

**COVER PAGE**

**IMPACT OF MATERIAL MANAGEMENT IN ACHIEVING PRODUCTION  
EFFICIENCY IN NORTHERN CABLE PROCESSING AND MANUFACTURING  
COMPANY (NOCACO), KADUNA**

**BY**

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**DEPARTMENT OF BUSINESS ADMINISTRATION  
COLLEGE OF BUSINESS AND MANAGEMENT STUDIES  
KADUNA POLYTECHNIC**

**JUNE, 2022**

**TITLE PAGE**

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**BEING A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT  
OF BUSINESS ADMINISTRATION, COLLEGE OF BUSINESS AND  
MANAGEMENT STUDIES**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE  
AWARD OF HIGHER NATIONAL DIPLOMA (HND) IN BUSINESS  
ADMINISTRATION AND MANAGEMENT**

**KADUNA POLYTECHNIC**

**JUNE, 2022**

## DECLARATION

I hereby declare that this project was written by me under the guidance and supervision of **Mrs. Aishatu A. Abdulhamid** of the Department of Business Administration. I have neither copied someone's work nor has someone else done it for me. All references made to published literature have been duly acknowledged.

**Victor Gabriel**  
KPT/CBMS/19/52097

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Signature/Date

## APPROVAL

This is to certify that this project titled “**Impact of Material Management in Achieving Production Efficiency in Northern Cable Processing and Manufacturing Company (NOCACO), Kaduna**” written by **Victor Gabriel, KPT/CBMS/19/52097**, has been read and approved as having met the requirement governing the preparation and presentation of project in Kaduna Polytechnic. It is hereby approved for its contribution to knowledge and literary presentation.

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## **DEDICATION**

This research project is dedicated to Almighty God.

## **ACKNOWLEDGEMENT**

My thanks and gratitude first of all goes to Almighty God for giving me the ability and strength to complete this programme successfully.

I am indeed grateful to my able supervisor, Mrs. Aishatu A. Abdulhamid for taking her time in going through the manuscripts and making appropriate corrections where necessary. May Almighty God bless you and your family abundantly (Amen).

My immense gratitude goes to Head of Department, Mr. Tunde Lawal, the coordinator, Dr. Ismaeel Anchau, and the entire lecturers in the Department of Business Administration for their intellectual supports in conducting this research work.

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May Almighty God bless you all (Amen).

## ABSTRACT

*This study examined the impact of material management in achieving production efficiency in Northern Cable Processing and Manufacturing Company (NOCACO), Kaduna. Specifically, the study aimed to identify the importance of material management in achieving production efficiency; find out the impact of material management on productivity; and identify the challenges of materials management in NOCACO Limited, Kaduna. A sample of 35 was drawn from a population of 350 using Roscoe 10% rule of thumb. Three (3) research questions were raised to guide the study while a set of questionnaire was used to obtain data from the respondents. A frequency distribution table and simple mean score method was used to analyse the data obtained. Findings from the research revealed that material management is importance in achieving production efficiency in NOCACO Limited, Kaduna. The study further revealed that material management has significant impact on productivity of NOCACO Limited, Kaduna. The study concluded that challenges of materials management includes lack of good maintenance strategies, lack of measure compliance monthly with all programs to ensure cost savings and process improvements are obtained, lack of understanding material management, lack of commitment by top management to material management, etc. Based on the findings of the study, it was strongly recommended that the management should ensure the necessary materials are supplied to user's department at the right time, the right operation and quantity so as to effect efficient operations.*

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

In the current exceedingly aggressive commercial environment, the weight on firms to discover better approaches to convey value to their clients is becoming ever challenging. The expanding requirement for industry to offer items in a worldwide market based on cost and quality has generated the need to implement more productive warehousing approach. Material management has come to be perceived as an unmistakable crucial with the operation of large-scale manufacturing firms. Material management comes before processing of completed products held for distribution to customers (Coyle, Bardi, & Langely 2014). Material management appears to be essential hubs in a supply chain network because it perform an important functions that help in the development of materials, management items, dismissing vehicle loads, making stock keeping unit combinations and gathering materials for shipments purposes (Langevin & Riopel, 2015).

Material management is an approach for planning, organizing and controlling all those activities principally concerned with the flow of materials into an organization. Every organization invests a considerable amount of capital on materials. In many cases, the cost of materials exceeds fifty percent of the total cost of goods produced. Such a large investment requires considerable planning and control so as to minimize wastage which invariably affects the performance and profitability of organizations. Materials are the lifeblood and heart of any manufacturing system, such materials may include inventories. No industry 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 shaky if materials are under stocked, overstocked or in any way poorly managed (Banjoko, 2016).

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 (Ondiek, 2017). Thus, Materials Requirements Planning (MRP), purchasing, procurement of materials, inventory management, storage, materials supply, transportation and materials handling are the activities of materials management (Monday, 2014).

Materials Management came to limelight at the advent of liberalization and globalization which posed intense competition on the business environment. Before that time, the concept was treated as a Cost Centre since Purchasing Department was spending money on materials while Store was holding huge inventory of materials, blocking money and space (Ramakrishna, 2015). With the process of liberalization, there has been a drastic change in the market which has forced manufacturing companies to devise strategies to minimize production costs in order to remain competitive. Since then, materials management has been recognized as a source of opportunities to reduce production costs and can be treated as a profit centre. Today, there are dramatic evolutions in the market environment and every organization must strive to keep itself in business.

## 1.2 **Statement of the Problem**

In recent years, NOCACO, Kaduna has suffered from inefficient and imprudent management of resources and product scarcity, which has resulted in invaluable economic and social losses to the organization (Adeloye, 2015). On the surface, this scarcity has been attributed to shut downs and breakdown at the NOCACO due largely to a lack of smooth maintenance activities in the plant, which is brought about by the unavailability of replacement of materials, which should have been provided by the materials management department. Instability is the major problem to tackle in the Nigeria economy. The reason why we said instability is that, it fluctuate the prices of the products thereby shifting customer taste between NOCACO's product and other products in the market (Adeloye, 2015).

More often than this material management functions are handled by many individual without acquiring the necessary skills, giving the impression that even accountants administrators, engineers and lawyers etc have the knowledge to perform the material management function. This is wrong as they do not have at their disposal all the knowledge and expertise they acquired to fulfill their duties effectively. There is also ignorance on the part of most top management of the maximum benefit that will be derived from applying the concept into an organization to maximize the company profit. Improper planning is another area of problem which entails effective and efficient requisition handling instruction of the finished products (Adeyemi & Daniel, 2014).

Several studies have been conducted on this topic. According to Adafin (2017), the present state of the electricity industry in Nigeria reflects various problems ranging from

delays in project execution/delivery, substandard work, disputes, to cost and time overrun as a result of material shortage and wastages on production, theft and displacement of materials on sites, as well as poor accounting and security system of the concerned sites/firms. According to Dahiru (2015), lack of materials not only causes delays, but a consequent decrease in productivity and resulting to cost overruns. This is no doubt lack of effective material management is one of the major cause of this problem. Failure of the manager to make available materials need could lead to delay. Non-compliance strictly with material requirement planning of quantities, schedule of materials, specifications and breweries programme in material stock control practice is another contributing factor which tends gradually to decrease profitability of a company also often leads to extension of time respectively, and hence no proper material stock control practice (Inyang Udoh, 2016).

