearly for Open Questions

26. What are the overall current challenges facing your organization in materials management practices?_____
_____
_____
_____
_____
_____

27. If you have additional comments or ideas about warehouse practice of the company please don't hesitate to express your feeling_____
_____
_____
_____
_____

Appendix B

በአዲስ አበባ ዩኒቨርሲቲ

የቢዝነስ እና ኢኮኖሚክስ ኮሌጅ

የቢዚነስ አድሚንስትሬሽን ድፓርትመንት (ክፍል)

መጠይቅ

የተከበረ የዚህ መጠይቅ መልስ ሰጪ፤

ይህ መጠይቅ በቢዝነስ አድሚኒስትሬሽን የትምህርት ክፍል ለሁለተኛ ዲግሪ የመመረቂያ መስፈርት ማሟያነት **"የንብረት/ቁሳቁስ አስተዳደር በድርጅታዊ ስፈፃጸም ላይ የሚያሳድረዉ ተጽዕኖ በዋልያ ብረታ ብረት ኃላፊነቱ የተወሰነ የግል ማህበር ተምሳሌትነት"** ጥናታዊ ፅሑፍ (Research) ለመስራት የሚያገለግሉ አስፈላጊ መረጃዎችን ለማሰባሰብ የተዘጋጀ ነዉ፡፡

የዚህ መጠይቅ ዓላማ ለታቀደዉ የጥናት ሥራ ጠቃሚ መረጃዎችን ለማሰባሰብ ብቻ ስለሆነ ለዚህ የጥናት ሥራ በእዉታማ ሁኔታ መጠናቀቅ በነፃነት፤ በግልፅነት እና በእዉነት ላይ የተመረኮዘ እዉነተኛ መረጃ በመስጠት ትብብርዎትን እንዲያደርጉልኝ በአክብሮት እጠይቅዎታለሁ፡፡ የእርስዎ ፈቃደኛ ተሳትፎ ለጥናቱ ስኬታማነት በጣም ጠቃሚ ስለሆነ የሚሰጡት መረጃ ለትምህርት ዓላማ ብቻ የሚዉል በመሆኑ ሚስጥራዊነቱ የተጠበቀ እና በእርስዎ ላይ የሚያስከትል ምንም ዓይነት ተፅዕኖ የማይኖረዉ እንዲሁም የጥናቱን የመጨረሻ ዉጤት ድርጅትዎ ምናልባትም በግብዓትነት ልጠቀመዉ እና በድርጅቱ የንብረት አስተዳደር አሰራሮች ላይ የሚስተዋሉ እንከኖች ካሉ መሻሻሎችን ሊያመጣ እንደሚችል በዚሁ ለማስገንዘብ እወዳለሁ፡፡ ስለሆነም የእርስዎ በቀናነት፤ በእዉነት እና በወቅቱ መልስ መስጠት ለጥናታዊ ፅሑፉ ስኬታማነት ከፍተኛ ሚና አለዉ፡፡ ዉድ የሆነ ጊዜዎትን ሰዉተዉ ይህን መጠይቅ በመሙላት በቅንነት ላደረጉልኝ ትብብር በቅድሚያ ልባዊ ምስጋናዬን ላቀርብልዎት እወዳለሁ፡፡

መመሪያ፤

ጥናት አድራጊዉ እነዚህን መጠይቆች ተጨባጭ በሆነ መረጃነት ስለሚጠቀሚባቸዉ ለጥናታዊ ፅሑፉ ስኬታማነት ከፍተኛ አስተዋፅዎ አላቸዉ፡፡ ስለዚህም፤

- ስምዎትን መላፍ አይጠበቅብዎትም፡፡
- በተሰጠዉ ቦታ ላይ የ"X" ምልክት በማድረግ መልስዎን ይስጡ (ያመላክቱ)፡፡
- በተቻለዎት መጠን አጠር ባለ ጊዜ መጠይቁን ሞልተዉ እንዲመልሱ በአክብሮት እጠይቃለሁ፡፡
- ለሚያጋጥምዎት ጥያቄዎች፤ ማብራሪያ ካስፈለገዎት እንዲሁም ምክረ-ሃሳብ ለመስጠት ምንም ሳያመነቱ ጥናት አድራጊዉን በሚከተለዉ አድራሻ ሊያገኙ ይችላሉ፡፡

ስልክ፡ 0911076682 ወይም 0920350302 ኢ-ሜይል፡ aberazer@gmail.com

ይግሚ አመሰግናለሁ!!!

