Kwame Nkrumah University of Science and Technology, Kumasi

Assessing the Effect of Inventory Management on Service Delivery at the Electricity
Company of Ghana Limited

By:

Theresa Forkuoh

A thesis submitted to the Department of Supply Chain and Information
Systems, Institute of Distance Learning, in Partial Fulfilment of the Requirements for
the Award of the degree of

MASTER OF SCIENCE IN
**LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

August, 2023

DECLARATION

I hereby declare that this submission is my own work towards a post graduate degree in Master of Science in Logistics and Supply Chain Management and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

Theresa Forkuoh   ………..……..   ……………………
(Student, PG9264121)   Signature   Date

Certified By:

…………………..   …………………..   …………………..
(Supervisor)   Signature   Date

Certified By:

……………………   ………………….
………………………..
 (Head, SCIS Department)   Signature   Date
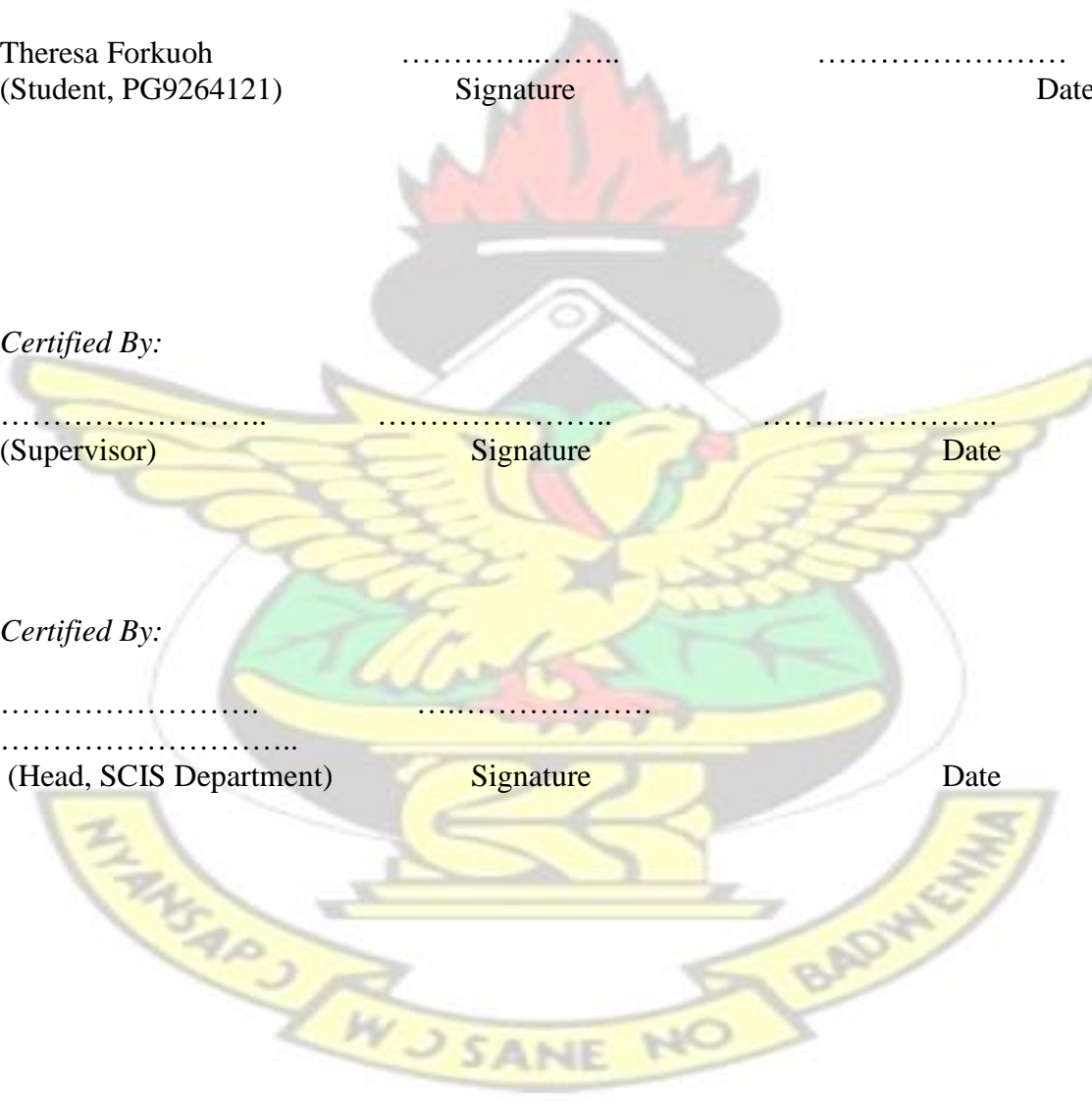
DEDICATION

This work is dedicated to the Lord Almighty through whose undeserved kindness I have been able to complete this work. It is also dedicated to my husband.

ACKNOWLEDGEMENT

KNUST

ABSTRACT

Business enterprises are actively striving to enhance their operational efficiency and simultaneously reduce their manufacturing expenses through the adoption and implementation of several inventory management tactics. According to Koumanakos (2008), Prioritizing inventory management inside a corporation will certainly result in enhancements to the overall performance of the organization. Nevertheless, previous research in the field of inventory management within the manufacturing sector has largely neglected or disregarded the service business. The objective of this study was to examine the correlation between efficient inventory management and elevated levels of customer satisfaction within the service industry. The primary aim of this study is to examine the impact of inventory management on customer satisfaction within the context of the Electricity Company of Ghana Limited. The study involved a sample of 250 participants who were surveyed using a census approach. The accessible population for this study is defined as the complete workforce of the Electricity Company of Ghana, situated in four regions, namely Ashanti East, Ashanti West,

Ashanti South, and Sub Transmission. The primary data was collected using a structured questionnaire as the principal tool. The research utilized a structural equation modelling methodology to assess the collected data and evaluate the proposed research hypotheses. The findings indicate that there is a significant and favourable correlation between economic order quantity (EOQ) and customer satisfaction. The analysis demonstrates that there is a statistically significant and positive relationship between the re-order level and customer satisfaction. The implementation of a just-in-time system has been found to have a large and beneficial effect on customer satisfaction. The utilisation of activity-based costing analysis has been found to have a significant and favourable impact on customer satisfaction.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

In order for companies to remain competitive in today's more cutthroat business environment, they need to develop novel approaches to conducting business. Because inventory is one of a company's most valuable assets and there is a direct correlation between inventory levels and corporate profitability, effective inventory management is essential for a company's success in procurement procedures (Orobia et al., 2020). The term "inventory management" refers to all of the actions that are involved in establishing and managing various levels of inventories, as well as the manner in which supplies are made available at a low cost (Ogbo and Ukpere, 2014).

The ideal resources to have an economic value are inventories, and better management of inventories can help to liberate capital for other productive uses. Inventories are considered ideal resources (Gupta, 2020). According to Kaile (2020), inventory management is crucial because it ensures that a company's assets and stock are adequately managed and that an accurate demand forecast is maintained. This helps the company avoid unnecessary procurement operations. This will be of assistance to the company in the successful execution of procurement processes that match the forces of demand and supply.