Dey (2015) noted that the rate at which materials are being wasted due to improper management is becoming unbearable to the company due to its effect on their profit margin and proper usage of material to achieve quality job been done through various techniques. Material management practices are critical to an organizations success in today's competitive and dynamic market, (Dimitrios 2018). According to Amoro (2017), most manufacturing firms face problems of stock outs, over supply, over stocking, stock obsolescence, poor forecasting, stock pilferage, poor responsiveness to customer needs and lack of proper material management equipment, methods and practices results into poor productivity.

Edwin (2015) conducted a research on the effect of material management on profitability of cement manufacturing companies. The findings showed that proper streamlined material management systems had a positive impact on the profitability in the company. Wilfred (2014) carried out a study on the effect of the effective system of material management techniques on organization performance in the Seven-Up Bottling Company in Nigeria where he came up with the conclusion that organizations benefits from material control management by way of easy storage and retrieval of material, improved sales effectiveness, and reduced operational cost. Therefore, this study was undertaken to fill the knowledge gap by assessing the impact of material management in achieving production efficiency in NOCACO Limited, Kaduna.

### 1.3 **Objectives of the Study**

The specific objectives of the study are:

1. To identify the importance of material management in achieving production efficiency in NOCACO Limited, Kaduna.
2. To find out the impact of material management on productivity in NOCACO Limited, Kaduna.
3. To identify the challenges of materials management in NOCACO Limited, Kaduna.

### 1.4 **Research Questions**

In order to achieve the aforementioned objectives, the following questions were raised:

1. What are the importance of material management in achieving production efficiency in NOCACO Limited, Kaduna?

2. What are the impact of material management on productivity in NOCACO Limited, Kaduna?
3. What are the challenges of materials management in NOCACO Limited, Kaduna?

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

This study is intended to examine the impact of material management in achieving production efficiency in an organization. The findings of this study will help the management of NOCACO, Kaduna to know the challenges of material management and possible strategies to be adopted in overcoming such problems.

Other organizations in the same industry will find the study useful as it will enlighten materials managers on best ways to manage the organization resources.

Following the completion of this work and the result made available to the management, the processors will be in a position to re-examine their proper inventory management techniques and upstate them so as to enjoy these benefits accruable to firm, with proper inventory management, and also avoid plunging their business into financial and operating difficulties.

The study will also serves as a source of information for other researcher whom may like to further study on the subject matter.

Finally, the study is a major requirement for the award of Higher National Diploma in Business Administration and Management.

### 1.6 **Scope of the Study**

The study is on the impact of material management in achieving production efficiency with special reference to NOCACO Limited, Kaduna. The study covered the period of 2017 – 2021.

## 1.7 **Limitations of the Study**

In the course of this research, the researcher was face with a lot of difficulties which include the following:

- i. **Lack of Finance:** Finance is one of the factors that hindered the researcher in course of this work. The cost of transportation and cost of typing are seriously beyond expectation.
- ii. **Time:** Time no matter how it is, is not enough for this research. The reason is that the researcher has to combine the class work, assignment, and personal activities. Likewise, the time frame for the submission of the project is too short.
- iii. **Inadequate Information:** The researcher found it difficult to get materials needed for the research, there were no adequate text books in the library for the researcher to make references to.
- iv. **Lack of Cooperation of the Respondents:** This is another major constraint of any research work, The researcher cannot get adequate information from the staff, since they are afraid of given out vital information regarding the organization.

## 1.8 **Definition of Terms**

**Commodity Records:** This is kept for each major material and services that is used or purchase in the organization. This contains a complete description of material or services, their sources of supplies and how they can be obtained.

**Cost:** Something that one loses; give away, damage in order t achieve something.

**Expediting:** This is follow up in order to ensure prompt delivery.

**Inspection:** A careful examination of something to find out more about it.



**Lead Time:** This is the period taken to obtain materials from the date of ordering to the date of delivery which the buyer must reasonably allow the vendor to prepare goods for shipment.

**Material:** Components parts used for the production of a product.

**Material management:** Is an approach for planning, organizing and controlling all those activities principally concerned with the flow of materials into an organization

**Monitoring:** To carefully watch and check a situation in order to see how it progress over a period of time.

**Product:** Something useful that is made in a factory.

**Purchasing Records:** This contains detailed information in respect of purchasing of various materials.

**Quality control:** This is the process whereby goods and services are examined to ensure that they conform to predetermined standards.

**Quality:** The degree to which something is good or bad. Constraining of event to follow plans

**Reliability:** Something that can be trusted or depended on.

**Sourcing:** This is the process whereby the buyers evaluate suppliers on the process of goods.

**Specification:** A detailed instruction about how something should be design or make

**Standard:** A level of quality, skill, ability or achievement by which something is judge as acceptance.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter deals with reviewed of the literatures pertinent to the study. The related literature will be reviewed under the following sub-heading; Conceptual framework which comprises of definition of materials management, objectives and benefits of materials management, materials control, purchasing (procurement), relationship between materials management department and other departments, and achieving higher productivity through effective material management. The chapter further discusses the theoretical framework adopted and review of related literature.

#### **2.2 Conceptual Framework**

##### **2.2.1 Definition of Materials Management**

Materials are simply industrial goods that become part of another physical product. They represent the major component of business cost and profitability According to Ramakrishna (2015), on an average, half the sales income in an organization is spent on materials. This implies that to boost a firm's profit, there is the need to reduce materials cost which leads to a reduction in manufacturing cost. In the cost structure of most of the products manufactured, materials constitute 50% of the total cost, pointing to the need for the proper budgeting and control on cost of materials which is a core objective of Materials Management.

The various types of materials to be managed in any organization include purchased materials, work-in-process (WIP) materials and finished goods (Banjoko, 2016). Ogbadu

(2017) identified basic price, purchasing costs, inventory carrying cost, transportation cost, materials handling cost, office cost, packing cost, marketing cost, obsolescence and wastages as the various costs involved in these materials. Thus, the management of these materials so as to reduce the costs associated is what we refer to as Materials Management. An integrated approach to Materials Management defines it 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 predetermined service to the customer at a minimum cost” (Gopalakrishnan & Sundaresan, 2016).

International Federation of Purchasing and Materials Management (IFPMM) defined it as a total concept having its definite organization to plan and control all types of materials, its supply, and its flow from raw stage to finished stage so as to deliver the product to customer as per his requirements in time. These definitions provide the scope of Materials Management which includes decision on purchasing raw materials, staffing, inventories, stores and warehouse management, production levels, and distribution of finished goods at minimum cost at due time (Adejugbe, 2015).

Donald and Lammar (2014) described materials management as practical in business today “as a conference of traditional materials activities bound by a common idea - the idea of an integrated management approach to planning, acquisition conversion, flow and distribution of production materials from the raw materials to the finished product state”, they also said that materials management concept advocates the assignment of all major activities which contributed to material’s cost to a single materials management department. This includes the primary responsibilities which are generally found in the

purchasing department, plus other major procurement responsibilities, including inventory management, traffic, receiving warehousing, surplus and salvage and frequently production planning and control. Donald and Lammar (2014) went further to say that the specific form of materials management that is most appraised for one organization may not be best form for another organization. In practice, for most firms, the production planning and purchasing schedules overlaps significantly. Unfortunately, this frequently produces a continues source of conflict.

