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RESEARCH ARTICLE

Logistics Management and Performance of Federal Tertiary Health Institutions in South East, Nigeria

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ABSTRACT

The study evaluated the logistics management and performance of federal tertiary health institutions in South-East, Nigeria. The specific objectives were to: examine the relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria, evaluate the relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria and identify the relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria. A stratified sampling method was adopted. The sample size of the study was three hundred and seventy-one (371) using Freund and Williams's formula. Three hundred and fifty-four (354) returned their questionnaire and accurately filled representing 95 percent response rate. The instrument for data collection used in the study was structured questionnaire. The validity of the instrument was ascertained with a proper structuring of the questionnaire and a conduct of a pre-test of every question contained in the questionnaire to ensure that they are valid. The reliability was tested using the Pearson correlation coefficient (r). It gave reliability co-efficient of 78.0. Data were presented and analyzed by mean score (3.0 and above agreed while below 3.0 disagreed) and standard deviation using Sprint Likert Scale. Pearson correlation was used to test the hypotheses. The findings of the study revealed that There was positive significant relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria r (97, n = 354) = .433 < 0.874, p < 0.05. There was positive significant relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria r (97, n = 354) = .526 < 0.834, p < 0.05. There was positive significant relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria r (97, n = 354) = .433 < 0.866, p < 0.05. The study concluded that planning, inventory control and material handling had positive significant relationship with the operational efficiency, income generation and safety of federal tertiary health institutions in South-East, Nigeria.

Keywords: Logistics Management; Performance; Planning; Efficiency Federal Tertiary; Health institution

Introduction

Organizations perform various logistical operations so as to meet their customers' needs and sustain development. Logistics management provides organizations with the total operations costs and increases the efficiency of the activities (Abdul, Aun, Oladipo and Olota, 2019). Successful organization practice logistics management to reduce costs, increase their competitiveness and enhance operational efficiency should coordinates and integrates the movement of materials and products from physical, organizational and information aspect (Ristovska, Kozuharov and Petkovski, 2017). Efficient and effective logistics management is viewed and regarded as competitive tool used as a means of increasing performance (Karibo, 2019). Optimizing logistics allocation and utilization is essential for effective healthcare management. However, less consideration is given to it in most hospitals in Nigeria where less resources are allocated to health sector in yearly budgetary. Tertiary health institution consists of several patient classes of which follows different treatment process flow paths over a multiphase and multidimensional requirement with scarce resources and inadequate space (Imeh, Ubong, Anietie and Udonyah, 2021).

Competent logistics management is essential to ensure healthcare products are available for users at service delivery points. A supply chain can be understood as an integrated system composing key players such as suppliers of materials and components, product manufacturers and distributors, retailers of goods as well as customers. In a logistics

management and performance, materials flow downstream to customers, while information flows in both directions (Nsikan, Okon & Uduak, 2019). The responsibility of logistics management is to carry products (raw materials, work in progress and finished products inventories) from supply sources to demand destinations, meeting demand on time and providing efficient service delivery to improve organizational performance. Logistics helps to optimize the

Citation: Ukwuani, B. O. (2023). Logistics Management and Performance of Federal Tertiary Health Institutions in South East, Nigeria. *Annals of Management Studies, 10(3), 32-48. DOI: <u>https://doi.org/10.5281/zenodo.8246921</u> <i>Copyright*@2023 Authors. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. existing production and distribution processes of firms through proper management techniques for promoting the efficiency and competitiveness of the institution (Karibo, 2019). Therefore, the study evaluates the logistics management and performance of federal tertiary health institutions in South-East, Nigeria.

Statement of the Problem

Logistics management is a supply chain management component that is used to meet customer demands through the planning, control and implementation of the effective movement and storage of related information, goods and services from origin to destination. Logistics management helps companies reduce expenses and enhance customer service. Logistics management has been regarded to be the crucial factor for the organizations to obtain competitive edge.

Logistics management process begins with raw material accumulation to the final stage of delivering goods to the destination by adhering to customer needs and organizational standards; it facilitates process strategy, planning and implementation. There is core of the study that provides several hot issues in this field with examples to show how the study contributes from different angles. Inappropriate use of logistics activities added unnecessary cost and process for the organization. The problem facing the present study includes improper planning, inventory control, and poor handling of material. Other challenges organization encounter were improper application of transport, warehouse, and inventory control and logistics information related problems are the basic problem that faces different organization.

In logistics management, unwise decisions create multiple issues. For example, deliveries that fail or are delayed lead to buyer dissatisfaction. Damage of goods due to careless transportation is another potential issue. Poor logistics planning gradually increases expenses, and issues may arise from the implementation of ineffective logistics software. To resolve these issues, organizations should implement best logistic management practices. Companies should focus on collaboration rather than competition. Good collaboration among transportation providers, buyers and vendors helps reduce expenses. The study therefore intends to empirically examine how planning and operational efficiency, inventory control and income generation, and material handling and safety influenced performance of federal tertiary health institution in south-east, Nigeria.

Objectives of the Study

The main objective of the study was to evaluate the logistics management and performance of federal tertiary health institutions in South-East, Nigeria. The specific objectives were to:

- i. Examine the relationship between planning and quality service of federal tertiary health institutions in South-East, Nigeria
- ii. Evaluate the relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria
- iii. Identify the relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria

Research Questions

The following research question guided the study

- i. What is the relationship between planning and quality service of federal tertiary health institutions in South-East, Nigeria?
- ii. What is the relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria?
- iii. What is the relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria?

Statement of the Hypotheses

The following hypotheses guided the study

- i. There is no positive significant relationship between planning and quality service of federal tertiary health institutions in South-East, Nigeria
- ii. There is no positive significant relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria

iii. There is no positive significant relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria

Significance of the Study

Specifically, the study has the following main significances:

The study will benefit all stakeholders in the supply chain to adopt new and better logistics management in the health tertiary institution. The study will also benefit organizations that do not have logistics management mechanisms to be able to get an opportunity to do so. It will also help organizations come up with best practices in relation to logistics in the health institution, not only in South-East but Nigeria as a whole. The study will benefit Nigeria government in conjunction with other players in the health segment to come up with various legal frameworks that may help in enhancing customer satisfaction and also ensuring that whatever products that reach the consumers in a timely and efficient manner.