In addition, efficient inventory practises can enhance service delivery through managing customer and vendor relationships, which is an essential component of effectively managing supply chains (Tan, 2001). The idea of working together toward a common goal has been hailed as the very heart of supply chain management in a number of different contexts. According to Christopher (2016), a more in-depth

1

investigation of supply chain linkages, in particular those involving product flows, demonstrates that the movement and storage of inventory is at the core of these partnerships. According to McIvor and Humphreys (2004), a large portion of the activity that is involved in managing relationships is dependent on the acquisition, transfer, or maintenance of inventory. Specifically, they suggest that this is the case.

Controlling inventory is inextricably linked to a variety of other problems in terms of best practises. It is well acknowledged that the challenges connected with inventory control constitute an important aspect of organisational growth (Panigrahi et al., 2021; and Onikoyi et al., 2017). Because it is a public organisation, the Electricity Company of Ghana has developed policies that are consistent with the requirements outlined in the constitution. The consistently low compliance levels across public organisations like ECG call for additional research into the ways in which compliance behaviour has the potential to alter the quality of service delivery.

Poor service quality from ECG has been consistently poor over the past few years; erratic power supply, frequent vendor prepaid meter top up system shutdown due to poor internet connectivity, load shedding, poor customer service, persistent increases in price per kilowatt consumed, and so on are just some of the issues that have arisen. According to Setó-Pamies (2012), the quality of the service being provided is the most important factor in determining the level of user happiness. In the context of businesses that provide services rather than tangible commodities, customer satisfaction takes on an even greater level of significance. As a result, the purpose of this research is to investigate how effectively managing inventory affects the provision of high-quality services (customer satisfaction). Nonetheless, the practise of inventory management at

the Electricity Company of Ghana will be the primary focus of this investigation (ECG).

1.2 Statement of the Problem

Currently, every business is making an effort to boost their efficiency while also lowering their production costs by implementing various inventory management strategies (Nayak et al., 2015). The establishment of a strategy to achieve continual improvement in the operational performance of a company can be facilitated with the assistance of these methodologies. The methods that the companies utilised for inventory management were founded on considerations such as the winning industry that they worked in, the fluctuating size of customer requests, supposition gauges and assumptions, and the accessible production limit (Rukiya and Kibet, 2019 and Lohar, 2017). Kehinde Busola and colleagues (2020) identified a few inventory management strategies, such as ABC, economic order quantity, re-order, and inventory control systems, and analysed the influence that these strategies had on customer satisfaction in the setting of the Nigerian market. In the competition in Ghana, this study investigates the effect that these strategies have on the level of consumer satisfaction.

In addition to this, effective management of inventories always has a favourable impact on both the operational and marketing success of businesses in the manufacturing industry (Li et al., 2020). The existing body of research also suggests that the size of the company's capital and the company itself have a favourable influence on inventory management. If a company places a greater emphasis on inventory management, it will inevitably lead to improvements in the company's overall performance (Koumanakos, 2008). However, several earlier studies on inventory management in the manufacturing

industry (Kroes and Manikas, 2018; Panigrahi et al., 2021; Prempeh, 2015; and Panigrahi et al., 2015) with little or no attention to the service industry (Kroes and Manikas, 2018) have created a gap in the literature (Prempeh, 2015; and Panigrahi et al., 2015). The purpose of this study is to address this knowledge gap by investigating the relationship between effective inventory management and high levels of customer satisfaction in the service sector.

Inadequate inventory management puts a company's long-term profitability and ability to maintain commercial operations at risk; electricity service providers are no exception (Meshcheryakova, 2017; Johnson et al., 2021; and Tien et al., 2019). When it comes to the distribution of electricity in Ghana, ECG has a monopoly on the market. In spite of the numerous initiatives taken by the Central Government of Ghana to enhance the calibre of the electrocardiogram (ECG) service that is provided throughout the country, the establishment continues to be criticised for providing services that are not considered to be sufficient (Quartey, 2015). As a result, the purpose of the study was to investigate how well inventory management contributes to customer satisfaction in Ghana.

1.3 Objectives of the Study

The main objective of the study is to analyse the effect of inventory management on customer satisfaction at the Electricity Company of Ghana Limited. The study specifically addressed the following objectives:

1. To determine the impact of economic order quantity on customer satisfaction at the Electricity Company of Ghana Limited

2. To establish the effect of variable demand (re-order) on customer satisfaction at the Electricity Company of Ghana Limited

3. To analyse the effect of Just-in-time system on customer satisfaction at the Electricity Company of Ghana Limited

4. To examine the effect of ABC analysis on customer satisfaction at the Electricity Company of Ghana Limited

1.4 Research Questions

1. What is the impact of the economic order quantity on customer satisfaction at the Electricity Company of Ghana Limited?

2. What is the effect of demand (re-order) on customer satisfaction at the Electricity Company of Ghana Limited?

3. What is the effect of Just-in-time system on customer satisfaction at the Electricity Company of Ghana Limited?

4. What is the effect of ABC analysis on customer satisfaction at the Electricity Company of Ghana Limited?

1.5 Significance of the Study

It is the goal of this study to offer the Electricity Company of Ghana Limited with adequate information to assist them in developing more effective methods of managing their inventory in order to achieve efficiency in their supply system. This study will be helpful to professionals working in supply chain management and financial management because it will provide information on the relationship between inventory management techniques and customer satisfaction and improve delivery efficiency. Additionally, it will improve the delivery efficiency of goods and services. The findings of this study will be valuable to the Ministry of energy because they will shed

more light on the inventory management of the Electricity Company of Ghana Limited. This is because the Ministry of Energy will be able to use the findings to its advantage. Because of this, the Ministry of Energy will be able to step up its efforts to allocate more resources and facilities to improve the performance of the supply chain, which will lead to better service delivery.

The significance of the research will lie in the fact that it will broaden our knowledge of the various methods of inventory management. This study would also be helpful to academicians and academics in widening their knowledge and abilities in inventory management. One further advantage of information sharing among researchers is that it is one of the reasons for conducting the study. As a result, the material that was presented in the study will be helpful to academics who might want to engage in additional research into the field of inventory control in the public sector. This research was carried out with the intention of extending the boundaries of existing knowledge by contributing to the existing body of written material on inventory management procedures used in service industries such as the energy sector and their influence on the quality of the service provided to the people of Ghana.

1.6 Scope of the Study

This section focuses on the geographical as well as contextual limitations of the study. Geographically, the study will focus on the electricity company of Ghana Limited within Kumasi metropolis. This area was chosen because of its proximity to the researcher and the teeming number of customers who go to and from this firm. Contextually, the study was limited to assessing the impact of inventory management

(inventory control system, demand (re-order), economic order quantity, and ABC analysis) on customer satisfaction in the Electricity Company of Ghana Limited.