One of the paramount advantages of materials management is that it forces coordination between purchasing and production control. Purchasing and production control are both responsible for the on-time delivery of production materials. Division of this authority between two different operating units inevitably leads to conflict. When materials do not arrive on time production control is seldom satisfied to work through the purchasing department. Such conflict can be resolved much more easily when production control and purchasing report to a single boos — the materials managers (Donald & Lammar, 2014).

Donald and Lammar (2014) conclude that substantial benefits will accrued when inventory management value analysis, receiving stores and surplus and salvages placed in materials management. In view of the above, the researcher's view, the work and contributions of Donald and Lammar on what materials management because of how it is being implemented in various organizations today: Some elements are lacking in their concept of materials management.

Alijian (2016) defined materials management “as that aspect of industrial management which is concerned with all of the activities involved in the acquisition and use of all

materials employed in the production of finished goods. The activities may include production control, inventory control, purchasing, expedition, shipping scarp and surplus disposition and customer services. However, the term materials management is frequently used when only some of these functions are included. Alijian (2016) based his materials management concept on the theory that are more effective control over an important aspect of a company's operation can be obtained by group together all departments involved in any way with the materials used by the company. Under the concept all of the aforementioned departments are included, these are departments, which handle different aspect of the same basic problems namely, the efficient and economical planning, scheduling and handling of the materials used in the manufacturing process. Alijian (2016) also confirmed that the use of computer and electronic data processing equipment has enhanced and facilitated adoption of the materials management concept. Materials management organization can be set optimum purchasing and inventory policies for any number of items and plant location. In addition, computer oriented techniques can analysis, schedule, report and forecast information about materials in manner and time that when henceforth possible or impractical to perform.

To this end, the researcher is of the opinion that, Aljian's idea of materials management is alright, but only that he never gives a clear cut definition of what materials management should be with regard to the activities of distribution. Activities involved in the acquisition and use of all materials employed in the production of finished product. In Alijian (2016) research, he highlighted that the adopters of the materials management approach recognized different shortcomings, which prompted then to re-organize the materials management concepts.

Alijian (2016) concludes that applying the materials management concept overcomes many of these difficulties:

- a. The variable involved in the sub-functions are additive in nature.
- b. They require a common direction of management, which provides concise and integrated delegations of authority.
- c. The importance of the management principles of accountability by making a single manager responsible for all aspect of materials decision.

The researcher of this subject matter viewed the work and contribution of Alijian as great benefits to any organization who wish to employ the concept. He concluded that applying materials management overcomes many of the difficulties in organization already discussed.

### **2.2.2 Objectives and Benefits of Materials Management**

Materials Management is a tool to optimize performance in meeting customer service requirements at the same time adding to profitability by minimizing costs and making the best use of available resources. The basic objective of Materials Management as explained by Banjoko (2016) is to ensure that the right item is bought and made available to the manufacturing operations at the right time, at the right place and at the lowest possible cost. They stressed that without adequate planning for materials resources, the overall performance of an organization may be crippled.

Baker (2018) articulated that improvement in continuity of supplies with reduced lead times, reduction in inventories with reduced obsolescence and surplus, improvement in cooperation and communications with reduced duplication of effort, reduction in material

costs, improvement in quality control, improvement in status control, and quicker identification of problems are the main benefits of Materials Management in organizations.

According to Ogbadu (2017), apart from these general objectives, the following under listed points also constitute some of the objectives of materials management:

1. To support the company operations with a uninterrupted flow of materials and services. This can be achieved through detailed planning of the supply of materials, parts and components so that they are brought together at the right time and in the right work location.
2. To keep inventory investment losses (due to deterioration, obsolescence and theft) under control. Also making the most economical use of plant and equipment by smoothing out production processes and scheduling to the best of utilization (Ogbadu, 2017).
3. To buy wisely and competitively which include two distinct considerations: keeping abreast the forces of supply and elements that regulate prices and availability of materials; and a constant search for better values that yield the best combination of competitive buying and wise buying that contributes most to maximizing a company's profit.
4. To reduce transportation cost of moving materials by making decisions on route to follow, the means of transportation and the vehicle to use.
5. To provide information service for controlling the distribution of products, production management, instruction, manufacturing, routes and other background production information.

6. To have better control of quality of company's product and to provide required level of customer services. This can be done by maintaining favorable relationship with suppliers' consistency of quality (Ogbadu, 2017).

### 2.2.3 Materials Control

According to Ayoade (2016), materials control is a section which is responsible for ensuring the right quantity and quality- of materials available when and where required. At the same time capital must not be tied up unduly, nor there be an undue loss from deterioration and obsolescence.

Ayoade (2016) also says that a good system of materials control required;

- i. Centralization of purchasing under a buyer
- ii. Department co-ordination and purchasing inspection, receiving, storing and issuing of materials.
- iii. Simplifying and standardizing whenever possible.
- iv. Planning and scheduling materials requirements and preferably control by budgets
- v. Stock taking procedure to be efficient

Jones (2015) a renowned author on the subject matter described materials control as “a system that ensures the provision of the required quality as at required time with the minimum amount of capital tied up. Also, that materials control cover the function of stock controls scheduling materials requirement, purchasing, receiving and inspection, storing and issuing. Jones (2015) went further to say that in any manufacturing organization, be it large or small materials must be controlled efficiently. In view of this, he highlighted on the following:



- i. That if any company' wants to survive and be profit oriented, there must be proper system for the control of materials from the time an order is placed with a supplier, until the material is used for production.
- ii. That materials represent an important asset and is the largest single item of costs in almost every business therefore, the success or failure of any company may depend largely on efficiently control of materials purchased.
- iii. Where materials are not systematically controlled, excess stock for some materials are likely to occur with a consequent unnecessary tied up of capital and loss through obsolescence and deterioration.
- iv. Efficient materials control cuts losses and forms of waste that otherwise tend .to pass un-noticed. Thus, incoming materials should be checked against orders to ensure that the correct quantity have been received (Jones, 2015).

Jones (2015) concludes by saying, to achieve the above points the following methods must be adopted for controlling materials:

- i. There should be co-ordination between the department involved in buying, receiving, inspection and storage of materials.
- ii. There should be centralization of materials under the authority of competent buyer.
- iii. Here should be proper classification and where applicable coding of materials
- iv. There should be the use of standard form of orders of requisitions, returns to store and so on, upon which written and signed instruction is given.
- v. There should be an efficient stock control procedures and of records.

Abiodun (2014) asserted materials control as “the system that ensure the provision of the required quality of materials or required quality, at the reasonable prices, at the required placed, at the right time, with the minimum of capital tied up”. He concluded that materials control covers the following functions:

- i. Purchasing, receiving storage and issues
- ii. Stock control
- iii. Materials production, planning and control

From the above points, the researcher view that for any manufacturing organization to be efficient there must be proper planning and control of their materials right from the time of issuing order of raw materials to the finished product stage without tied up capital unnecessary.

#### **2.2.4 Purchasing (Procurement)**

Alijian (2016) noted purchasing “as the term used in industry and management to denote the act of the functional responsibility for purchasing materials, supplied and services” he went further to say in a narrow sense, the term purchasing simply describe the process of buying, however, in a broader sense the term involves determining the needs selecting the suppliers arriving at proper delivery, in simple terms, the proper equipment, materials suppliers and service in the right quality, in the right quantity, at the right price and form the right sources.