ክፍል 1፡- አጠቃላይ ሁኔታ

1. ፃታ፡ 1. ወንድ ☐ 2. ሴት ☐
2. ዕድሜ፡ 1. ከ21-30ዓመት☐ 2. ከ31-40ዓመት ☐
   3. ከ41-50ዓመት ☐ 4. ከ50ዓመት በላይ ☐
3. የትምህርት ደረጃ፡ 1. እስከ ዲፕሎማ ☐ 2. የመጀመሪያ ዲግሪ ☐
   3. ሁለተኛ ዲግሪ (ማስተርስ) ☐ 4. ከ2ኛ ዲግሪ በላይ ☐
4. የሥራ ልምድ፡ 1. እስከ 5ዓመት ☐ 2. ከ6-10ዓመት ☐ 3. ከ11-15ዓመት ☐
   4. ከ16-20ዓመት ☐ 5. ከ20ዓመት በላይ ☐
5. አሁን ያሉበት የሥራ እርከን ደረጃ፡ 1. ከፍተኛ አመራር ☐ 2. የዲፓርትመንት ኃላፊ☐
   3. ሠራተኛ ☐

ክፍል 2፡- በድርጅቱ አፈፃፀም ላይ የንብረት አስተዳደር ተፅዕኖ

የሚከተሉት መጠይቆች በንብረት አስተዳደር አተገባበር ሂደቶች ድርጅታችሁ የታቀደጨን የአፈፃፀም ዓላማዎች ላይ እንዴት መድረስ እንደሚችል የሚያመላክቱ ናቸዉ። የዚህ መጠይቅ ዋና ዓላማ የንብረት ግዢ አስተዳደር፤ የንብረት ቁጠራ አስተዳደር እና የግመጃ ቤት (መጋዘን) አስተዳደር ተፅዕኖዎችን እንዲሁም በየክፍሉ (ዲፓርትመንቱ) መካከል ያለዉን የእርስ በእርስ መረዳዳት እና ትብብር ዉጤታማነት ለይቶ ማሳየት እና የመፍትሔ አቅጣጫዎችን ማመላከት ነዉ። ከዚህ በታች ከተሰጡት አማራጮች መካከል በድርጅትዎ የንብረት አስተዳደር አተገባበር ላይ ከ"በጭራሽ አልስማማም" እስከ "በጣም እስማማለሁ" ባሉት አማራጮች መካከል በምን ያህል ደረጃ ይስማማሉ? ለእያንዳንዱ የስምምነት ደረጃ በ"X" ምልክት ያሳዩ። 1. **በጭራሽ አልስማማም**
2. **አልስማማም** 3. **መካከል ላይ ነኝ** 4. **እስማማለሁ**
5. **በጣም እስማማለሁ**

ተ.ቁ	የመጠይቅ ዓይነት					
ሀ	**ድርጅታዊ ዉጤታማነት**	1	2	3	4	5
1	የንብረት አስተዳደር ተግባራት በድርጅቱ አፈፃፀም ላይ አነስተኛ ተፅዕኖ ይኖራቸዋል።					
2	ዉጤታማ የንብረት ግዢ አስተዳደር የድርጅቱ አፈፃፀም በከፍተኛ ደረጃ ቀጣይነት እንዲኖረዉ ያደርጋል።					
3	ዉጤታማ የንብረት ቁጠራ አስተዳደር በድርጅቱ አፈፃፀም ላይ ተፅዕኖ ከፍተኛ አለዉ።					
4	ዉጤታማ የንብረት ግምጃ ቤት (መጋዘን) አስተዳደር አሰራር የድርጅቱ ምርታማነት እንዲጨምር ያደርጋል።					
5	በየክፍሉ ወይም ዲፓርትምንቱ መካከል ያለዉ የእርስ በእርስ መረዳዳት እና ትብብር ዉጤታማነት በድርጅቱ አፈፃፀም ላይ ከፍተኛ ተፅዕኖ አለዉ።					
ለ	**የግዢ አስተዳደር**	1	2	3	4	5