1.7 Summary of Methodology

When carrying out the investigation, the researchers used a method known as quantitative research. Due to the quantitative nature of the current study, the researchers chose to conduct their investigation using a quantitative case study approach. The researcher has the ability to collect precise information from a small sample inside a specific context in order to generate significant conclusions and generalisations because this design was chosen. The employees at the Electricity Company of Ghana Limited in Kumasi constituted the sample for this research project's population. The researchers' attention focused on the personnel who were directly involved in supply chains and logistics, as well as those who interacted directly with customers. As a result, the researcher asked respondents to fill out a questionnaire that they were responsible for administering to themselves. The Statistical Package for the Social Sciences (SPSS) version 26 was utilised for the analysis of the data. Utilized in this study are descriptive statistics such as the mean and standard deviation. In addition, inferential statistics, especially regression analysis, are utilised in the process of testing hypothesised claims, and Pearson's correlation is utilised in order to investigate the nature of the connection that exists between the variables in question. The information was first tabulated for easier comprehension, and then it was analysed with reference to the relevant research.

1.8 Limitations of the Study

Every human institution is flawed to some degree; none of them is perfect. The researcher is limited in his or her ability to control certain flaws, conditions, or factors

that have an effect on the technique and conclusions. Real-time acknowledgment and interpretation of feedback; time constraints; and tools for analysis are all acknowledged as potential limitations to the research. Other potential limitations to the research include interpretation and understanding of the questionnaire by employees of the Electricity Company of Ghana Limited; real-time feedback acknowledgment and interpretation; and time constraints.

1.9 Organisation of the Study

This research is structured into five chapters. The opening chapter discussed the background to the study and introduced the main issues that inform the study. It pointed out the problem of the study and outlined the specific objectives of the study to help the researcher achieve the main objective. It has also indicated the research questions, their significance and the defined concepts that appear in the study. The next chapter gives further details about the context of the study, focusing on conceptual and theoretical frameworks and a review of relevant literature. Chapter three focuses on the methodological issues of the research. Chapter four is the presentation of data and their analysis and discusses the findings of the study. Chapter five discusses a summary of the findings and presents concluding remarks as well as the recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The current chapter provides a comprehensive review of the existing literature pertaining to the impact of inventory management on service delivery within the context of the Electricity Company of Ghana Limited. The following presentation outlines the review. The second section of this paper comprises several components, including a conceptual literature review, a theoretical literature review, an empirical literature review, a conceptual framework, and a hypothesis formulation.

2.1 Conceptual Literature Review

2.1.1 Supply Chain Management

The effective management of inventory and customer satisfaction in the service industry is heavily reliant on the implementation of supply chain management (SCM). The implementation of efficient inventory management practices is of utmost importance in the service sector, as it plays a crucial role in meeting customer requirements and maintaining optimal levels of customer contentment. According to Li et al. (2017), research has indicated that the implementation of supply chain management (SCM) can assist organizations in efficiently managing their inventory by enhancing the movement of goods and services across the supply chain. According to Croxton et al. (2002) and Igu and Cǎlreţu (2013), demand management is a crucial component of achieving effective supply chain management. The precise anticipation and control of demand can aid organizations in sustaining ideal inventory levels and guaranteeing customer contentment. According to Rathore's research in 2023, the implementation of demand management strategies, such as collaborative forecasting, demand planning, and customer segmentation, has been found to enhance

organizations' comprehension of customer demand and enable them to optimize their inventory levels. The implementation of these techniques may aid service organizations in mitigating stockouts, enhancing inventory turnover, and elevating customer satisfaction levels.

Wu and Chang (2015) noted that supplier management is a crucial component of supply chain management in the service industry. According to Friday et al. (2021) and Christopher (2016), the implementation of efficient supplier management practices can aid service organizations in upholding optimal inventory precision and mitigating the likelihood of stockouts. According to Gavirneni et al. (2017), research has demonstrated that the implementation of supplier management strategies, such as supplier assessment, choice, and cooperation, can enhance the dependability and excellence of supply chain associates for service-oriented entities. According to Kamau and Kagiri (2015), the implementation of certain techniques can aid service organizations in mitigating inventory carrying expenses, enhancing delivery performance, and augmenting customer satisfaction.

The implementation of supply chain management (SCM) can potentially enhance customer satisfaction for service-oriented organizations through the facilitation of expedited and streamlined delivery of goods and services. This assertion is supported by Khadka and Maharjan (2017) as well as Gorane and Kant (2017). According to Bam et al. (2017), the optimization of inventory, reduction of stockouts, and improvement of supplier relationships through effective supply chain management can aid service organizations in decreasing lead times and enhancing delivery performance. Research has indicated that expedited delivery schedules can result in elevated levels of patron

contentment and allegiance, thereby leading to augmented revenues and profitability for service-oriented entities (Liu, Lee, and Hung, 2017; McMurrian and Matulich, 2016). The implementation of supply chain management (SCM) can aid service organizations in minimizing inventory expenses and enhancing the precision of inventory prediction and planning. This, in turn, can mitigate the likelihood of stockouts and enhance customer contentment, as per the studies conducted by Raman et al. (2018) and Mostafa, Hamdy, and Alawady (2019). Inventory plays a critical role in meeting customer demand for service organizations, and proficient inventory management is essential to maintaining optimal levels of customer satisfaction.

2.1.2 Inventory control

The process of inventory control involves determining the amount, worth, and equilibrium of inventory items that are currently in stock in order to facilitate straightforward record-keeping at any given moment (Ogbo and Ukpere, 2014). According to Kotler's (2000) definition, inventory control encompasses the various processes and procedures aimed at managing and maintaining optimal levels of raw materials, work-in-progress, and finished goods inventory. The primary objective is to ensure that sufficient inventory is available while minimizing the costs associated with overstocking or understocking. The acquisition of knowledge regarding the quantity of orders, their utilization, the remaining amount, and the optimal timing for subsequent orders is beneficial for the firm in mitigating the issues of understocking and overstocking, as noted by Poi and Ogonu (2019) and Onkundi and Bichanga (2016). The study conducted by Al-Momani et al. (2020) provides evidence that inventory control is an effective approach to safeguarding and optimizing both the accuracy of data and the physical stock. The management of inventory is facilitated by a system

that is based on technology and encompasses all aspects of a company's inventory operations. According to Sharma and Garg (2016), the process encompasses various activities such as distribution, procurement, warehousing, monitoring, and replenishment. Nicole (2018) is cited. According to Singh, Rasania, and Barua (2022), the implementation of inventory control enables organizations to operate in a seamless and efficient manner.

According to Oluwaseyi, Onifade, and Odeyinka (2017), inventory management is a crucial component of supply chain management that encompasses the strategic planning, procurement, warehousing, and utilization of inventory to satisfy customer needs while minimizing expenses and optimizing revenue. The conventional methods employed for inventory management, such as the economic order quantity (EOQ) and reorder point models, operate under the assumption that demand and lead time are deterministic and stationary and that inventory costs remain fixed (Maddah and Noueihed, 2017; Karakatsoulis and Skouri, 2021). The aforementioned assumptions may not always hold true in practical scenarios, given the potential impact of demand and lead time variability, along with uncertain costs, on inventory-related determinations. Recent research has suggested advanced inventory models that integrate stochastic demand and lead time, along with dynamic pricing and inventory expenses. Syawal and Alfares (2020) proposed a joint inventory-pricing model to optimize inventory and pricing decisions for perishable products with stochastic demand. The authors suggested that dynamic pricing can be an effective strategy to minimize inventory holding costs and increase revenues, particularly for products with limited shelf lives. Garg (2015) presented a fuzzy inventory model that accounts for indeterminate demand and lead time, along with imprecise inventory expenses. The

study showed that fuzzy logic can effectively address the ambiguity and vagueness of inventory parameters, leading to more resilient inventory decisions.