Bailey and Farmer (2014) in their book, defines procurement objectives as an act “to purchase the right quality, at the right time in the right quantity from the right source at the right price. A good objective, should be measurable in some way but is to say, for

instance, what price is right? For present purpose, remembering the need to work as an effective function in the management team.

Bailey and Farmer (2014) suggested the statement of the following objectives:

- i. To supply the organization with a steady flow of materials and services to meet needs and also to ensure continuity of supply by maintaining effective relationship with existing sources of supply either as alternatives or to meet emerging or planed needs.
- ii. To buy effectively and wisely obtaining by and ethical means the best value for every money spent.
- iii. To maintain sound cooperative relationship with other departments providing information and advice as necessary to ensure the effective operation of organization as a whole.

Evans (2017) in his own contribution see purchasing as the process of buying goods and services of the right quantity at the right price, at the right time from the right suppliers or sources to be delivered when and where needed. For this reason many people see purchasing in terms of the rights (5 rights). He further explain that purchasing is a continuous process that is responsible for the anticipation, identification and provision of goods and services that are required by an organization with the objectives of helping it increase its profitability or services provided.

From the foregoing discussion, it can be noted that there are different of emphasis between the three definitions although there are all concerned with the purchasing of goods and services. In that regards, the researcher view purchasing as a process of buying

goods and services of right quality and quantity in the right time at the right price from the right sources to be delivered when and where needed for the purpose of increasing the profit of the business concern and to achieve the corporate objectives of the organization.

### 2.2.5 Relationship between Materials Management Department and Other Departments

Materials Management Department plays a vital role in an organization and it has relationship with other departments. These relationships vary from department to department (Lemu, 2014). The departments that are mostly involved are: Production, engineering design, quality control, marketing, finance and personnel department:

1. **Materials Management and Production Department:** Materials Management is responsible for the purchase of all materials needed by the production department, and the storage and issuance of these materials. Production department makes requisition to materials management department of the materials needed. Materials management department raises a local purchase order for such materials.
2. **Materials Management and Engineering Design Department:** In order to achieve the major objective of the organization, these two departments should cooperate on matter concerning production design, preparation of specification for the materials, parts and components. They should equally cooperate in the area of value analysis/engineering and standardization of materials. Materials management may make useful suggestions of substitute materials that may cost less to the engineering department at the production design stage (Lemu, 2014).
3. **Materials Management and Quality Control Department:** In assurance of product quality, it is very important that the two departments cooperate and relay

useful information to each other. Quality control department usually inform materials management on the best method to be applied to incoming materials and also the criteria for acceptance and rejection of materials that are substandard. Quality control can equally advise materials management on condition under which some items should be stored to avoid deterioration in quality.

4. **Materials Management and Marketing Department:** Materials management and marketing department should cooperate in ensuring the profitability of the organization. Materials management ability to obtain the right quality materials at the lowest possible cost, will enable marketing maintain competitive advantage. Consequently there will be increased sales and profit. Marketing department is in position to report back to the materials management department on the customers' reaction to the quality of the product (Lemu, 2014).
5. **Materials Management and Finance Department:** Usually, finance department release find to materials management (if there is no purchasing department or the purchasing unit is under materials management department) department for purchase of raw materials. Alternatively, payments are made directly to suppliers by the finance department they have been cleared by materials management department. It is the responsibility of the finance department to audit all the necessary documents for purchase made to avoid fraud before payment is made.
6. **Material Management and Personnel Department:** Both departments cooperate on matters relating to recruitment, training, motivation, promotion and development of staff in the materials management department. Personnel department advises materials management department on the company's

personnel policies, wages and fringe benefits, On the other hand, materials management is responsible for the procurement of stationery and office needs of the personnel department (Lemu, 2014).

#### **2.2.6 Achieving Higher Productivity through Effective Material Management**

Effective management of materials contributes a great deal to achieving higher productivity. This is done through effecting acquisition, control, handling and movement of materials (Lemu, 2014). The decision to make or buy a manufacturing company should be able to make prudent decision between buying raw materials and producing them. If this decision is done very well, it can contribute to cost reduction and profitability will increase. According to Ogbadu (2017), many factors have to be considered when arriving at make or buy decision. Factors in favour of buying raw materials include:

- a. When it is cheaper to do so.
- b. Quantities required are too small for economic production.
- c. Spread of financial risk between customers and suppliers.
- d. When source of supply can no longer be guaranteed.

On the other hand, Chukwuedo and Ifere (2017) stated that the decision to produce raw materials can increase profitability when carried out under these circumstances:

- a. Chance to use up idle capacity and resources.
- b. Possibility of scrap utilization.
- c. Greater purchasing power with large orders of a particular material.
- d. Ability to manage resources (Chukwuedo & Ifere, 2017).

## **Materials Acquisition**

According to Stukhart (2017), economic buying is the arm of any firm but the cheapest materials may not necessary be qualitative. Therefore, a material manager will strive for the cheapest and qualitative raw material. Materials acquisition function starts with the receipt of the purchase requisition from the store. The purchase order is therefore prepared based on the contents of the requisition. The most important thing to bear in mind while planning for profit is to procure the right quality at the right price. Procurement in highly technical areas required skill and experience on the part of the buying manager. Cost improvement is simply the result of learning effect among workers, reflecting the development of skill and dexterity that occurs when a task is performed repeatedly.

According to Ayoade (2016), acquisition circle consists of recognizing defining and describing the need; transmitting the need, investigating and selecting the supplier, order, receipt and inspection of good supplied, auditing the invoicing and closing the order. Consequently, cost of raw materials can be reduced by buying from the right suppliers at the right price without compromising quality.

## **Receipt of Materials**

One important aspect of receipt of materials is to check the good supplied and to ensure they conform to specification as contained in the purchasing order. Damaged and sub-standard materials are rejected thereby preventing the firm from incurring unnecessary cost and thus promoting profitability. The effect of inferior materials to both the machine and the profitability of the firm must be borne in mind as they cause production held up which may result into substantial losses to the firm (Ondiek, 2017).

## **Material Storage**

Material storage involves a careful handling of the stock and maintaining of an accurate control over them. Handling of material is one of the activities perform by materials management and can be an effective tool for saving cost and holding up profit. Storage of materials depends on the nature and how they are used in the manufacturing process (Wholey, 2016). Coal and iron ore are usually stored on ground liquids. Such as chemicals, paints and oils are kept in tanks. Profits can be achieve if managers effectively manage issues relating to stores location, layout and equipment inspection, protection of stores, issues to production, stock records and disposal of obsolete (Ondiek, 2017). Storage goes hand in hand with store recording. Good record keeping can detect theft and pilfering early enough. It shows how much materials are in the store and when to place order. The issue of materials from store to production department must be properly authorized and recorded.

## **Inventory Control**

Lysons (2016) posits that inventory control enhances profitability by reducing costs associated with storage and handling of materials. Inventory control is means by which materials of the right quality and quantity are made available as when required with due regards to the economy of shortages, ordering cost, purchase price and working capital. Inventory control determines the extent of stock holding of materials. It equally makes it possible for material manager to carryout accurate and efficient operation of the manufacturing organization through decoupling of individual segment of the total operation and it entails the process of assessing of stock into the store house and the issue of stock (Nwosu, 2014).