Researcher/ academia: The study used as the fulfillment of academic requirement and helps to develop an experience on how to conduct other research in the related area.

Review of the Related Literature

Conceptual Framework

Logistics

Logistics refers to the overall process of managing how resources are acquired, stored, and transported to their final destination (Kenton and James, 2020). Logistics was initially a military-based term used in reference to how military personnel obtained, stored, and moved equipment and supplies. The goal of logistics management is to have the right amount of a resource or input at the right time, getting it to the appropriate location in proper condition, and delivering it to the correct internal or external customer (Kenton and James, 2020). Logistics is the management of the flow of goods between the point of origin and the point of consumption in order to meet some requirements, for example, of customers or corporations. The resources managed in logistics can include physical items, such as food, materials, animals, equipment, and liquids, as well as abstract items, such as time, information, particles, and energy. The logistics of physical items usually involves the integration of information flow, material handling, production, packaging, inventory, transportation, warehousing, and often security. The complexity of logistics can be modeled, analyzed, visualized, and optimized by dedicated simulation software. The minimization of the use of resources is a common motivation in logistics for import and export (Xiang, 2014).

Management

Management can be referred to as the process of planning, organizing, staffing, directing, coordinating, and controlling, at other times it is used to describe people as the task of managing them. It is also known as the body of knowledge, practice, and discipline. Management is an art of getting things done through those people who can be manager or non-manager. At the level of the chief executive, the work is done through the functional managers, things at the middle level are implemented through the supervisors and at the lower level of the management through the workers (Kumar, 2019).

Management as a process, it is seen as a process because it involves many tasks. It refers to everyone, a manager separates. Various works done by managers to efficiently utilize available tasks and human resources so that desired objectives can be achieved are expressed as management. Management as a discipline, means that is management is not used to do the activity, nor is it done to the workers who do it, but rather to the knowledge, practice, and discipline. Management includes the characteristics of both art and science. Although some aspects of management make it a science, some others who incorporate the application of the skill make it an art. Every discipline of art is always supported by science, which is the basic knowledge of that art. Similarly, every discipline of science is completed only when it is used to solve various types of problems (Kumar, 2019).

Management is required in all kinds of organisations whether they are manufacturing computers or handlooms, trading in consumer goods or providing saloon services and even in non-business organisations. Management defined as all the activities and tasks undertaken for archiving goals by continuous activities like; planning, organizing, leading and controlling. Management is a process of planning, decision making, organizing, leading, motivation and controlling the human resources, financial, physical, and information resources of an organization to reach its goals efficiently and effectively (iEduNote (2020). Management involves conceiving, initiating and

bringing together the various elements; coordinating, actuating, integrating the diverse organizational components while sustaining the viability of the organization towards some pre-determined goals (Prachi, 2021).

Logistics Management

Logistics management plays a vital part in operating your supply chain. How smoothly your logistics work will make a huge impact on your supply chain as a whole. With the correct logistics management in place, organization can save time and money and deliver superior customer service. Logistics management is extremely important if your business is to be successful. It involves careful control of the goods both leaving the organization premises and entering them, thus keeping your company running smoothly as a whole (Modus, M. 2018). Logistics management consists of the process of planning, implementing and controlling the efficient flow of raw-materials, work-inprogress and finished goods and related information-from point of origin to point of consumption; with a view to providing satisfaction to the customer (Sai, 2019). Logistics management involves identifying prospective distributors and suppliers and determining their effectiveness and accessibility (Kenton and James, 2020). Logistics management is the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory and the related information flows through the organization and its marketing channels in such as way that current and future profitability are maximized through the cost-effective fulfillment of orders (Christopher, M. 2018).

Components of Logistics Management

The logistics activities that take place are controlled and influenced by some of the key components of Logistics management as noted by Manoharan, (2021) and Rushton, Croucher, & Baker, (2017) as Planning, Packaging and utilization; Inventory Control, Transportation, Information and Control; Management of Order Processing, Warehousing and Materials Handling. These various components define what all processes are undertaken in a Supply chain. So, it is highly essential to study these main components of Logistics management in detail.

Planning

Planning is the process of deciding when, what, when where and how to do a certain activity before starting to work. It is an intellectual process that needs a lot of thinking before the formation of plans. Planning is to set goals and to make certain guidelines achieve the goals. Owen (2017) assert that planning is one of the executive functions of the brain, encompassing the neurological processes involved in the formulation, evaluation and selection of a sequence of thoughts and actions to achieve a desired goal. Planning is the fundamental management function, which involves deciding beforehand, what is to be done, when is it to be done, how it is to be done and who is going to do it. It is an intellectual process which lays down an organization's objectives and develops various courses of action, by which the organization can achieve those objectives. By planning process, an organization not only gets the insights of the future, but it also helps the organization to shape its future. Effective planning involves simplicity of the plan, i.e., the plan should be clearly stated and easy to understand because if the plan is too much complicated it will create chaos among the members of the organization (Business Jargons, 2021),

Inventory Control

Inventory control is the process of maintaining a business's stock level to meet customer demand and minimize costs. This involves inventory tracking and maintenance of goods (Joshua, 2019). Inventory control is the process of keeping the right number of parts and products in stock to avoid shortages, overstocks, and other costly problems. Inventory control is the process of optimizing inventory storage to ensure a business has the ideal inventory levels needed to fulfill customer orders on time (Lopienski, 2019). The goal of inventory control is for brands to keep only the necessary units on hand without spending too much money upfront or sacrificing customer satisfaction. Inventory control is focused more at the operations-level and very involved in warehouse system management, from scanning in new items in real-time on the warehouse floor to preparing units for kitting and assembly. Inventory control helps connect the upstream activities of purchasing and manufacturing to the downstream activities of sales and product demand to prevent bottlenecks, speed up processes, identify slow-moving or obsolete items, and even help evaluate suppliers (Lopienski, 2019).