Furthermore, scholarly research has demonstrated the significance of technology and data analytics in enhancing inventory management (Hazen et al., 2014; Tiwari, Wee, and Daryanto, 2018). The emergence of the Internet of Things (IoT) has facilitated the ability of enterprises to monitor and track inventory levels in real-time, thereby enabling prompt responses to fluctuations in demand and supply. Kusuma et al. (2017) devised an inventory management system that employs RFID technology and a forecasting model to enhance inventory precision and minimize stockouts. The authors,ighlights the potent(2021), RFID technology to curtail inventory holding expenses and boost inventory turnover by furnishing precise and prompt inventory infrmation. In addition, the utilization of data analytics methodologies, including machine learning and artificial intelligence, can facilitate the examination of extensive inventory data sets byfirms, thereby enabling the identification of patterns and trends that can be utilized to inform inventory-related decisions (Pallathadka et al., 2021; Balamurugan et al., 2019). The authors Pallathadka et al. (2021) have introduced a deep reinforcement learning technique that aims to enhance inventory management in a multi-echelon supply chai, where demand and lead times are uncertain. The study dedemonstratedd that the utilization of the algorithm can enhance inventory precision and mitigate occurrences of stockouts, particularly in intricate supply chain environments. Shu, Wu, and Zhang (2015) have devised a collaborative inventory-distribution model that optimizes inventory and transportation decisions for a two-tier supply chain. The authors exhibited that synchronized decision-making can effectively mitigate inventory and transportation expenses while simultaneously enhancing

delivery efficacy.This studies focuses on four inventory management techniques - Just-in-Time (JIT) system, re-order, Economic Order Quantity (EOQ), and ABC analysis.

2.1.2.1 Just-in-Time (JIT) System

The just-in-Time (JIT) system is a widely used inventory management approach that prioritizes the prompt provision of goods and materials in limited quantities to meet customer demand, as stated by Ramezani and Razmeh (2014). The just-in-time (JIT) system endeavors to curtail the expenses incurred in carrying inventory by eradicating surplus inventory and enhancing the material flow within the supply chain. This is supported by the works of Vrat and Vrat (2014) as well as Lyu et al. (2020). Several scholarly investigations have suggested diverse expansions and implementations of the JIT system. For instance, the JIT-II system entails enhanced cooperation and correspondence between suppliers and customers (Mondal et al., 2017). Additionally, the JIT with Kanban system utilizes visual cues to initiate replenishment orders (Wang et al., 2016). Empirical evidence suggests that the implementation of the Just-In-Time (JIT) system can lead to enhanced operational efficiency, decreased inventory costs, and improved customer satisfaction.

2.1.2.2 Re-order

The technique of re-order point is utilized to ascertain the appropriate timing for placing a replenishment order, taking into account the inventory level and anticipated demand (Syntetos, Kholidasari, and Naim, 2016). The calculation of the re-order point involves the addition of the anticipated demand over the lead time to the safety stock level, as stated by Mekel, Anantadjaya, and Lahindah (2014). Various recent studies have suggested different extensions and applications of the re-order technique. For

instance, Yan et al. (2013) proposed the stochastic re-order point model, which takes into account the uncertainty of demand and lead time. Additionally, Lin et al. (2019) introduced the re-order point model with multiple suppliers, which optimizes the selection of suppliers and allocation of orders. According to Fera et al. (2017), the utilization of the re-order technique can aid companies in mitigating stockouts, enhancing inventory accuracy, and bolstering the resilience of their supply chain.

2.1.2.3 Economic Order Quantity (EOQ)

Economic Order Quantity (EOQ) is a widely recognized inventory management methodology that ascertains the most favorable order quantity that reduces overall inventory expenses, encompassing both ordering and holding costs (Riza, Purba, and Mukhlisin, 2018). The EOQ model postulates that there is constancy in both demand and lead time and that the costs associated with inventory remain fixed, as per the works of Maddah and Noueihed (2017) and Gholami and Mirzazadeh (2018). In their study, Battini et al. (2018) introduced a multi-objective economic order quantity (EOQ) model that aims to minimize both the total cost and carbon emissions. The authors demonstrated that the conventional EOQ model may not yield optimal solutions in terms of sustainability and that incorporating carbon emissions can have a substantial effect on the optimal order quantity. Daryanto and Christata (2021) expanded the EOQ model by integrating a carbon tax and analyzing its influence on the optimal order quantity and overall cost. The findings of the study suggest that the implementation of a carbon tax may serve as a motivator for companies to decrease their carbon footprint and adjust their procurement volumes.

A recent advancement in the field of economic order quantity (EOQ) research involves the utilization of big data and machine learning methodologies. Namir and Labriji (2022) have presented an EOQ model that integrates historical sales data and employs machine learning algorithms to predict demand. The study demonstrated that the suggested model exhibited superior performance compared to the conventional EOQ model in both precision and overall expenses. The study conducted by Alqahtani et al. (2021) showcases the integration of social media data into the EOQ model, resulting in enhanced demand forecasting. The data suggests that incorporating social media information can notably improve the precision of demand predictions and decrease overall inventory expenses. The study conducted by Chang, Cheng, and Soong (2016) utilized the Economic Order Quantity (EOQ) model within the healthcare sector to ascertain the most suitable order quantity for medical supplies. The findings of the study demonstrated that the EOQ model can be a valuable instrument in minimizing overall inventory expenses in the healthcare domain. According to Zhalechian et al. (2016), the application of the EOQ model can effectively manage the equilibrium between economic efficiency and environmental sustainability within closed-loop supply chains.

2.1.2.4 ABC Analysis

The ABC analysis is a method utilized to categorize inventory items according to their significance and rate of utilization, as per the research conducted by Douissa and Jabeur in 2016. According to Tanwari, Lakhiar, and Shaikh (2000), the ABC analysis is a method of categorizing inventory items into three groups based on their usage and value. These groups include A items, which have high usage and value; B items, which have moderate usage and value; and C items, which have low usage and value.

16

Nallusamy, Alaji, and Sundar (2017) posit that ABC analysis is a technique employed in inventory management that classifies items according to their value and usage frequency with the aim of furnishing more precise and pertinent data on costs to enhance decision-making.