Materials control has to do with standard control on the ordering size, ordering time, and the quantities of raw materials left in the store at a given time. To optimize production and cost reduction, manager must therefore, maintain an optimum level of stock at all time. Too much stock and too little stock must be avoided. According to Buffa and Salin (2014) there are several reasons for keeping inventory. These include protection against variations in demand, maintaining smooth flow of production by providing a decoupling function between stages of production and lowering total material cost by taking advantage of quantity discounts.

### 2.3 **Empirical Studies**

Previous studies have convergent opinions on the relationship between the materials management and organizational output. For example, Cyprian and Makori (2017) examined the effect of material management on the performance of Mumias Sugar Company Limited in Kenya. Stratified random sampling was used to select 79 respondents from the Company. The sample of 79 was equivalent to 10% of the target population which is regarded as statistically significant in a descriptive study with a finite universe. The study utilized a research questionnaire. Data were analyzed with the aid of the Statistical Package for Social Sciences (SPSS) to generate the required frequencies and percentages to answer the research questions. Results reveal that materials procurement and inventory control positively influenced the performance of sugar manufacturing industries in Kenya.

Wanjogu, Iravo, and Arani (2015) determined factors affecting materials management in manufacturing firms in Nairobi, Kenya. The descriptive research design was adopted for

the study to determine factors affecting materials management. A sample size of 46 respondents was selected from a list of 455 manufacturing firms. Data were collected via a structured questionnaire and analysis was performed with the aid of tables, charts and linear regression. Results show that good inventory control is important in materials management because it reduces stock levels and hence increases profitability. Also, ICT helps firms in planning, controlling and processing of materials.

More so, Atieno and Wanyoike (2015) conducted an assessment of the effect of logistics management practices on operational efficiency at Mumias Sugar Company Limited, Kenya. Purposive and convenience sampling methods were used to select 92 respondents as the sample size for the study. Data were analyzed via mean, standard deviation, correlation and regression analysis. Result reveals that effective management of information flow improves the company's internal and external processes.

Ibegbulem and Okorie (2015) also conducted an assessment of materials management and profitability of an organization. The study revealed that material management used by the organization contributes to the profitability of the company, adequate storage facilities prevents interruption on production process among other things.

JerutoKeitany, Wanyoike and Salome (2014) assessed the role of materials management on organizational performance in Kenya. A sample of 49 respondents was selected from this population using the stratified random sampling technique. Data were collected through a structured questionnaire, consisting mainly of closed-ended and open-ended questions. The data were analyzed through descriptive statistics such as mean, standard

deviation, median and percentages. Results indicate that there was a significant increase in organizational performance as a result of effective materials management.

Nwosu (2014) also examined the impact of materials management on the profitability of Nigeria brewing firms. The population of this study is 4648 being the total staff strength of Nigeria Breweries and Guinness Nigeria PLCs, and a sample size of 368 was selected. Data were collected through a structured questionnaire and oral interviews, while data analysis was performed with the aid of simple percentages and Z- statistics. Result demonstrates that materials procurement, materials storage, materials inventory and interdepartmental collaboration have a significant effect on the profitability of brewing firms.

Ondiek and Odera (2018) did an assessment of materials management in Kenyan manufacturing firms. The study surveyed medium and large manufacturing firms based in Nairobi, Kenya. A stratified random sampling technique was used to select 55 firms while the data was collected using a structured questionnaire consisting mainly of both close-ended and open-ended questions. Data were analyzed through proportions, percentages, median and mean. Results show that Kenyan firms were not practicing professionalism in materials management and owing to the huge amount of resources they were committing on materials related activities.

Furthermore, Asaolu, Agorzie and Unam (2018) also examined the effect of materials management on the profitability of Nigerian Food and Beverage (F & B) Manufacturing firms with specific reference to Nigerian Bottling Company Plc. Data were collected through a structured questionnaire and personal interview. Results show that there was a

significant increase in the company's profitability as a result of efficient management of materials.

## 2.4 **Theoretical Framework**

This study is anchored on Inventory Management Theory: The theory of inventory management was propounded by Nowicka-Skowron (2007). It emphasizes the role that management material of logistics chains plays in material management and forecasting. The theory posits that the chain of movement of material and information depends to a large extent on the availability of materials and the quality of information at the disposal of the chain operator. Material theory (or more formally the mathematical theory of inventory and production) is the sub-specialty within operations research and operations management that is concerned with the design of production/inventory systems to minimize costs: it studies the decisions faced by firms and the military in connection with manufacturing, warehousing, supply chains, spare part allocation and so on and provides the mathematical foundation for logistics. The inventory control problem is the problem faced by a firm that must decide how much to order in each time period to meet demand for its products. The problem can be modeled using mathematical techniques of optimal control dynamic programming and network optimization.

The purpose of inventory theory is to determine rules that material management can use to minimize the costs associated with maintaining material management and meeting customer demand. Inventory material management is studied in order to help companies save large amounts of money. Inventory material management models answer the questions: When should an order be placed for a product? How large should each order

be? The answers to these questions are collectively called material management. Companies save money by formulating mathematical models describing the inventory system and then proceeding to derive an optimal material management policy.

## 2.5 **Analysis of Gaps**

The gaps between the related studies reviewed (Asaolu, Agorzie and Unam, 2018; Ondiek and Odera, 2018; JerutoKeitany, Wanyoike and Salome, 2014; Nwosu, 2014; Atieno and Wanyoike, 2015; Ibegbulem and Okorie, 2015; Wanjogu, Iravo, and Arani, 2015; as well as Cyprian and Makori, 2017) has established the fact that an effective material management system is key to the success of organizations. However, the African construction industry suffers from many material management issues that lead to ineffectiveness in the material management system. Previous studies in the field have not comprehensively examined the issues affecting the schedule and cost performance of construction projects. To address this gap, this study identified a total of 8 empirical studies on material management issues from the existing literature. The results revealed that improper delivery of materials is the most critical material management factor, followed by inadequate planning of materials, lack of information and communication, financial issues in procurement, changes in scope of materials, and difficulty in transportation. The findings of this study enable practitioners to effectively focus on the few critical factors to improve the material management system and thereby enhancing projects' schedule.

## 2.6 **Summary of the Chapter**

This chapter discussed the conceptual framework of material management. As previously stated, the purpose of this research is to determine the impact of materials management in achieving production efficiency. The uniqueness of material management techniques, and how these impact forward operation bases of NOCACO were discussed. Thereafter, a review of previous studies on the subject was done. Therefore, it can be deduced that the goal of materials management is to provide an unbroken chain of components for production to manufacture goods on time for the customer base. The materials department is charged with releasing materials to a supply base, ensuring that the materials are delivered on time to the company using the correct carrier. Materials are generally measured by accomplishing on time delivery to the customer, on-time delivery from the supply base, attaining a freight, budget, inventory shrink management, and inventory accuracy.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter gives detailed description of the various research procedures adopted in the collection of data and the techniques used in presentation and analysis of data in the following order: Research design, area of the study, population of the study, sample size and sampling techniques, instrument for data collection, validity and reliability of the instrument, method of data collection, method of data presentation and analysis.