6	አብዛኛዉን ጊዜ የድርጅቱ የንብረት ግዢ አስተዳደር አተገባበር በአጠቃላይ በድርጅታዊ የትርፍ ማስገኛ ሂደት አፈፃፀም ላይ ከፍተኛ ተፅዕኖ ያሳድራል።					
7	የንብረት ግዢ ሥርዓት ቀደም-ተከተል በድርጅቱ ብቃት ላይ ከፍተኛ ተፅዕኖ ያሳድራል።					
8	የድርጅቱ የንብረት ግዢ አሰራር በሰለጠኑ እና ክህሎት ባላቸዉ ሠራተኞች የሚመራ ነዉ።					
9	ዉጤታማ የንብረት ግዢ አስተዳደር የድርጅቱ ብቃት እንድጨምር ያደርጋል።					
10	የድርጅቱ የንብረት ግዢ ክፍል (ዲፓርትመንት) የታቀዱ እና የተገዙ ንብረቶች ብዛት እና ጥራት ተመጣጣኝ መሆናቸዉን የማመሳከር ሥራ ይሠራል።					
ሐ	**የንብረት ቅጠራ አስተዳደር**	1	2	3	4	5
11	የንብረት ቅጠራ አስተዳደር አሰራር የብረታ ብረት እንዱስትሪዉ የታለመለትን ግብ እንዲደርስ (እንዲመታ) ያስችለዋል።					
12	በመጋዘን (በግምጃ ቤት) ዉስጥ ያለዉን እና መኖር ያለበትን የንብረት መጠን ማወቅ የድርጅቱን ሰድገት ለማምጣት ያስችላል።					
13	ድርጅቱ በኮምፒተር የታገዘ አጠቃላይ የንብረት ቅጠራን የማስተዳደር አሰራር አለዉ።					
14	ድርጅቱ ተሳልቅ ዋጋ ላላቸዉ ንብረቶች ከፍተኛ ትኩረት በመስጠት ይቆጣጠራል።					
15	የድርጅቱ የሰድገት ደረጃ የሚለካዉ በግምጃ ቤት ዉስጥ ባለዉ የንብረት መጠን መሰረት በማድረግ ነዉ።					
መ	**የንብረት ግምጃ ቤት (መጋዘን) አስተዳደር**	1	2	3	4	5
16	የድርጅቱን ዓላማ ለማሳካት የንብረት ግምጃ ቤት አስተዳደር ተልቅ ሚና አለዉ።					
17	ንብረትን በሥርዓቱ ለመያዝ እና ለመቆጣጠር ድርጅቱ ለንብረት አስተዳደር ክፍል ተልቅ ትኩረት ይሰጣል።					
18	የንብረት ግምጃ ቤት አስተዳደር የድርጅቱን ምርት እና ምርታማነትን ቀጣይነት እንዲኖረዉ ያደርጋል።					
19	አብዛኛዉን ጊዜ በድርጅቱ ግምጃ ቤት ዉስጥ ሁሉም የንብረት ዓይነቶች በትክክለኛ የአቀማመጥ ቦታ ላይ ይቀመጣሉ።					
20	በድርጅቱ መጋዘን ዉስጥ አጠቃላይ የንብረት ወደም የምርት ቢልሸት በመቀነስ ስኬታማ ነን።					
ሠ	**የክፍሎች (ዲፓርትመንቶች) እርስ በእርስ መተባበር**	1	2	3	4	5