The initial fundamental principle underlying ABC analysis pertains to the Pareto principle, which posits that a limited number of items are responsible for a significant proportion of the overall value or utilization (Yu, 2011). The authors Kumar and Chakravarty (2015) propose a categorization system for inventory items that involves three distinct categories: A items, which are characterized by high value and high usage; B items, which exhibit moderate value and moderate usage; and C items, which are characterized by low value and low usage. The primary purpose of ABC analysis is to allocate inventory management efforts and resources in accordance with the value and usage of items (Nigah, Devnani, & Gupta, 2010). The items categorized as A are deemed to be of utmost significance and necessitate the highest degree of attention, whereas the C items can be effectively managed with minimal allocation of resources. According to Huang et al. (2014), prioritizing A items can lead to enhanced efficiency and cost reduction for companies.

2.1.3 Service Delivery

According to O'Cass and Sok (2015), service delivery is a business concept that describes how clients and providers interact when services are provided by the former and the latter either gains or loses value as a result. Clients receive greater value when services are delivered well. Appeal is taken into account in the coverage measurement, which comprises the following two measurements in particular: percentages of both

delivered items and appeal coverage have been reported (Lu, Goh, and De Souza, 2016). The percent of items delivered indicator measures the proportion of total products requested that have actually been delivered locally (Onyango, 2016). Furthermore, the percent of appeal coverage metric (Makori and Muturi, 2018) measures the percentage of pledges made by donors relative to the total amount of pledges requested for the operation. Its purpose is to demonstrate how effectively and quickly the association is finding pledges for the pledges requested (Makori and Muturi, 2018; Onyango, 2016). This pointer also determines how long it takes for something to be communicated to the suggested goal once a contributor has pledged to donate (Onyango, 2016). The two measures are used to evaluate the consistency and normalcy of the conveyance lead times. Financial effectiveness Three metrics must be present in the pointer, according to Onyango (2016). The first two metrics compare projected costs with actual costs paid for items delivered in the operation using two methodologies: one relative and one outright. The third financial efficiency metric includes transportation costs to deliver the goods to intended recipients (Onyango, 2016), and the metric is expressed as a percentage of the total cost of transportation as compared to the total costs for goods delivered at a given time. After some time, the estimation of this proportion should decrease as more goods are transported nearby and as less expensive transport techniques are used after the initial conveyance stage.

Meter reading, billing, outage management, and customer service are just a few of the stages that make up the service delivery process in the electric power sector (Markovic et al., 2013). Service reliability, or the ability of the electric power provider to deliver electricity without interruptions or outages, is one of the essential ideas in the delivery of services in the electric power business, according to Bollen (2000). Infrastructure

upkeep, network design, and emergency response are only a few of the variables that have an impact on service reliability (Hossain et al., 2019). Customer satisfaction, which refers to the customer's overall assessment of the service obtained, is yet another crucial notion in the delivery of services in the electric power industry (Wang, Lo, and Yang, 2004). Ryu and Han (2010) provided evidence that a number of variables, such as the service's dependability, the level of customer service provided, and the cost of electricity, had an impact on customer satisfaction. According to Mutua (2012), there are several elements that affect service delivery and customer satisfaction in the electric power industry, including infrastructure quality, customer service quality, technology utilization, and the regulatory environment. Power lines, transformers, and other pieces of equipment make up the infrastructure, which has an impact on the service's dependability (Salite et al., 2021). In order to guarantee customer satisfaction, the standard of customer service, including responsiveness and communication, is also crucial (Hammoud et al., 2018). Smart meters and outage management systems are examples of technologies that can improve service performance and customer satisfaction (Eissa, 2019). Finally, by establishing requirements for dependability and customer service, the regulatory environment can have an impact on the way services are delivered (Quach, Thaichon, and Hewege, 2020).

2.1.4 Customer satisfaction

Hansemark and Albinson (2004) posit that satisfaction is a comprehensive customer attitude directed towards a service provider or an affective reaction to the variance between customers' expectations and actual experiences in fulfilling a particular need, objective, or aspiration. Hoyer and McInnis (2001) posit that customer retention pertains to the strategic efforts of institutions to satisfy customers with the ultimate goal

of fostering enduring relationships with them. The significance of customer satisfaction in the service industry has been examined by various scholars, as evidenced by the work of Alrubaiee and Al-Nazer (2010). Ilieska (2013) provided a definition of satisfaction as the emotional state experienced by an individual upon comparing the perceived performance or outcome of a product to their expectations, resulting in feelings of pleasure or disappointment. According to Beaudry and Pinsonneault's (2010) perspective, satisfaction can be associated with emotions such as approval, cheerfulness, relief, enjoyment, and delight experienced by an individual. There are numerous factors that have an impact on the level of satisfaction experienced by customers. Quartey (2015) identified several factors that influence customer satisfaction, including employee friendliness, courtesy, knowledge, and helpfulness; billing accuracy and timeliness; competitive pricing; service quality and value; and advertising clarity. The satisfaction of customers in electric power-provider firms is affected by various factors, such as the dependability of supply, the cost-effectiveness of tariffs, and the caliber of customer service. This has been demonstrated in studies conducted by Nabi et al. (2018) and Al-Turki & Al-Saggaf (2012).

According to Markovic et al. (2018), there exists a positive correlation between customer satisfaction and customer loyalty in the electric power industry. This relationship can result in higher customer retention rates and favorable word-of-mouth referrals. The aforementioned underscores the significance of electric power companies allocating resources towards enhancing customer satisfaction as a means of sustaining a competitive edge and securing enduring prosperity. In recent times, the electric power industry has witnessed the emergence of corporate social responsibility (CSR) as a crucial determinant of customer satisfaction can result in higher customer retention

rates and favorable word-of-mouth referrals. The aforementioned underscores the significance of electric power companies allocating resources towards enhancing customer satisfaction as a means of sustaining a competitive edge and securing enduring prosperity. In recent times, the electric power industry has witnessed the emergence of corporate social responsibility (CSR) as a crucial determinant of customer satisfaction. According to Albus and Ro's (2017) research, corporate social responsibility (CSR) initiatives, such as environmentally sustainable practices and community involvement, have a favorable influence on customer satisfaction within this particular industry. The statement posits that the integration of corporate social responsibility (CSR) into the operational and marketing strategies of electric power companies can serve as a means of distinguishing themselves from their rivals. The electric power industry's customer satisfaction is significantly influenced by the quality of customer service, as evidenced by studies conducted by Nandan (2010) and Komatsu et al. (2013). The responsiveness of customer service representatives and the provision of multiple communication channels for customers to seek assistance are among the factors that contribute to the quality of customer service.