Material Handling

Materials handling management is among many factors that contribute to improve a company's performance. The Materials handling management is defined as the movement, storage, control and protection of material, goods, and products throughout the process of manufacturing, distribution, consumption and disposal. The focus is on the methods, mechanical equipment, systems and related controls used to achieve these functions (MHI, 2021). Materials handling occurs whenever a material is moved may be in a manufacturing, dis-tribution (warehouse), or

office environment. Materials handling also occur during prepara-tion for shipment, transportation may be by sea, air or land, and moving material in and out of carriers (Nikhila, 2021).

Performance

Performance is described as the degree to which the organization is able to convene the needs of its stakeholders and its own needs for survival. Performance of organization is the valued productive output of a system in the form of goods or services. Performance of organization can be measured by operational performance (non-financial performance and financial performance. These dimensions are divided into the following components: market share, return on investment, increase market share, sales growth, return on investment growth, sales margins and the overall situation of competition (Gudeta, 2021). Performance refers to the measurable aspects of the outcomes of an organization's process, such as reliability, production, circle time and inventory turns. Performance is used to assess the success of an organization. The operational performance system is relevant and appropriate to the strategies and competitive environment of the organization (Gitonga, 2017).

Components of Performance of Tertiary health institutions

Performance indicators and health promotion are being scrutinize as never before because of increasing pressure on all sectors of health care to demonstrate their value-for-money (David Buck, Christine Godfery, Antony Morgan,2019). Other authors such as Moritz (2020) summarized Key Performance Indicators and Metrics in health to include the following; Average Hospital Stay, Inpatients flow rate of healthcare institutions, patients satisfaction, Bed Occupancy Rate, Operational delivery, Patients' Safety of Care, Income Generation margin, quality service, Medical Equipment Utilization, Patient Drug Cost Per Stay, Treatment Costs, Patient, Patient Follow-up Rate, Hospital Readmission Rates, Patient Wait Time, Staff-to-Patient Ratio, Canceled/missed appointments.

Operational delivery

Operational delivery is primarily a metric that measures the efficiency of profit earned as a function of operating costs. The greater the operational delivery, the more profitable a firm or investment is. This is because the entity is able to generate greater income or returns for the same or lower cost than an alternative (Adam, 2021). Operational delivery encompasses several strategies and techniques used to accomplish the basic goal of delivering quality goods to customers in the most cost-effective and timely manner (Chron, 2021). Operational delivery is primarily a measure of profit efficiency earned as a function of operating costs. The greater the efficiency of operations, the more profitable it is for a company or investment. This is because the entity can generate higher income or returns for the same or lower cost compared to an alternative. One way to elevate the operational efficiency of financial markets is to give bulk discounts or free commissions to traders (Bhavana, 2021).

Income generation

Income generation is one of the most important activities any business can engage in. It is defined as a process by which a company plans how to market and sell its products or services, in order to generate income. Income generation means a derivative transaction involving the writing of covered options, caps, or floors that is intended to generate income or enhance return. An income investment company is an asset management firm focused on generating income for its clients, often through a portfolio that emphasizes income-generating securities. Income-generating securities are primarily those that pay out dividends or regular income streams, such as bonds, and are chosen because of this feature as opposed to securities that are considered growth securities, whose price will appreciate (Hussain, 2021). Income generation means a derivative transaction involving the writing of covered options, caps, or floors that is intended to generate income or enhance return.

Patients' Safety of Care

Safety is a concept that includes all measures and practices taken to preserve the life, health, and bodily integrity of individuals. In organization, safety is measured through a series of metrics that track the rate of near misses, injuries, illnesses, and fatalities. In order to improve these metrics, employers and safety officials must also conduct investigations following any incident to ensure that all safety protocols and measures are being followed or to implement new ones if needed. Ensuring the safety of workers is both necessary and beneficial for any organization (Safeopedia, 2018). The movement of materials all the way from supplier to end customer is the responsibility of Supply chain. Any disruption in the planned flow of materials at any stage will be appear as supply chain risk (Ali, 2017). There is always risk of any unexpected events which effect and cause the disruption of flow of materials in their journey. Logistics risks involves material handling, storage of products or raw materials, movement of material, damage/pilferage/theft, labeling & packaging the products, staffing & terrorism. To ensure the logistics operations

safety there should be a proper monitoring of the sites, routes, vehicles & staffs through security escorts, CCTV cameras, RFID and Bar-coding for products tracking, GPS & Telematics for vehicle tracking (Ali, 2017).

Theoretical Framework

The section discussed the theoretical foundation in which the study based on which include institutional theory and unified theory of logistics. The study was anchored on Institutional theory. The theory considers the processes by which structures, including schemes, rules, norms, and routines, become established as authoritative guidelines for social behavior.

Institutional Theory

Institutional theory was introduced in the late 1970s by John Meyer and Brian Rowan as a means to explore further how organizations fit with, are related to, and were shaped by their societal, state, national, and global environments. Institutional theory gives a way to understand how organizations might navigate rules and norms of the system in order to appear legitimate and survive. When organizations try make their actions consistent with the expectations of the institutional environment, they work toward something called institutional isomorphism. The institutional theory is concerned with the processes by which structure, routines, rules and norms become established as the guidelines for acceptable behaviour (Laosirihongthong, Adebanjo and Tan, 2013). Organizations have institutionalized reverse logistics practices because of internal and external pressures. In the opinion of Bosire (2011) observed that organizations institutionalize reverse logistics practice due to fear of loss of their products to competitors and also awareness of the consequences of non-compliance with environmental imperatives (Gitonga, 2017).

Unified Theory of Logistics

Unified theory of logistics was proposed by Mentzer, J., Min, S. and Bobbitt, L.M. in the year 2004. One of the propositions of a Unified theory of logistics is that of competitive advantage goal of the organization is to continuously create customer value to satisfy the end users (Maingi, 2015). A review of the theory is that organization leads to the conclusion that the role of logistics is to provide the boundary-spanning, demand and supply coordinating capabilities the organization needs to create customer value to satisfy customers. The logistics contribution to the organizations competitive advantage is very important in both efficiency and effectiveness. Logistics capabilities for competitive advantage include demand management interface capabilities, supply management interface capabilities and information management capabilities. Logistics capabilities play an immensely role in the boundary-spanning interfaces between internal functional area and the focal organization and supply chain partners (Gitonga, 2017).