#### **3.2 Research Design**

Survey research method was used for the purpose of this study. This was considered more appropriate because survey design generally can be used to investigate problem in realistic setting, the survey research provides the researcher with a more accurate description of respondents' opinion. The survey research comprises of several variables and uses multi-variant statistics to analyze data.

#### **3.3 Area of the Study**

This study was conducted in Northern Cable Processing and Manufacturing Company (NOCACO) Ltd. located at No. 13 Maichibi Road Industrial Estate, Kakuri, Kaduna.

#### **3.4 Population of the Study**

According to Robert (2008), population is a collection of elements about which the researcher wishes to make inference. The target population for this study was three hundred and fifty (350), which comprised of management and staff of five (5) departments, namely: Distribution (165), Marketing (85), Administration (45), Accounts (34) and Computer (21).

### 3.5 Sample Size and Sampling Techniques

The researcher used random sampling techniques to get the require responses from the respondents which stand as a dependable result. The total respondents selected through random sampling were thirty five (35) using Roscoe 10% rule of thumb. This sample size fulfils the rule of thumb as proposed by Roscoe (1975), for which sample sizes larger than 30 and less than 500 are appropriate for most research.

### 3.6 Instrument for Data Collection

Primary and secondary methods of data collection were both used in this study. The secondary data was generated from published and unpublished text materials while primary data consists of a number of items in well-structured questionnaire that was administered to the respondents. The decision to structure the questionnaire is predicated on the need to reduce variability in the meanings possessed by the questions as a way of ensuring compatibility of responses. The questionnaire was developed by the researcher based on five points Likert scale of Strongly Agree, Agree, Undecided, Disagree, and Strongly Disagree. The 5 points Likert scale is shown thus:

	SA	A	UD	D	SD
Grade Point	5	4	3	2	1
Range	4.5-5.0	3.5-4.4	2.5-3.4	1.5-2.4	0.5-1.4

**Key:**

SA - Strongly Agree = 5

A - Agree = 4

UD – Undecided = 3

D - Disagree = 2

SD - Strongly Disagree = 1



### 3.7 **Validity and Reliability of the Instruments**

One important way of ensuring that the right instrument has been used and correct measurement taken is that the outcome must be in consonance with two major criteria for measuring quality known as validity and reliability (Osuala, 2009). Validation by experts as opined by Nwana (2013) is an effective method for content validation of research instrument.

To obtain the validity of an instrument, three experts were required to vet and cross-check the items generated in the questionnaire in order to ensure accuracy and clarity of the instrument. The facial validation was done by the supervisor of this project, Mrs. Aishat Abdulhamid as well as Mr. Tunde Lawal and Mr. Kayode Adejumo. Their modifications and corrections resulting from their observation and constructive criticisms were used in improving the final draft.

Reliability has to do with consistency obtained from the results of the application of the instruments. An instrument is reliable if it consistently gives the same or similar result. To obtain reliability for factual questions, Ogbu (2014) suggest that internal checks the form of logical test to the questionnaire should be conducted. In line with this, a number of questions were built into the questionnaire to give a clue on the respondents' consistency of response.

Besides, pilot study was conducted on 10 staff of the organization to pre-test the efficacy of the questionnaire. This was meant to test the appropriateness of the items in the questionnaire to elicit the needed responses. The choice of a small sample for pilot study is in agreement with the view held by Nworgu (2010) who opined that pilot testing is

usually done on a smaller scale than the main study but under similar conditions. And the 10 staff to be used in the pilot study was not participated in the actual study.

### 3.8 Method of Data Collection

The researcher personally collected all the data for the study from the staff of NOCACO. After distributing the questionnaire, respondents were given 5 days to fill the questionnaire. This timeframe was given in order to give ample opportunity to the respondents to reflect on the items generated on the questionnaire to facilitate valid response.

### 3.9 Method of Data Presentation and Analysis

Data collected from the respondents were presented in tables and analyzed accordingly with the aid of arithmetic mean and simple percentage. The choice of these tools was because they are very convenient and more appropriate to enable the readers to comprehend the findings of the study.

- i. Simple Percentage: This was used in the analysis of each of the questions relating to respondents' demographic variables.
- ii. Mean Score: This was adopted in analyzing each variable in the questionnaire.

The mean score has the formula given by the equation below:

$$\text{Mean (X)} = \frac{\sum fx}{\sum f}$$

Where:

$\Sigma$  = Summation

f = Frequency

x = Variables

Each value of the acronyms on the 5 point likert scale was multiplied by the corresponding frequency of the variable. The frequency (f) column was multiplied by (x) to get function of x (fx). The mean score of each of the variable was obtained by dividing the sum total of (fx) by the sum of (f).

$$\frac{5 + 4 + 3 + 2 + 1}{5} = \frac{15}{5} = 3.0$$

Therefore, the mean scores of 3.0 and above were regarded as agreed responses, while points below the mean average of 3.0 were treated as disagreed responses.

## CHAPTER FOUR

### DATA PRESENTATION AND ANALYSIS

#### 4.1 Introduction

This chapter deals with the presentation and analysis of data collected through questionnaires administered to respondents of NOCACO, Kaduna. The questionnaire distributed to staff of the organization was designed to address and answer certain issues raised in the research. A total number of 35 questionnaires were administered to the staff of NOCACO, Kaduna out of which 30 were filled and returned. The data collected were analyzed through the use of frequency distribution table and percentage.

#### 4.2 Characteristics and Classification of Respondents

**Table 4.1:** Sex of the Respondents

<b>Variable</b>	<b>Response</b>	<b>Percentage (%)</b>
Male	22	73
Female	8	27
<b>Total</b>	<b>30</b>	<b>100</b>

**Source:** Field Survey, 2022

The table above shows that 22 respondents representing 73% are male while 8 respondents representing 27% are female. This means that the majority of the respondents are male.

**Table 4.2:** Working Experience of the Respondents.

<b>Variable</b>	<b>Response</b>	<b>Percentage (%)</b>
1-5 years	8	27
6-10 years	13	43
11-15 years	4	13
16 years and above	5	17
<b>Total</b>	<b>30</b>	<b>100</b>

**Source:** Field Survey, 2022

The table above shows that 8 respondents representing 27% have been working between 1-5 years, 13 respondents representing 43% are between 6 - 10 years, 4 respondents that is 13% responds to 11-15 years while 17% of the respondents have been working for the past 16 years and above.

**Table 4.3:** Educational Background

<b>Variable</b>	<b>Response</b>	<b>Percentage (%)</b>
ND/NCE	15	50
B.Sc/HND	8	27
MBA/PGD	7	23
<b>Total</b>	<b>30</b>	<b>100</b>

**Source:** Field Survey, 2022

The above table shows that 15 respondent representing 50% are ND/NCE holder, 8 respondent representing 27% are B.Sc/HND holder, while 7 respondent representing 23% are MBA/PGD holder.

### 4.3 Data Presentation and Analysis

This section presents and analyzes the data and discusses the findings of the study, which set out to examine the impact of material management in achieving production efficiency.

The findings were based on analysis of the 30 valid responses from the respondents.