2.2 Theoretical Literature Review

2.2.1 Resource based view

The Penrose (1959) research serves as the foundation for the theoretical framework known as the resource-based view (RBV) of the firm, which Wernerfelt (1984) and Barney (1991) later developed.According to the resource-based view (RBV), the competitive advantage and success of a firm are primarily determined by its resources and capabilities. As per this perspective, a company's resources and capabilities, including but not limited to its brand recognition, patents, proficient workforce, and

technological advancements, can serve as a means of consistent competitive edge, provided they possess the attributes of being valuable, rare, difficult to imitate, and systematically utilized for exploitation (Barney, 2017). The Resource-Based View (RBV) has gained significant acceptance in the realm of strategic management and has been applied to elucidate a diverse array of phenomena, encompassing the triumph of firms across various industries, the progression of industries over time, and the ingress and egress of firms from markets (Killen et al., 2012; Barney, 2017). Furthermore, the resource-based view (RBV) has been utilized in the examination of innovation, positing that the capacity of a firm to innovate and introduce fresh products and services to the market is largely influenced by its resources and capabilities (Kim, Song, and Triche, 2015; Aksoy, 2017). Although widely adopted, the resource-based view (RBV) has faced scrutiny and disapproval. Certain academics have posited that the resource-based view (RBV) fails to adequately consider the significance of extrinsic factors, such as the competitive landscape and macroeconomic circumstances, in influencing a company's achievement (Kabue and Kilika, 2016; Maurer, Bansal, and Crossan, 2011). The Resource-Based View (RBV) has been subject to criticism due to its limited empirical backing and the challenges associated with its testability and falsifiability, as noted by Powell (2001) and Arend and Lévesque (2010).

As per the Resource-Based View (RBV) framework, an organization's resources and capabilities can establish a persistent competitive advantage by satisfying three prerequisites: they must possess value, rarity, and inimitability (Barney, 1991). According to Cho et al. (2012), a firm's resources and capabilities in the service industry regarding inventory management may encompass its inventory control systems, its capacity to predict and handle demand, and its associations with suppliers.

The firm can achieve a competitive advantage through the utilization of its resources and capabilities, which can facilitate the maintenance of optimal inventory levels, the reduction of stockouts, and the enhancement of delivery performance. This, in turn, can result in increased levels of customer satisfaction, as evidenced by studies conducted by Collins et al. (2010) and Naliaka and Namusonge (2015). In his research, Samuel (2012) examined service firms operating in China and discovered that those with robust internal resources, such as inventory control systems and supplier relationships, exhibited greater levels of customer satisfaction and loyalty. The proposition put forth is that companies that prioritize inventory management as a fundamental capability can establish a durable competitive edge by enhancing their capacity to fulfill customer requirements and provide superior services.

The impact of inventory management on customer satisfaction in the hotel industry was the subject of a study by Milovanovi, Paunovi, and Avramovski (2021). The results indicated that proficient inventory management practices, such as precise demand prediction, prompt delivery of goods and services, and favorable supplier relationships, were significantly associated with enhanced levels of customer satisfaction and loyalty. The authors emphasized the significance of internal resources and capabilities, such as effective inventory management systems, in creating a sustainable competitive advantage and raising customer satisfaction. Kamau and Kagiri (2015) conducted a study to investigate the correlation between inventory management and customer satisfaction in the healthcare sector. The study revealed that proficient inventory management, which encompasses streamlined supply chain management, precise demand forecasting, and robust supplier relationships, had a favorable impact on patient satisfaction and loyalty. The authors proposed that healthcare establishments

23

that prioritize inventory management as a fundamental capability can establish a durable competitive edge by augmenting the caliber of healthcare provision and elevating patient results.

2.2.2 Just-in-Time (JIT) theory

The Just-in-Time (JIT) theory is a management philosophy and manufacturing strategy that prioritizes the minimization of waste and enhancement of efficiency. The origins of JIT theory can be attributed to various antecedent concepts, such as the Toyota Production System (TPS) and Total Quality Management (TQM). The Toyota Production System (TPS) was developed by Toyota during the 1940s and 1950s with the primary objective of enhancing productivity through waste reduction and quality improvement. Total Quality Management (TQM) was a management approach that gained prominence during the 1960s and 1970s. It placed significant emphasis on the significance of continuous improvement and customer-centricity. Taiichi Ohno, an engineer at Toyota, introduced the JIT theory in the 1970s with the aim of enhancing the efficacy of the organization's manufacturing procedures. The fundamental concept of just-in-time (JIT) is to manufacture and provide goods or services precisely at the moment of customer demand while minimizing inventory and reducing waste. This notion has been discussed in scholarly works such as those by Ozalp, Suvaci, and Tonus (2010) and Lyu et al. (2020). The just-in-time (JIT) approach is distinguished by its emphasis on minimizing inventory levels and enhancing productivity through the timely production and delivery of goods and services to meet customer demand, as noted by Lyu et al. (2020).

The literature suggests that Just-in-Time (JIT) methodology has demonstrated a favorable influence on various performance indicators, such as inventory turnover, productivity, and cost efficiency. Studies carried out by Demeter and Matyusz (2011) and Lee, Zhou, and Hsu (2015) have supported this. The implementation of JIT can pose certain challenges as it necessitates coordination across various functional domains and a significant degree of dependability in both production and delivery procedures (Lai and Cheng, 2016). According to Lawrence et al. (2016) and Alahakoon and Yu (2015), the management of electricity generation, transmission, and distribution systems within electric power-provider firms exhibits the application of Just-In-Time (JIT) methodology. According to Isaksson and Seifert (2014), the implementation of the Just-in-Time (JIT) methodology can aid electric power companies in cost reduction and enhancement of their financial performance through the reduction of inventory levels and improvement of efficiency. Apart from its influence on financial performance, just-in-time (JIT) has been demonstrated to have a favorable effect on customer satisfaction, as per the findings of Saeidi et al. (2015). The implementation of Just-in-Time (JIT) methodology has the potential to enhance the dependability of electricity provision and minimize operational interruptions, thereby leading to a heightened level of customer contentment (Rathore, 2023). The implementation of the Just-In-Time (JIT) methodology can aid electric power companies in enhancing their operational efficiency and minimizing expenses. This, in turn, can assist in maintaining reasonable electricity tariffs, ultimately leading to heightened customer contentment (Nabi et al., 2018).

2.4 Empirical Literature Review

Effective inventory management is essential to guaranteeing customer satisfaction by ensuring the availability of products at the desired time. An effectively administered inventory management system has the potential to mitigate stockouts, curtail surplus inventory, and enhance overall operational efficacy for businesses. In 2008, Koumanakos conducted a study examining the impact of inventory management on performance. The findings indicated that there is a negative correlation between the quantity of inventory and the returns of a firm. The correlation between a firm's inventory levels and its financial performance suggests that an increase in inventory levels, deviating from lean operations, is associated with a decrease in financial performance. Radasanu (2016) discovered that proficient inventory management has the potential to enhance customer satisfaction by mitigating stockouts and enhancing product availability. The study revealed that companies that implement superior inventory management practices are able to reduce stockouts by up to 30% and improve product availability by 20%.

The study conducted by Yu et al. (2013) aims to explore the correlations between internal integration, external integration (specifically with customers and suppliers), customer satisfaction, and financial performance. The data for the study was gathered through a survey administered to 214 manufacturing firms located in China. The findings indicate that internal integration has a significant impact on both customer and supplier integration, which are both external integration dimensions. Additionally, there is a significant and positive correlation between supplier integration and financial performance. The findings indicate a significant and positive correlation between customer satisfaction and performance. Zhang et al. (2021) conducted a recent study

that concluded that the implementation of inventory management practices, such as just-in-time (JIT) and vendor-managed inventory (VMI), can result in enhanced customer satisfaction through the reduction of stockouts and improvement in product availability. The research, which utilized a sample of electronics firms in China, discovered that the implementation of just-in-time (JIT) and vendor-managed inventory (VMI) systems resulted in a reduction of stockouts by as much as 40% and an enhancement of product availability by 25%.