Conceptual Framework Model of the Study



Source: Researcher's Field Compilation, 2021

Empirical Review

The following empirical reviews were done according to objectives of the study

The Relationship Between Planning and Operational Delivery of Federal Tertiary Health Institutions in South-East, Nigeria

Nsikan, Okon & Uduak (2019) conducted a study on Supply chain management practices and hospital operational efficiency: The Nigerian example. The study was carried out at lkot Osurua- Nigeria. The study sought to investigate the relationship between supply chain management practices and operational efficiency- cost minimization, delivery quality and service availability. Survey design was adopted to delineate the study population, select participants, and design appropriate method of data collection and analysis. Out of 584 healthcare supply chain executives that constituted the study population, 293 were selected from 18 public hospitals in Southern geopolitical zone of Nigeria using the multistage sampling method. The finding shows that operational efficiency is significantly and positively influenced by three major practices: strategic supplier partnership, supplier selection decision, and integration of information communication technologies among supply chain partners. The study concluded that public hospitals in Nigeria embrace the practices of supply chain management, particularly by increasing it information sharing capabilities. The study recommended that Hospital should encourage long term collaboration on public private partnership involving supplier and manufacturers of medical and surgical materials.

Thomas (2020) conducted a study on Challenges in quality care delivery in tertiary health facilities in North-Central Nigeria. The purpose of the study was to examine the challenges of quality healthcare delivery in tertiary healthcare hospitals in North Central Nigeria. The study adopted a quantitative method. A total of 255 respondents, comprising medical, paramedical staff, and patients, from 3 tertiary hospitals were included in the study. Data were collected using Quality Assessment Questionnaire. Chi-square and analysis of variance were used to test the hypotheses. Results of the study showed that the major challenges confronting the delivery of quality healthcare services in the studied health facilities were the inadequate but fairly good condition of medical equipment, inadequate staff training, fairly good salaries, delayed diagnostics and treatment procedures and long wait times of patients. The study concluded that there is a significant association between medical facilities and the quality of healthcare services of tertiary hospitals. The study recommended that the government of Nigeria and hospital boards take steps to improve on healthcare service delivery in the tertiary hospitals.

The Relationship Between Inventory Control and Income Generation of Federal Tertiary Health Institutions in South-East, Nigeria

Ugwu and Udeh (2017) carried out a study on Stock-out and revenue generation in tertiary health institutions in Enugu State. The study sought to ascertain the effect of stock-out on revenue generation in Tertiary Health Institutions in Enugu State. Ex-post facto and survey research designs were adopted for the study. Hypotheses were tested using Panel model. The finding shows that there is a negative relationship between stock-out and revenue generation while there is a positive relationship between hospitals budget for drugs and revenue generation. The study concluded that stock-out distorts smooth running of hospitals with attendant economic and psychological consequences. The study recommended among other things, that hospital management should adopt modern methods of inventory control fortified with radio-frequency identification (RFID) and point-of-sales data analytics to prevent stock-out situations in hospitals.

Ikechi, Omodero and Okezie (2019) conducted a study on inventory control management and revenue generating capabilities of oil and gas drilling firms in Nigeria. The study sought to investigate on the relationship with revenue generating capabilities of oil drilling firms in Nigeria. Simple random sampling technique was used. Data was analyzed using percentage and Spearman's Rank correlation coefficient. The result shows that there is positive and significant correlation between ineffective inventory management and downtime in the operations of oil and gas drilling. The study concluded that, there is incessant downtime in drilling operations of oil and gas firms as a result of poor inventory control management has significant difference with termination of contract of oil drilling firms The study recommended that oil drilling firms should strengthen their inventory management system for effective and timely work delivery in order to avert downtime, loss of income and termination of contracts; members of staff of an oil and gas drilling firms in inventory unit should be trained and retrained on regular basis to embrace technological changes in inventory management to improve their performances which would in turn strengthen the inventory management of such firms.

Adegbie., Nwaobia, Ogundajo & Olunuga (2020) conducted a study on Inventory Control and Financial Performance of Listed Conglomerate Firms in Nigeria. The study was carried out in Ogun State. The study sought to examine the effect of inventory control (inventory procurement control, inventory security control and inventory usage control) on the financial performance of listed conglomerate firms in Nigeria. The study adopted both field and empirical survey research design. The population of the study constitutes the entire six (6) listed conglomerates as at 31st December, 2018. The target population represents 108 staff of the finance and store sections out of which seventy-two were selected using quota sampling techniques for the administration of structure questionnaire, while total enumeration technique was used for the secondary data. Descriptive and inferential statistics were employed for testing the hypotheses. The findings revealed that: inventory control has significantly affects financial performance of listed conglomerate firms in Nigeria; inventory procurement control has significant positive effect on financial performance; and inventory usage control significantly and positively influence financial performance. The study concluded that inventory control significantly influences financial performance of listed conglomerate firms in Nigeria. The study recommended that management of the firm should improve on suppliers' strategic relationship and provides adequate automated security for monitoring the movements of inventory in the firm.

The Relationship Between Material Handling and Safety of Federal Tertiary Health Institutions in South-East, Nigeria

Kathurima, Ombul & Iravo (2016) conducted a study on Effects of materials handling systems on performance of cement manufacturing firms in Machakos County. The objectives of the study were; to determine the effect of automating material handling systems on performance, to assess the extent to which information directed systems affect the performance, to establish the influence of mechanized materials handling systems on performance, to examine the extent to which semi -automated systems affect the performance. A descriptive correlational research design was incorporated. The target population was 60 employees. The Study conducted a census on the target population. Data was analyzed using SPSS version 21 for analysis; Regression analysis model. The finding shows that there was a positive and significant effect of automating material handling systems on performance of cement manufacturing firms. The study recommends that the cement manufacturing firms in Machakos should stiff to improve on their automating material handling systems, information directed systems, semi-automated systems and mechanized materials handling systems in an effort to improve on their performance.