21	በድርጅቱ ሁሉም ክፍሎች (ዲፓርትመንቶች) መካከል ያለዉ የእርስ በእርስ መተባበር ለድርጅቱ ብቃት ከፍተኛ ሚና ይጫወታል።					
22	ድርጅቱ ያለማቸዉን ግቦች ለማሳካት የድርጅቱ ሁሉም ዲፓረትመንቶች (ክፍሎች) የሥራ ድርሻቸዉን በትብብር እና በመደጋገፍ ያከናዉናሉ።					
23	የድርጅቱ የበላይ አስተዳደር የድርጅቱ ሁሉም ክፍሎች በትብብር እና በመደጋገፍ ሥራቸዉን እንዲያከናዉኑ በተለየ ሁኔታ ትኩረት አድርጎ ይሰራል።					
24	በሁሉም የድርጅቱ ክፍሎች መካከል ግልፅ እና አዎንታዊ (positive) የሆነ ጥሩ የአሰራር ግንኙነት መስመር አለ።					
25	የድርጅቱ የሰዉ ኃይል አስተዳደር በሁሉም የድርጅቱ ክፍሎች መካከል ጥሩ የመተባበር እና የመደጋገፍ መንፈስ እንዲኖር ያበረታታል።					

ክፍል 3፡- ስላክሞትን ለሚከተሉት ጥያቄዎች መልስዎትን ግልፅ እና አጠር ባለ ሁኔታ ይስጡ(ያስቀምጡ)።

26. በድርጅትዎ የንብረት አስተዳደር አሰራር ላይ በአሁኑ ወቅት ጠቅለል ባለ መልኩ እያጋጠሙ ያሉ ችግሮች (ተግዳሮቶች) ምንድን ናቸዉ?_____

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27. በድርጅቱ የንብረት አስተዳደር አሰራር ላይ ተጨማሪ አስተያየት፤ ምክረ-ሃሳብ እንዲሁም መሻሻል የሚሉት ጉዳይ ካለዎት ስላክሞት ያለምንም ማመንታት እንዲገልፁልኝ በአክብሮት እጠይቃለሁ። _____

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Appendix C

Yuunivarsiitii Finfinnee

Kolleejjiii Biizinasii fi Ikoonoomiksii

Dipaartimantii Bulchiinsa Biizinasii

Gaafannoo

Kabajamoo Deebii Kennaa:

Gaafannoon kun Dipaartimantii Bulchiinsa Biizinasiitti ulaagaa barbaachisummaa barnoota Digirii 2^{ffaa} guutachuuf mata-duree "**Adeemsi Bulchiinsa Qabeenyaa Dandeettii Raawwannaa Dhaabbatichaa irratti Dhiibbaa inni qabu, Fakkeenyummaa Dhaabbata Industirii Oomisha Sibiilaa Waaliyaa Itti Gaafatamummaan Isaa Murtaa'e**" fudhachuun qorannoo fi qo'annoo gaggeessuuf ragaalee barbaachisoo ta'an funaanuuf kan qophaa'e dha.

Kaayyoon gaafannoo kanaa hojii qorannoo karoorfame kana hojjechuuf ragaalee barbaachisoo ta'an funaanuuf qofa waan ta'eef haala gaariin galma ga'umsa hojii qorannoo kanaaf ragaaleen bilisa taatanii, iftoominaa fi dhugaadhaan kennuun deeggarsa taasistaniif hunda dursa galata guddaan isiniif dhiyeessa. Fedhii keessaniin hirmaannaan isin taasiftan galma ga'umsa qorannoo kanaaf baay'ee barbaachisaa waan ta'eef ragaaleen isin kennitan kaayyoo barnootaa qofaaf kan oolu fi icciitiin isaa kan sirritti kan eegamu akkasumas tarii dhaabbatni keessaan yoo itti fayyadame adeemsa bulchiinsa qabeenyaa irratti hir'inoota mul'atan ittiin fooyyessuuf kan gargaaru ta'uu isaa gamanumaan isin hubachiisuun barbaada. Kanaafuu, iftoominaan, dhugaadhaanii fi yeroodhaan deebiin isin kennitan firii qabeessummaa qorannichaatiif gahee olaanaa qaba. Yeroo keessan qaalii ta'e wareeguun gaafannoo kana guutuudhaan deeggarsa miira obbolummaan naaf taasistaniif duraan dursee galata olaanaa isiniif dhiyeessa.