**Table 4.3.1:** The importance of material management in achieving production efficiency in NOCACO Limited, Kaduna.

S/N	Variable		SA	A	UD	D	SD	$\Sigma FX$	X	Remark
1	Material management optimizes performance in meeting customer service requirements.	f	5	15	3	44	3	30	3.5	Agree
		x	5	4	3	2	1			
		fx	25	60	9	88	3	$\frac{105}{30}$		
2	Profitability is increasing and cost is minimized.	f	6	16	5	3	1	30	3.9	Agree
		x	5	4	3	2	1			
		fx	30	64	15	6	1	$\frac{116}{30}$		
3	Material management supports the company operations with an uninterrupted flow of materials and services.	f	8	10	7	2	3	30	3.6	Agree
		x	5	4	3	2	1			
		fx	40	40	21	4	3	$\frac{108}{30}$		
4	Material management keeps inventory investment losses under control.	f	10	17	1	2	0	30	4.2	Agree
		x	5	4	3	2	1			
		fx	50	68	3	4	0	$\frac{125}{30}$		
5	Material management ensures that the right item is bought and made available to the manufacturing operations at the right time.	f	10	12	3	3	2	30	3.8	Agree
		x	5	4	3	2	1			
		fx	50	48	9	6	2	$\frac{115}{30}$		

Source: Field Survey, 2022.

$$\text{Grand Mean} = \frac{19}{5} = 3.8 \text{ (Agreed)}$$

From the table illustrated above, it shows that variable 1, 2, 3, 4 and 5 were accepted with the mean scores of 3.5, 3.9, 3.6, 4.2 and 3.8 respectively which are all higher than the cut-off point of 3.0. This implies that material management is importance in achieving production efficiency as it management optimizes performance in meeting customer service requirements, profitability is increasing and cost is minimized, material management supports the company operations with an uninterrupted flow of materials and services, material management keeps inventory investment losses under control, and material management ensures that the right item is bought and made available to the manufacturing operations at the right time.

**Table 4.3.2:** The impact of material management on productivity in NOCACO Limited, Kaduna.

S/N	Variable		SA	A	UD	D	SD	$\Sigma$ FX	X	Remark
6.	Material management contributes to cost reduction and increase in profitability.	f	15	10	2	3	0	30	4.2	Agree
		x	5	4	3	2	1			
		fx	75	40	6	6	0	$\frac{127}{30}$		
7.	Material management provides purchasing power with large orders of a particular material	f	15	10	5	0	0	30	4.3	Agree
		x	5	4	3	2	1			
		fx	75	40	15	0	0	$\frac{130}{30}$		
8.	Damaged and sub-standard materials are rejected thereby preventing the firm from incurring unnecessary cost and thus promoting profitability	f	12	16	0	2	0	30	4.3	Agree
		x	5	4	3	2	1			
		fx	60	64	0	4	0	$\frac{128}{30}$		
9.	Material management provides safety of the materials in transit, the regularity of delivery, as well as the flow of materials	f	18	12	0	0	0	30	4.6	Agree
		x	5	4	3	2	1			
		fx	90	48	0	0	0	$\frac{138}{30}$		
10.	Material management encourages all employees to know that they start a job, the materials will flow without interruption until the job is completed.	f	5	15	3	44	3	30	3.5	Agree
		x	5	4	3	2	1			
		fx	25	60	9	88	3	$\frac{105}{30}$		

**Source:** Field Survey, 2022.

$$\text{Grand Mean} = \frac{20.9}{5} = 4.2 \text{ (Agreed)}$$

From the table illustrated above, it shows that variable 6, 7, 8, 9 and 10 were accepted with the mean score of 4.2, 4.3, 4.3, 4.6 and 3.5 respectively which are all higher than the



cut-off point 3.0. This implies that material management contributes to cost reduction and increase in profitability, material management provides purchasing power with large orders of a particular material, damaged and sub-standard materials are rejected thereby preventing the firm from incurring unnecessary cost and thus promoting profitability, material management provides safety of the materials in transit, the regularity of delivery, as well as the flow of materials, and material management encourages all employees to know that they start a job, the materials will flow without interruption until the job is completed.

**Table 4.3.3:** The challenges of materials management in NOCACO Limited, Kaduna.

S/N	Variable		SA	A	UD	D	SD	ΣFX	X	Remark
11.	Lack of good maintenance strategies	f	12	18	0	0	0	30	4.4	Agree
		x	5	4	3	2	1			
		fx	00	72	0	0	0	$\frac{132}{30}$		
12.	Change management program to reduce time required to successfully implement all changes to the materials management and maintenance departments.	f	10	12	3	3	2	30	3.8	Agree
		x	5	4	3	2	1			
		fx	50	48	9	6	2	$\frac{115}{30}$		
13.	Lack of measure compliance monthly with all programs to ensure cost savings and process improvements are obtained.	f	9	18	0	3	0	30	4.1	Agree
		x	5	4	3	2	1			
		fx	45	72	0	6	0	$\frac{123}{30}$		
14.	Lack of understanding material management	f	12	14	1	2	1	30	4.1	Agree
		x	5	4	3	2	1			
		fx	60	56	3	4	1	$\frac{123}{30}$		
15.	Lack of commitment by top management to material management.	f	9	13	4	4	0	30	3.9	Agree
		x	5	4	3	2	1			
		fx	45	52	12	8	0	$\frac{117}{30}$		

**Source:** Field Survey, 2022.

$$\text{Grand Mean} = \frac{20.3}{5} = 4.1 \text{ (Agreed)}$$

From the table illustrated above, it shows that variable 11, 12, 13, 14 and 15 were accepted with the mean score of 4.4, 3.8, 4.1, 4.1 and 3.9 respectively which are all higher than the cut-off point 3.0. This implies that the challenges of materials management includes lack of good maintenance strategies, change management program to reduce time required to successfully implement all changes to the materials management and maintenance departments, lack of measure compliance monthly with all programs to ensure cost savings and process improvements are obtained, lack of understanding material management, and lack of commitment by top management to material management.

#### 4.4 **Summary of Findings**

Having carefully analyzed and interpreted the data collected, the following findings were obtained.

1. Material management is importance in achieving production efficiency as it management optimizes performance in meeting customer service requirements, profitability is increasing and cost is minimized, material management supports the company operations with an uninterrupted flow of materials and services, material management keeps inventory investment losses under control, and material management ensures that the right item is bought and made available to the manufacturing operations at the right time.
2. Material management has significant impact on productivity of NOCACO Limited, Kaduna as material management contributes to cost reduction and increase in

profitability, material management provides purchasing power with large orders of a particular material, damaged and sub-standard materials are rejected thereby preventing the firm from incurring unnecessary cost and thus promoting profitability, material management provides safety of the materials in transit, the regularity of delivery, as well as the flow of materials, and material management encourages all employees to know that they start a job, the materials will flow without interruption until the job is completed.

3. The challenges of materials management includes lack of good maintenance strategies, change management program to reduce time required to successfully implement all changes to the materials management and maintenance departments, lack of measure compliance monthly with all programs to ensure cost savings and process improvements are obtained, lack of understanding material management, and lack of commitment by top management to material management.

#### 4.5 **Discussion of Findings**

The data presented and analyzed were not just revealing but deserve further discussion thus:

**Research Question 1:** What are the importance of material management in achieving production efficiency in NOCACO Limited, Kaduna?