Kassu and Daniel (2016) examined on a literature review on global occupational safety and health practice & accidents severity. The study was carried out in Ethiopia. The purpose of the study was to identify existing gaps on workplace safety and health management and propose future research areas. The study adopted survey research design. The finding shows that knowledge transfer mechanism and industrial topology factors are left. The study concluded that they have focused on single problems related to health and health factors leaving universal improving workplace safety. The study recommended that output based on their research method and findings to fills gap and adds value to a body of knowledge.

Lin, Lin and Yang (2020) carried out a study on occupational health and safety hazards faced by healthcare professionals in Taiwan: A systematic review of risk factors and control strategies. The study was carried out at Taichung, Taiwan. The objective of the study was aimed to assess policy makers and practitioners about the risks of exposure and offer evidence-based on how to eliminate or reduce such risks. The study adopted Systematic Reviews and Meta-Analyses. The study made use of 490 studies addressing the issue of occupational health and safety hazards. The finding shows that Hospitals and healthcare facilities have many unique occupational health and safety hazards that can potentially affect the health and performance of healthcare professionals. The study concluded that the impact of hazards on healthcare professionals poses a serious public health issue in Taiwan; therefore, controlling, eliminating, or reducing exposure can contribute to a stronger healthcare workforce with great potential to improve patient care and the healthcare system in Taiwan. The study recommended that eliminating or reducing hazards can best be achieved through engineering measures, administrative policy, and the use of personal protective equipment.

Nnebue, Ezeuko and Chukwujekwu (2021) conducted a study on Determinants of patients' safety culture practices in a tertiary hospital in Nigeria. The study was carried out at Awka, Anambra State. The objective of the study was to determine the factors affecting patient safety culture (PSC) practices in a tertiary hospital in Nigeria. The study adopted cross-sectional descriptive. A self-administered structured questionnaire survey (QS) was used. Data were analysed using Statistical Package for Social Sciences version 22 and associations tested with Chi-square. The finding shows that knowledge of PSOP and availability of PSC unit, reports errors and regular PSCM positively influences PSC. The study concluded that despite the factors influencing safety practices and outcomes in healthcare delivery systems in Nigeria have not been determined exhaustively. The study recommended that, there is need for composite targeted cum overall improvement on PSC in the setting.

Gap in Knowledge

Logistics management considers everything from information to materials, production and more. Without logistics management, the many phases of any product will quickly fall into a chaotic mess. Logistics management is a detailed process of organizing and implementing an operation. When it comes to business, that process is the flow of work from the beginning to the end, in order to fulfill customer expectations as well as those of your organization. However, empirical review of the study was carried out based on the objectives of the study and none of the empirical was done on the related topic of the present study. Empirical works carried-out within the southeast, Nigeria are; Nnebue, Ezeuko and Chukwujekwu (2021) on determinants of patients' safety culture practices in a tertiary hospital in Nigeria. The study was carried out at Awka, Anambra State. Another empirical study is Ugwu and Udeh (2017) on stock-out and revenue generation in tertiary health institutions in Enugu State. Four of the empirical review was carried outside the state and two were carried out outside Nigeria and none of them was based on the variables of the present study. Therefore, the current study was designed to fill in the existing gap in literature by evaluating logistics management and their performance in federal tertiary institutions in South-East, Nigeria.

Methodology

The study was on the logistics management and performance of federal tertiary health institutions in South-East, Nigeria. The study employed the descriptive survey design. The area of the study were the five federal tertiary health institutions in South-East, Nigeria. Namely, Abia State University Teaching Hospital (ABSUTH), Nnamdi Azikiwe University Teaching Hospital (NAUTH), Odumuegwu Ojukwu Teaching Hospital, Amaku (OOTHA), Alex Ekwueme Federal University Teaching Hospital Abakaliki (FUNAI), Enugu State University Teaching Hospital, ParkLane Enugu (ESUTH), University of Nigeria Teaching Hospital Enugu (UNTH) and Imo State Teaching Hospital, Orlu. The population of the study consists of employees of public tertiary health institutions in South east Nigeria. The employees were made up senior employees from various sections and departments of the public tertiary healthcare institutions such as doctors, nurses, optometrist, radiographers, pharmacists, medical laboratory scientist, medical social workers, clinical psychologist, principal community health officers, programme analysts, administration, accounts and audit, works and maintenance units of the hospital. These made up the population of study of eleven thousand, one hundred and eighty (11,180) senior staff of public tertiary health institutions of South East Nigeria under study (see Appendix B). A stratified sampling method was adopted. The sample size of the study was three hundred and seventy-one (371) using Freund and Williams's formula. Three hundred and fifty-four (354) returned their questionnaire and accurately filled representing 95 percent response rate. The instrument for data collection used in the study was structured questionnaire. The validity of the instrument was ascertained with a proper structuring of the questionnaire and a conduct of a pre-test of every question contained in the questionnaire to ensure that they are valid. The reliability was tested using the Pearson correlation coefficient (r). It gave a reliability co-efficient of 78.0. Data were presented and analyzed by mean score (3.0 and above agreed while below 3.0 disagreed) and standard deviation using Sprint Likert Scale. Pearson correlation was used to test the hypotheses.

Data Presentation, Analyses and Interpretation

The Relationship between Planning and Operational Delivery of Federal Tertiary Health Institutions in South-East, Nigeria

 Table 2: Responses on the relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria

		5 SA	4 A	3 N	2 DA	1 SD	∑FX	- X	SD	Decision
1	The tertiary institution has effective monitoring that improves productivity.	680 136 38.4	420 105 29.7	147 49 13.8	32 16 4.5	48 48 13.6	1327 354 100%	3.75	1.366	Agree
2	The procedures in the tertiary encourages quality feedback	655 131 37.0	408 102 28.8	153 51 14.4	44 22 6.2	48 48 13.6	1308 354 100%	3.69	1.377	Agree
3	The level of strategic planning increases functional performance.	505 101 28.5	640 160 45.2	84 28 7.9	40 20 5.6	45 45 12.7	1314 354 100%	3.71	1.287	Agree
4	Forecasting in the institution helps measuring and improving the process of the university.	1045 209 59.0	160 40 11.3	102 34 9.6	52 26 7.3	45 45 12.7	1404 354 100%	3.97	1.459	Agree
5	The set objectives aid flexibility and consistency in the tertiary institution.	565 113 31.9	732 183 51.7	51 17 4.8	30 15 4.2	26 26 7.3	1404 354 100%	3.97	1.095	Agree
-	Total Grand mean and standard deviation							3.818	1.317	