Qajeelfama:

Qorannoo gaggeessaan gaafannoowwan kana ragaalee qabatamoo taasisuun kan itti fayyadamu waan ta'eef firii-qabeessummaa barreeffama qorannoo kanaaf ga'ee olaanaa qabu. Kanaafuu,

- Maqaa keessan barreessuun isin irraa hin eegamu.
- Bakka kenname irratti mallattoo "X" taasisuun deebii keessan agarsiisaa.
- Hanga isiniif danda'ametti deebii keessan yeroo gabaabaa keessatti deebisuu yaalaa.
- Dhimmoota isin mudatan kamiifuu, ibsa yoo isin barbaachise akkasumas yaada ijaaraa ta'e kennuuf mamii tokko malee teessoo qoratichaa armaan gadiitiin qoraticha argachuu dandeessu.

E-mail:- aberazer@gmail.com
Bilbila:- 0911076682/0920350302

Irra Deebi'uun Galatoomaa!

Kutaa 1ffaa:- Haala Waliigalaa

1. Saala: 1. Dhiira ☐ 2. Dhalaa ☐

2. Umurii: 1. 21-30 ☐ 2.31-40 ☐ 3.41-50 ☐ 4.50 ol ☐

3. Sadarkaa Barnootaa: 1. Hanga Dippiloomaatti ☐ 2. Digirii 1ffaa ☐ 3. Digirii 2ffaa ☐ 4. Digrii 2ffaatii ol ☐

4. Muuxannoo Hojii: 1. Hanga waggaa 5'tti ☐ 2. Waggaa 6-10 ☐ 3. Waggaa 11-15 ☐ 4. Waggaa 16-20 ☐ 5. Waggaa 20 ol ☐

5. Sadarkaa Hojii amma irra jiran: 1. Hooggansa Olaanaa ☐ 2. Hooggansa Muummee ☐ 3. Hojjetaa ☐

Kutaa 2ffaa: - Ga'umsa Dhaabbatichaa irratti Dhiibbaa Bulchiinsa Qabeenyaa

Gaafannoowwan armaan gadii kun raawwii adeemsa bulchiinsa qabeenyaa isaa dhaabbatichi haala kamiin yoo gaggeesse kaayyoo dandeettii raawwachuu karoorfate bira ga'uu akka danda'u kan mul'isan dha. Kaayyoo olaanaan gaafannoo kanaa dhiibbaawwan bulchiinsi bittaa meeshaalee, bulchiinsi to'annoo fi hordoffii qabeenyaa fi bulchiinsi kuusaa qabeenyaa uumuu danda'an adda baasuu akkasumas bu'a-qabeessummaa waldeeggaranii fi walta'anii hojjechuu muummeewwan gidduu jiru adda baasuu dha. Filannoowwan armaan gadiitti kennaman "Gonkuma Walii Hin Galu" hanga "Sirriittin Waliigala" kan jedhan keessaa sadarkaa kamiin waliigaltuu? Tokkoo tokkoo sadarkaa waliigaltee keessanii mallattoo "X"tiin agarsiisaa.

1. Gonkuma Walii Hin Galu 2. Walii Hin Galu 3. Giddu-galeessa
4. Nan Walii Gala 5. Sirriittin Waliigala

L	Gosa Gaafannoo					
A	**Bu'a-Qabeessummaa Dhabbatichaa**	**1**	**2**	**3**	**4**	**5**
1	Gochaawwan adeemsa bulchiinsa qabeenyaa ga'umsa raawwwachuu dhabbatichaa irratti dhiibbaa gadi-aanaa qaba,					
2	Ga'umsi adeemsa bulchiinsa bittaa qabeenyaa dhabbatichaa ga'umsaa raawwii dhabbatichaa sadarkaa olaanaadhaan akka itti fufu taasisa.					
3	Bu'a-qabeessummaan bulchiiinsa to'annoo qabeenyaa gahumsa raawwii dhaabbatichaa irratti dhiibbaa olaanaa ni geessisa.					
4	Hojii irra olmaan bulchiinsa kuusaa qabeenyaa bu'a-qabeessa ta'e oomishtummaa dhaabbatichaa daraan ni dabala.					
5	Haala gaariin walgargaaranii fi walta'umsaanii hojjechuun					