The study conducted by Nawaz, Hamid, Khurram, and Nawaz (2016) aimed to investigate the influence of inventory performance on the overall performance of non-financial firms listed on the KSE-100 index in Pakistan during the period of 2010 to 2014. The research was conducted using empirical methods. The researchers evaluated the panel data using correlation, OLS, GLM, and Hausman tests.The research findings indicate that there is a noteworthy positive correlation between inventory performance and return on equity. The findings indicate a statistically significant positive correlation between inventory performance and both return on assets (ROA) and return on equity (ROE).

Masudin, Kamara, Zulfikarijah, and Dewi (2018) contributed to the existing body of literature by examining the effects of inventory management and procurement practices on the overall performance of an organization. The research findings indicate that the utilization of automated procurement methods, such as e-products, has a positive impact on the overall performance of an organization. Additionally, the adoption of world-class procurement practices is also associated with an improvement in organizational performance. Furthermore, the research as a whole has concluded that

inventory management leads to improved organizational performance. The methods used to implement a material planning strategy have an impact on the perceived performance of an organization, according to Jonsson and Mattsson's (2008) research. A study was carried out by the researchers to investigate the effects of inventory management practices on perceived planning performance. The research employed five distinct techniques for material planning: the re-order point method, the fixed order interval method, run-out time planning, Kanhan, and MRP. The research employed survey data obtained from 153 manufacturing and 53 distribution companies. The publication was authored by Jonsson and Mattsson in 2008.

Nyabwanga and Ojera (2012) conducted a study in Kenya to investigate the impact of inventory management practices on the business performance of small-scale enterprises. The research employed inventory budgeting, inventory shelf space management, and inventory level management as distinct dimensions of inventory management practices. The study's findings show that inventory budgeting significantly improves the performance of SMEs' businesses. Subsequently, shelf-space management was implemented, and ultimately, inventory level management exhibited the least, yet most noteworthy, impact on business performance. The study conducted by Muchaendepi, Mbohwa, Hamandishe, and Kanyepe (2019) contributes to the existing literature on inventory management and the performance of small and medium-sized enterprises (SMEs) in the manufacturing sector of Harare, Zimbabwe. The research design utilized in the study was qualitative-descriptive. The results indicate that a majority of small and medium-sized enterprises (SMEs) utilize the just-in-time approach for inventory management while lacking a comprehensive

understanding of alternative automated systems and techniques for inventory management.

The study conducted by Mbah, Obiezekwem, and Okuoyibo (2019) sought to establish a correlation between the inventory management practices and operational performance of publicly listed manufacturing companies in the southeastern regions of Nigeria. The study analyzed inventory management practices through a comprehensive questionnaire, focusing on inventory cost, just-in-time approaches, material requirement planning, and strategic supplier partnerships. The study's findings indicate a significant positive correlation between inventory cost, just-in-time methodology, materials requirement planning, and strategic supplier partnerships and the operational performance of manufacturing companies located in the southeastern region of Nigeria.

The study by Lwiki, Ojera, Mugenda, and Wachira (2013) looked into the impact of inventory management techniques on the financial performance of Kenyan sugar production companies. The research investigated the degree to which manufacturing enterprises have implemented lean inventory systems, established strategic supplier partnerships, and utilized technology. A research survey was carried out across all eight operational sugar manufacturing firms between 2002 and 2007. The findings of the study suggest that a favorable association exists between inventory management and both return on sales and return on equity. The statistical analysis revealed that this relationship is statistically significant at a 5% level.

Oballah, Waiganjo, and Wachiuri (2015) carried out a study to look into the effects of inventory management procedures on the performance of public health institutions in Kenya.Oballah and colleagues' study showed that allocating resources to inventory management and ensuring the accuracy of inventory records has a positive effect on an organization's overall performance.Conversely, the occurrence of inventory shrinkage was found to have an adverse effect on the organizational performance of Kenyatta National Hospital. Atnafu and Balda (2018) conducted a study to investigate the impact of inventory management practices on organizations' overall performance and competitive advantage.The research was based on empirical evidence gathered from micro- and small-scale enterprises located in Ethiopia. The research findings suggest that increased implementation of inventory management practices can result in a strengthened competitive edge and enhanced overall performance of the organization. Moreover, the research hypothesized a direct and favorable impact of competitive advantage on the performance of the organization.

The impact of inventory management practices on the operational performance of Kisii County Government, Kenya, was investigated by Otundo and Bichanga (2015). This research investigated the impact of demand forecasting practices, inventory categorization practices, and vendor-managed inventory (VMI) practices on the operational performance of Kisii County, located in Kenya. According to the findings of the study, the categorization of inventory with respect to customer service was identified as the most significant factor impacting operational performance. The study suggested that operational performance was impacted by the unobstructed movement of order fulfillment for supplies, decreased inventories, and prompt replenishment of inventory in user departments. A study was conducted by Yaping, Obimpeh-Quayson,

and Sarpong (2019) to investigate the effects of supply chain management on technical universities in Ghana. The research implemented various inventory management techniques, including precision, investment, capability, loss, efficiency, and rotation. The researchers Yaping et al. utilized the Smart PLS methodology to conduct data analysis in their study. Their findings indicate that factors such as inventory accuracy, investment, capacity, shrinkage, investment, and turnover exhibit a statistically significant positive impact on the organizational performance of technical universities in Ghana.

The study by Opoku, Fiati, Kaku, Ankomah, and Opoku-Agyemang (2020) looked into the effects of various inventory management strategies on the operational effectiveness of manufacturing companies in Ghana. The research utilized a descriptive survey methodology and structured questionnaires to gather primary data from a sample of 152 procurement and operations managers and officers. The study conducted by Opoku et al. (2020) determined that the implementation of inventory management practices, such as strategic supplier partnerships, activity-based costing, vendor-managed inventory, economic order quantity, material resource planning, and just-in-time, has a noteworthy impact on the operational performance of manufacturing industries in Ghana. The study conducted by Kasim, Zubieru, and Antwi (2015) examined the impact of inventory management strategies on the financial performance of small and medium-sized enterprises (SMEs) located in the Northern Region of Ghana. The research findings indicate that effective implementation of inventory management practices has a significant positive impact on the financial performance of small and medium-sized enterprises (SMEs) operating in the Northern Region of Ghana. Additionally, the research posited that the implementation of stock management strategies yields

favorable outcomes for the financial performance of small and medium-sized enterprises (SMEs). As a result, it is imperative for SME managers to adopt proficient stock management practices to sustain the financial performance of their business, particularly in an unpredictable business climate (Kasim et al., 2015).