Source: Field Survey, 2021

Table 2, 241 respondents out of 354 representing 68.1 the tertiary institution has effective monitoring that improves productivity. 3.75 and standard deviation of 1.366. The procedures in the tertiary encourage quality feedback 233 respondents representing 65.8 percent agreed with mean score of 3.69 and standard deviation of 1.377. The level of strategic planning increases functional performance. 261 respondents representing 73.7 percent agreed with mean score of 3.71 and standard deviation of 1.287. Forecasting in the institution helps measuring and improving the process of the university. 249 respondents representing 70.3 percent agreed with mean score of 3.97 and 1.459. The set objectives aids flexibility and consistency in the tertiary institution. 296 respondents representing 83.6 percent agreed with a mean score of 3.97 and standard deviation 1.095

The relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria

Table 3: Responses on the relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria

		5	4	3	2	1	$\sum FX$	-	SD	Decision
		SA	Α	Ν	DA	SD		X		
1	Effective inventory forecasting	405	648	81	120	24	1278	3.61	1.202	Agree
	increases our profits.	81	162	27	60	24	354			
		22.9	45.8	7.6	16.9	6.8	100%			
2	The frequency of inventory	510	572	48	138	24	1292	3.65	1.267	Agree
	valuation enhances more output	102	143	16	69	24	354			
	in the federal tertiary institution.	28.8	40.4	4.5	19.5	6.8	100%			
3	Efficient asset management has	515	468	102	142	29	1256	3.55	1.314	Agree
	led to optimal inventory levels in	103	117	34	71	29	354			
	the institution	29.1	33.1	9.6	20.1	8.2	100%			

	Annals of Ma	anagement St	udies
3 https://ams.de	qepub.org	Imp. Factor 5.	3209

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4	There is less return and defective goods in my tertiary institution	290 58 16.4	736 184 52.0	30 10 2.8	138 69 19.5	33 33 9.3	1227 354 100%	3.47	1.237	Agree
5	Incurring huge costs in storage is discouraged in our institution	395 79 22.3	504 126 35.6	51 17 4.8	138 69 19.5	63 63 17.8	1151 354 100%	3.25	1.448	Agree
	Total Grand mean and standard deviation							3.506	1.294	

/ol. 10 No.

Source: Field Survey, 2021

Table 2, 243 respondents out of 354 representing 68.7 Effective inventory forecasting increases our profits 3.61 and standard deviation of 1.202. The frequency of inventory valuation enhances more output in the federal tertiary institution 245 respondents representing 69.2 percent agreed with mean score of 3.65 and standard deviation of 1.267. Efficient asset management has led to optimal inventory levels in the institution 220 respondents representing 62.2 percent agreed of 3.55 and standard deviation of 1.314. There is less return and defective goods in my tertiary institution 242 respondents representing 68.4 percent agreed with mean score of 3.47 and 1.237. Incurring huge costs in storage is discouraged in our institution 205 respondents representing 57.9 percent agreed with a mean score of 3.25 and standard deviation 1.448

The relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria

Table 4: Responses on the relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria

		5 SA	4 A	3 N	2 DA	1 SD	∑FX	- X	SD	Decision
1	Stocks of goods are physical stored to meet excepted demand.	680 136 38.4	420 105 29.7	147 49 13.8	32 16 4.5	48 48 13.6	1327 354 100%	3.75	1.366	Agree
2	Some set aside physical goods are kept aside to take care of anticipated demands to reduce delay	655 131 37.0	408 102 28.8	153 51 14.4	44 22 6.2	48 48 13.6	1308 354 100%	3.69	1.377	Agree
3	There is no delays in operations for lack of relevant materials	505 101 28.5	640 160 45.2	84 28 7.9	40 20 5.6	45 45 12.7	1314 354 100%	3.79	1.287	Agree
4	There is development of policies aimed at optimal investment in inventory.	1045 209 59.0	160 40 11.3	102 34 9.6	52 26 7.3	45 45 12.7	1404 354 100%	3.97	1.459	Agree
5	Optimal inventory leads to maximization of liquidity and risk in my institution	565 113 31.9	732 183 51.7	51 17 4.8	30 15 4.2	26 26 7.3	1404 354 100%	3.97	1.095	Agree
Sour	Total Grand mean and standard deviation							3.834	1.317	

Table 3, 241 respondents out of 354 representing 68.1 Stocks of goods are physical stored to meet excepted demand 3.75 and standard deviation of 1.366. Some set aside physical goods are kept aside to take care of anticipated demands to reduce delay 233 respondents representing 65.8 percent agreed with mean score of 3.69 and standard deviation of 1.377. There is no delays in operations for lack of relevant materials 261 respondents representing 73.7 percent agreed with mean score of 3.79 and standard deviation of 1.287. There is development of policies aimed at

optimal investment in inventory 249 respondents representing 70.3 percent agreed with mean score of 3.97 and 1.459. Optimal inventory leads to maximization of liquidity and risk in my institution 296 respondents representing 83.6 percent agreed with a mean score of 3.97 and standard deviation 1.095

Test of Hypotheses

Hypothesis One: There is no positive significant relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria

Table 5: Correlation						
		The	The	The level	Forecasting in	The set
		tertiary	procedures	of	the institution	objectives
		institution	in the	strategic	helps	aids
		has	tertiary	planning	measuring	flexibility
		effective	encourage	increases	and improving	and
		monitoring	s quality	functional	the process of	consistency
		that	feedback.	performan	the university.	in the
		improves		ce		tertiary
		productivit				institution.
		у.				
The tertiary institution	Pearson	1	.874**	.718**	.640**	.485**
has effective	Correlation					
monitoring that						
improves productivity.	Sig. (2-tailed)		.000	.000	.000	.000
	N	354	354	354	354	354
The procedures in the	Pearson	.974**	1	.718**	.672**	.497**
tertiary encourages	Correlation					
quality feedback.						
	Sig. (2-tailed)	.000		.000	.000	.000
	N	354	354	354	354	354
The level of strategic	Pearson	.718**	.718**	1	.775**	.433**
planning increases	Correlation					
functional	Sig (2 tailed)	000	000		000	000
performance.	Sig. (2-tailed)	.000	.000		.000	.000
	N	354	354	354	354	354
Forecasting in the	Pearson	.640**	.672**	.775**	1	.504**
institution helps	Correlation					
measuring and						
improving the process	Sig. (2-tailed)	.000	.000	.000	254	.000
of the university.	N	354	354	354	354	354
The set objectives aids	Pearson	.485	.497	.433	.504	1
flexibility and	Correlation					
consistency in the		000	000	000	000	
tertiary institution.		.000	.000	.000	.000	254
** Corrolation is sime if a		(2 toiled)	354	354	354	354
Correlation is significa	nt at the 0.01 level	(z-talled).				

Table 5 is the Pearson correlation matrix on planning and operational efficiency showing the correlation coefficients, significant values and the number of cases. The correlation coefficient result values range from .433 < 0.874. This value indicates that correlation is significant at 0.05 level (2 tailed) and implies that there was positive significant relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria (r=.433 < 0.874). The computed correlations coefficient is greater than the table value of r = .000 at alpha level for a two-tailed test (r= .433 < 0.874, p<.05).

Decision Rule

The decision rule is to accept the null hypothesis if the computed r is less than the tabulated r otherwise rejects the null hypothesis.

Decision

The computed r = .433 < 0.874 is greater than the table value of .000, we reject the null hypothesis. Therefore, we concluded that there was positive significant relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria as reported in the probability value of (r = .433 < 0.874, p < .05).

Hypothesis Two:	: There is no positive significant relationship between invent	ory control and income generation
of federal tertiary	ry health institutions in South-East, Nigeria	

Table 6: Correlation	S					
		Effective	The frequency	Efficient	There is	Incurring
		inventory	of inventory	asset	less	huge
		forecasting	valuation	manageme	return	costs in
		increases our	enhances	nt has led to	and	storage
		profits.	more output	optimal	defectiv	is
			in the federal	inventory	e goods	discoura
			tertiary	levels in the	in mv	ged in
			institution.	institution.	tertiary	our
					institutio	institutio
					n	n
Effective	Pearson	1	.834**	.709**	.799**	.653**
inventory	Correlation					
forecasting	Sig. (2-		.000	.000	.000	.000
increases our	tailed)					
profits.	N	354	354	354	354	354
The frequency of	Pearson	.834**	1	.740**	.777**	.730**
inventory	Correlation					
valuation	Sig. (2-	.000		.000	.000	.000
enhances more	tailed)					
output in the	N	354	354	354	354	354
federal tertiary						
institution.						
Efficient asset	Pearson	.709**	.740**	1	.857**	.526**
management has	Correlation					
led to optimal	Sig. (2-	.000	.000		.000	.000
inventory levels in	tailed)					
the institution.	N	354	354	354	354	354
There is less	Pearson	.799**	.777**	.857**	1	.668**
return and	Correlation					
defective goods in	Sig. (2-	.000	.000	.000		.000
my tertiary	tailed)					
institution	N	354	354	354	354	354
Incurring huge	Pearson	.653**	.730**	.526**	.668**	1
costs in storage is	Correlation					
discouraged in	Sig. (2-	.000	.000	.000	.000	
our institution	tailed)					
	N	354	354	354	354	354
**. Correlation is sig	nificant at the ().01 level (2-tailed).				

Table 6 is the Pearson correlation matrix on inventory control and income generation showing the correlation coefficients, significant values and the number of cases. The correlation coefficient result values range from .526 < 0.834. This value indicates that correlation is significant at 0.05 level (2 tailed) and implies that there was positive significant relationship between inventory control and income generation of federal tertiary health institutions in

South-East, Nigeria (r=.526 < 0.834). The computed correlations coefficient is greater than the table value of r = .000 at alpha level for a two-tailed test (r=.526 < 0.834, p<.05).

Decision Rule

The decision rule is to accept the null hypothesis if the computed r is less than the tabulated r otherwise rejects the null hypothesis.

Decision

The computed r = .526 < 0.834 is greater than the table value of .000, we reject the null hypothesis. Therefore, we concluded that there was positive significant relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria as reported in the probability value of (r= .526 < 0.834, p<.05).

Hypothesis Three: There is no positive significant relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria

Table 7: Correlations						
		Stocks of	Some set	There	There is	Optimal
		goods are	aside	are no	developm	inventor
		physical	physical	delays	ent of	y leads
		stored to	goods are	in	policies	to
		meet	kept aside	operati	aimed at	maximiz
		excepted	to take	ons for	optimal	ation of
		demand.	care of	lack of	investme	liquidity
			anticipate	relevan	nt in	and risk
			d	t	inventory.	in my
			demands	materia		institutio
			to reduce	ls.		n.
			delay.			
Stocks of goods are	Pearson	1	.866**	.718 ^{**}	.640**	.485**
physical stored to meet	Correlation					
excepted demand.	Sig. (2-tailed)		.000	.000	.000	.000
	Ν	354	354	354	354	354
Some set aside	Pearson	.974**	1	.718**	.672**	.497**
physical goods are kept	Correlation					
aside to take care of	Sig. (2-tailed)	.000		.000	.000	.000
anticipated demands to	N	354	354	354	354	354
reduce delay.						
There are no delays in	Pearson	.718**	.718**	1	.775**	.433**
operations for lack of	Correlation					
relevant materials.	Sig. (2-tailed)	.000	.000		.000	.000
	Ν	354	354	354	354	354
There is development	Pearson	.640**	.672**	.775**	1	.504**
of policies aimed at	Correlation					
optimal investment in	Sig. (2-tailed)	.000	.000	.000		.000
inventory.	N	354	354	354	354	354
Optimal inventory	Pearson	.485**	.497**	.433**	.504**	1
leads to maximization	Correlation					
of liquidity and risk in	Sig. (2-tailed)	.000	.000	.000	.000	
my institution.	Ν	354	354	354	354	354
**. Correlation is signification	int at the 0.01 level (2-tailed).				