In providing answer to the above research question, variables 1, 2, 3, 4 and 5 of the data analyzed in table 4.3.1 with grand mean score of 3.8 which is greater than the cutoff point 3.0 was utilized. This shows that material management is importance in achieving production efficiency in NOCACO Limited, Kaduna.

**Research Question 2:** What are the impact of material management on productivity in NOCACO Limited, Kaduna?

To provide answer to the above raised research question, variables 6, 7, 8, 9 and 10 of the data analyzed in table 4.3.2 were established with the grand mean of 4.2 which is also greater than the cutoff point 3.0. This implies that material management has significant impact on productivity of NOCACO Limited, Kaduna.

**Research Question 3:** What are the challenges of materials management in NOCACO Limited, Kaduna?

Variables 11, 12, 13, 14, and 15 of the data analyzed in table 4.3.3 were utilized in answering the research question raised above. The analysis revealed the grand mean of 4.1 which is greater than the cutoff point 3.0. Hence, the respondents answered in the affirmative that there are various challenges affecting materials management in NOCACO Limited, Kaduna.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.1 Summary

This study examined the impact of material management in achieving production efficiency in NOCACO Limited, Kaduna. Research questions guided the study. A survey method was used for this study. A sample of 35 was drawn from the population of 350 which comprises of management and staff of five (5) departments using Roscoe 10% rule of thumb and random sampling techniques was adopted in determining the sample size. A questionnaire developed by the researcher based on 5 point likert scale was used for the collection of primary data for the study.

The instrument was tested on 10 staff of the organization and a total number of 35 questionnaires were produced and administered out of which 30 were filled and returned. The 30 questionnaires formed the basis for the data analysis and interpretation. Data collected for the three research questions were presented in a table analyzed using mean statistics, so as to confirm its degree of conformity with the objectives of the study earlier put forward, and on the basis of which the major findings of the study were revealed and discussed for valid research conclusion and appropriate recommendations.

#### 5.2 Conclusion

Based on the findings of this research, following conclusions were drawn. Material management is importance in achieving production efficiency as it management optimizes performance in meeting customer service requirements, profitability is increasing and cost is minimized, material management supports the company operations

with an uninterrupted flow of materials and services, material management keeps inventory investment losses under control, and material management ensures that the right item is bought and made available to the manufacturing operations at the right time.

More so, the study concluded that material management has significant impact on productivity of NOCACO Limited, Kaduna as material management contributes to cost reduction and increase in profitability, material management provides purchasing power with large orders of a particular material, damaged and sub-standard materials are rejected thereby preventing the firm from incurring unnecessary cost and thus promoting profitability, material management provides safety of the materials in transit, the regularity of delivery, as well as the flow of materials, and material management encourages all employees to know that they start a job, the materials will flow without interruption until the job is completed.

Furthermore, it can be concluded that the challenges of materials management includes lack of good maintenance strategies, change management program to reduce time required to successfully implement all changes to the materials management and maintenance departments, lack of measure compliance monthly with all programs to ensure cost savings and process improvements are obtained, lack of understanding material management, and lack of commitment by top management to material management.

### 5.3 Recommendations

Based on the findings the following recommendations are made:

1. The management should ensure the necessary materials are supplied to user's department at the right time, the right operation and quantity so as to effect efficient operations.
2. Management should pay more attention to material management in order to maximize profit.
3. The company should stick to the use of automated material handling system, by this damages pilferage and deterioration etc which are caused as a result of the use of crude method of materials handling reduced.
4. Adequate safety and security of staff particular in stores, factory and other departments must be ensured (i.e. protective clothing e.g., gloves safely goggles, helmet, etc.) hence, must be used when needed so that maximum productivity can be attained.
5. The receiving department should be given a purchase order copy of each material purchased, so that the receiving officer will know that deliveries are expected and when.
6. Materials should be tested by a qualified control personnel before being place in storage.
7. Employees should be given adequate knowledge on how to handle material in an organization.
8. Stock movement should be adequately documented i.e. whatever received and issued.

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## **APPENDIX I**

### **INTRODUCTION LETTER**

Department of Business Administration,  
College of Business & Management Studies,  
Kaduna Polytechnic,  
Kaduna.

28<sup>th</sup> April, 2022.

Dear Respondents,

#### **IMPACT OF MATERIAL MANAGEMENT IN ACHIEVING PRODUCTION EFFICIENCY IN NORTHERN CABLE PROCESSING AND MANUFACTURING COMPANY (NOCACO), KADUNA**

I am a Higher National Diploma student of the above named department and institution, currently conducting a research on the above topic. In this regard, you have been duly selected as a respondent. This research is part of the requirement for the award of Higher National Diploma (HND) in Business Administration and Management. Your response to the attached questionnaires can make the research a tremendous success.

I wish to appeal to you to assist this study by kindly sparing a few minutes to complete this questionnaire. You are not required to disclose your identity. Be rest assured that your responses will be treated with strict confidence and used for the stated academic purpose only.

Thanks.

Yours faithfully,

**Victor Gabriel**  
KPT/CBMS/19/52097  
The Researcher

## APPENDIX II

### QUESTIONNAIRE

**INSTRUCTION:** Please tick [  ] the appropriate choice.

**SECTION A: Personal Data**

1. Sex: (a) Male [  ] (b) Female [  ]
2. Working Experience: (a) 1-5 years [  ] (b) 6-10 years [  ] (c) 11-15 years [  ]  
(d) 16 years and above [  ]
3. Educational Qualification: (a) ND/NCE [  ] (b) B.Sc/HND [  ] (c) Postgraduate [  ]

**SECTION B: Research Questions**

The acronyms given in the boxes are

<b>SA</b>	=	Strongly Agree	=	5
<b>A</b>	=	Agree	=	4
<b>UD</b>	=	Undecided	=	3
<b>D</b>	=	Disagree	=	2
<b>SD</b>	=	Strongly Disagree	=	1

**Table 1:** The importance of material management in achieving production efficiency in NOCACO Limited, Kaduna.

S/N	Variable	SA	A	UD	D	SD
1.	Material management optimizes performance in meeting customer service requirements.					
2.	Profitability is increasing and cost is minimized.					
3.	Material management supports the company operations with an uninterrupted flow of materials and services.					
4.	Material management keeps inventory investment losses under control.					
5.	Material management ensures that the right item is bought and made available to the manufacturing operations at the right time.					

**Table 2:** The impact of material management on productivity in NOCACO Limited, Kaduna.

S/N	Variable	SA	A	UD	D	SD
6.	Material management contributes to cost reduction and increase in profitability.					
7.	Material management provides purchasing power with large orders of a particular material					
8.	Damaged and sub-standard materials are rejected thereby preventing the firm from incurring unnecessary cost and thus promoting profitability					
9.	Material management provides safety of the materials in transit, the regularity of delivery, as well as the flow of materials					
10.	Material management encourages all employees to know that they start a job, the materials will flow without interruption until the job is completed.					

**Table 3:** The challenges of materials management in NOCACO Limited, Kaduna.

S/N	Variable	SA	A	UD	D	SD
11.	Lack of good maintenance strategies					
12.	Change management program to reduce time required to successfully implement all changes to the materials management and maintenance departments.					
13.	Lack of measure compliance monthly with all programs to ensure cost savings and process improvements are obtained.					
14.	Lack of understanding material management					
15.	Lack of commitment by top management to material management.					