	muummeewwanii dandeettii raawwachuu dhabbatichaa irratti miidhaa olaanaa ni qaqqabsiisa					
B	**Bulchiinsa Bittaa Meeshaalee**	**1**	**2**	**3**	**4**	**5**
6	Yeroo baay'ee gochaan adeemsa bulchiinsa bittaa meeshaalee dhabbatichaa haala waliigalaa bu'aa maddisiisuu isaa irratti dhiibbaa ni fida.					
7	Adeemsi bittaa meeshaalee ga'umsaa fi bu'a-qabeessummaa dhaabbatichaa irratti dhiibbaa olaanaa ni qaqqabsiisa.					
8	Adeemsi bittaa meeshaalee dhaabbatichaa hojjettoota leenji'an, dandeettii fi ga'umsa qabaniin hoogganama.					
9	Bulchiinsi bittaa meeshaalee ga'umsa qabu oomishtummaa warshichaa ni dabala.					
10	Kutaan bulchiinsa bittaa meeshaalee baay'inaa fi qulqullina meeshaalee bituuf karoorfamanii fi bitaman giddutti to'annoo fi madaallii ni raawwata					
C	**Bulchiinsa To'annoo Meeshaalee**	**1**	**2**	**3**	**4**	**5**
11	Gochaaleen bulchiinsa to'annoo meeshaalee warshichi kaayyoo karoorfate galmaan akka ga'u ni dandeessisa.					
12	Meeshaalee kuusaa keessa jiranii fi jiraachuu malan(qaban) beekuun guddina warshiichaa ni dabala.					
13	Dhaabbatichi caasaa bulchiinsa to'annoo meeshaalee waliigalaa kompiitaraan deeggarame qaba.					
14	Warshichi meeshaalee gatii (bu'aa) guddaa (olaanaa) qabaniif xiyyeeffannoo addaa ni kenna.					
15	Guddinni dhaabbatichaa bu'uura sadarkaa meeshaalee kuusaa keessaa qabuutiin madaalama.					
D	**Bulchiinsa Kuusaa Meeshaalee**	**1**	**2**	**3**	**4**	**5**
16	Bulchiinsi kuusaa meeshaalee warshichaa galma-ga'umsa kaayyoolee dhaabbatichaa keessatti ga'ee murteessaa qaba.					
17	Meeshaalee kuusaa keessaa sirriitti qabachuufii fi to'achuuf warshiichi bulchiinsa kuusaa meeshaaleetiif xiyyeeffannoo					

	addaa kenna.					
18	Bulchiinsi kuusaa meeshaalee itti fufiinsa oomishaa fi oomishtummaa dhaabbatichaa ni mirkaneessa					
19	Yeroo hedduu kuusaa meeshaa dhaabbatichaa keessatti meeshaaleen hundi iddoo sirriitti tarreeffamanii kaa'amu.					
20	Miidhamuu meeshaalee waliigalaa mana kuusaa keesssatti xiqqeessuudhaan milkaa'aa dha.					
E	**Walta'umsaan Hojjechuu Kutaalee**	**1**	**2**	**3**	**4**	**5**
21	Walta'anii fi walgargaaranii hojjechuun kutaalee dhaabbatichaa hunda gidduu jiru bu'a-qabeessummaa warshichaaf ga'ee ijoo taphata.					
22	Kaayyoo dhaabbatichaa galmaan ga'uuf kutaaleen warshichaa hundi dalagaa isaanii walta'insaan hojjetu.					
23	Bulchiinsi olaanaa dhaabbatichaa kutaaleen warshichaa hundi walta'insaan akka hojjetan xiyyeeffannoo addaa kenna.					
24	Kutaalee warshichaa hunda gidduutti haalli itti fayyadama walitti dhufeenya ifaa fi banaa ta'e jira.					
25	Bulchiinsi human namaa dhabbatichaa kutaaleen warshichaa hundi walta'insa gaariin akka hojjetan haala ni mijeessa.					

Kutaa 3ffaa:- Gaaffilee Armaan Gadiitiif Deebii Gabaabaa fi Ifa ta'e Kennaa

26. Adeemsa bulchiinsa meeshaalee warshaa keessanii yeroo ammaa kanatti rakkooleen waliigalaan mudatan maal fa'i?_____
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27. Adeemsa bulchiinsa meeshaalee dhaabbata keessanii irratti yaada dabalataa fi ijaaraa ta'an yoo qabaattan mamii tokko malee akka ibsitan kabajaan ni gaafadha_____
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