Table 7. is the Pearson correlation matrix on material handling and Patients' Safety of Care showing the correlation coefficients, significant values and the number of cases. The correlation coefficient result values range from .433 < 0.866. This value indicates that correlation is significant at 0.05 level (2 tailed) and implies that there was positive significant relationship between material handling and Patients' Safety of Care of federal tertiary health institutions

in South-East, Nigeria (r=.433 < 0.866). The computed correlations coefficient is greater than the table value of r = .000 at alpha level for a two-tailed test (r=.433 < 0.866, p<.05).

Decision Rule

The decision rule is to accept the null hypothesis if the computed r is less than the tabulated r otherwise rejects the null hypothesis.

Decision

The computed r = .433 < 0.866 is greater than the table value of .000, we reject the null hypothesis. Therefore, we concluded that there was positive significant relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria as reported in the probability value of (r = .433 < 0.866, p < .05).

Discussion of Findings

The Relationship between Planning and Operational Delivery of Federal Tertiary Health Institutions in South-East, Nigeria

From the result of hypothesis one, the computed r =.433 < 0.874 is greater than the table value of .000, The study concluded that there was positive significant relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria as reported in the probability value of (r= .433 < 0.874, p<.05). In the support of the literature review, Nsikan, Okon & Uduak (2019) conducted a study on Supply chain management practices and hospital operational efficiency: The finding shows that operational efficiency is significantly and positively influenced by three major practices: strategic supplier partnership, supplier selection decision, and integration of information communication technologies among supply chain partners. The study concluded that public hospitals in Nigeria embrace the practices of supply chain management, particularly by increasing it information sharing capabilities. Thomas (2020) conducted a study on challenges in quality care delivery in tertiary health facilities in North-Central Nigeria. The study concluded that there is a significant association between medical facilities and the quality of healthcare services of tertiary hospitals.

The Relationship Between Inventory Control and Income Generation of Federal Tertiary Health Institutions in South-East, Nigeria

From the result of hypothesis two, the computed r =.526 < 0.834 is greater than the table value of .000, The study concluded that there was positive significant relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria as reported in the probability value of (r= .526 < 0.834, p<.05). In the support of the result in the literature review, Ikechi, Omodero and Okezie (2019) conducted a study on inventory control management and revenue generating capabilities of oil and gas drilling firms in Nigeria. The study concluded that, there is incessant downtime in drilling operations of oil and gas firms as a result of poor inventory control management has significant difference with termination of contract of oil drilling firms. Adegbie, Nwaobia, Ogundajo & Olunuga (2020) conducted a study on Inventory Control and Financial Performance of Listed Conglomerate Firms in Nigeria. The findings revealed that: inventory control significantly affects financial performance of listed conglomerate firms in Nigeria; inventory procurement control has significant positive effect on financial performance; and inventory usage control significantly and positively influence financial performance. The study concluded that inventory control significantly influences financial performance of listed conglomerate firms in Nigeria.

The Relationship between Material Handling and Patients' Safety of Care of Federal Tertiary Health Institutions in South-East, Nigeria

From the result of hypothesis three, the computed r = .433 < 0.866 is greater than the table value of .000, The study concluded that there was positive significant relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria as reported in the probability value of (r = .433 < 0.866, p < .05). Kathurima, Ombul & Iravo (2016) conducted a study on Effects of materials handling systems on performance of cement manufacturing firms in Machakos County. The finding shows that there was a positive and significant effect of automating material handling systems on performance. The study concluded that mechanized materials handling systems was found to accounted for performance of cement manufacturing firms. Lin, Lin and Yang (2020) carried out a study on occupational health and safety hazards faced by healthcare professionals in Taiwan: A systematic review of risk factors and control strategies. The finding shows that Hospitals and healthcare facilities have many unique occupational health and safety hazards that can potentially affect the health and

performance of healthcare professionals. The study concluded that the impact of hazards on healthcare professionals poses a serious public health issue in Taiwan; therefore, controlling, eliminating, or reducing exposure can contribute to a stronger healthcare workforce with great potential to improve patient care and the healthcare system in Taiwan.

Summary of the Findings

- i. There was positive significant relationship between planning and operational delivery of federal tertiary health institutions in South-East, Nigeria r(97, n = 354) = .433 < 0.874, p < 0.05
- ii. There was positive significant relationship between inventory control and income generation of federal tertiary health institutions in South-East, Nigeria r(97, n = 354) = .526 < 0.834, p < 0.05
- iii. There was positive significant relationship between material handling and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria r(97, n = 354) = .433 < 0.866, p < 0.05

Conclusion

The study concluded that planning, inventory control and material handling had positive significant relationship with the operational delivery, income generation and Patients' Safety of Care of federal tertiary health institutions in South-East, Nigeria. Logistics management carry products (raw materials, work in progress and finished products inventories) from supply sources to demand destinations, meeting demand on time and providing efficient service delivery to improve organizational performance. Logistics helps to optimize the existing production and distribution processes of firms through proper management techniques for promoting the efficiency and competitiveness of the institution. Optimizing logistics allocation and utilization is essential for effective healthcare management. However, less consideration is given to it in most hospitals in Nigeria where less resources are allocated to health sector in yearly budgetary. Tertiary health institution consists of several patient classes of which follows different treatment process flow paths over a multiphase and multidimensional requirement with scarce resources and inadequate space (Imeh, Ubong, Anietie & Udonyah, 2021).

Recommendation

- i. Effective planning should be implemented to enable the organization to be able to maximize the human resources at its disposal.
- ii. It is recommended that further education be given to supervisors in aspects of monitoring and supervision so as to encourage them to make efficient and effective use of the materials correctly.
- iii. Management should make necessary efforts for proper material handling that will improve customer service by making products easy to find, move, and ship out; cut costs by reducing the amount of time spent moving products; and reduce product damages by properly transporting your products.

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