Lee and Park (2018) conducted a study that revealed that the implementation of inventory management practices, such as just-in-Time (JIT) and vendor-managed inventory (VMI), can enhance customer satisfaction by diminishing lead times and enhancing product quality. The research, which utilized a sample of Korean electronics enterprises, discovered that the implementation of JIT and VMI enabled firms to curtail lead times by as much as 30% and enhance product quality by 20%. Zhang et al. (2021) conducted a recent study that revealed that the implementation of inventory management practices, including just-in-time (JIT) and vendor-managed inventory (VMI), can enhance customer satisfaction by mitigating stockouts and enhancing product availability. The research, which utilized a cohort of Chinese electronics enterprises, discovered that the implementation of just-in-time (JIT) and vendor-managed inventory (VMI) systems resulted in a reduction of stockouts by a maximum of 40% and an enhancement of product availability by 25%. The extant body of research indicates that the implementation of efficient inventory management techniques, such as just-in-time (JIT) and vendor-managed inventory (VMI), can result in enhanced levels of customer satisfaction. This is achieved through the reduction of stockouts, the minimization of surplus inventory, and the improvement of product availability, lead times, and quality.

2.5 Conceptual Framework

The conceptual framework is a visual representation that depicts the interrelationships among various constructs. The conceptual framework comprises a visual representation of the interrelationships between various constructs. The present study introduces a conceptual framework that examines the impact of inventory management on customer satisfaction. Based on this assumption the figure 2.1 is presented.

Figure 2.1 Conceptual Framework
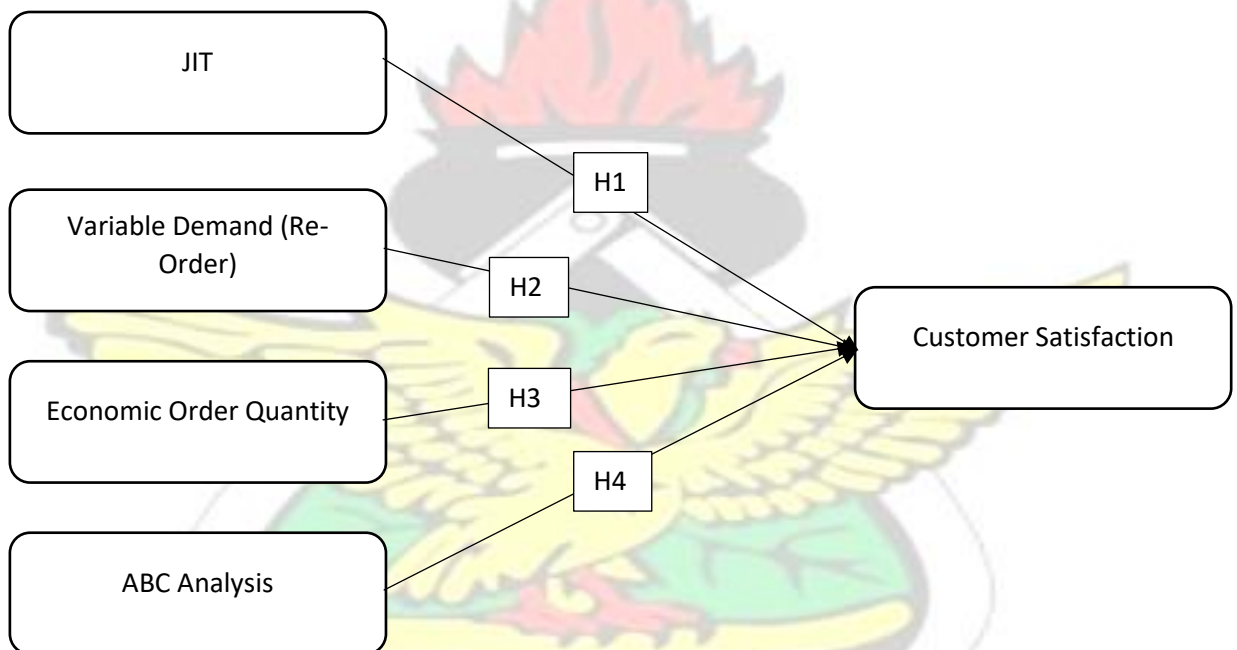
Source: Author's Construct based on existing literature

2.6 Hypothesis Formulation

2.5.1 Just-In-Time and Customer Satisfaction

The JIT approach is intended to better inventory management and shorten lead times, which can assist businesses in enhancing product quality, enhancing delivery performance, and lowering the risk of stockouts (Atnafu and Balda, 2018). Businesses can lower their inventory carrying costs and increase customer satisfaction by doing so

(Nemtajela and Mbohwa, 2017; Lwiki et al., 2013). This is done by reducing the amount of inventory they have on hand. The JIT system additionally promotes greater supplier and customer collaboration and communication, which can increase responsiveness to customer requests and boost general satisfaction (Lai and Cheng, 2016; Nimeh, Abdallah, and Sweis, 2018). In the automobile industry, Wang et al. (2016) looked at how a JIT with a Kanban system affected customer satisfaction. According to the study, using the JIT with Kanban system increased customer satisfaction by enhancing product quality, reducing lead times, and improving delivery performance. The study also emphasized the significance of cooperation and communication between suppliers and customers in achieving these advantages.

Chaudhari and Patel (2015) looked at the effect of a JIT system on consumer satisfaction in the food service sector in another study. According to the study, the use of a JIT system increased customer satisfaction by accelerating delivery times, improving product quality, and improving responsiveness to customer requests. The study also emphasized how crucial good inventory management is to achieve these advantages. Also in 2021, Bashar, A., Hasin, and Adnan conducted a study to determine how a JIT-II system affected customer satisfaction in the apparel sector. According to the study, the JIT-II method increased customer satisfaction by enhancing product quality, reducing lead times, and improving delivery performance. The study also emphasized the significance of cooperation and communication between suppliers and customers in achieving these advantages. In a similar vein, a 2019 study by Goshime, Kitaw, and Jilcha looked into how JIT deployment affected customer satisfaction in the manufacturing sector. According to the study, putting JIT practices into effect, like supplier relationships and continuous improvement, improved product

quality, sped up delivery times, and improved responsiveness to customer requests, which in turn raised customer satisfaction levels. The study's hypothesis is based on the literature review and justification presented above.

H1: Just-in-time has a positive impact on Customer satisfaction.

2.5.2 Re-Order Level and Customer Satisfaction

Ahunanya et al. (2022) conducted a study to investigate the effect of an optimized re-order level on customer satisfaction within the fashion industry. The research revealed that the optimization of the re-order level had a positive impact on product availability, lead time reduction, and responsiveness to customer needs, leading to increased customer satisfaction levels. The research findings also underscored the significance of proficient inventory management in attaining these advantages. Burgos and Ivanov (2021) conducted a study to examine the effect of an optimized re-order level on customer satisfaction within the grocery retail sector. The research revealed that the enhancement of the re-order level resulted in the amelioration of product availability, the mitigation of stockouts, and the enhancement of delivery performance, culminating in elevated levels of customer contentment. The research findings have underscored the significance of efficient collaboration and communication between suppliers and customers in attaining these advantages.

Mo et al. (2022) conducted a study to investigate the effect of an optimized re-order level on customer satisfaction within the e-commerce sector. The research revealed that the optimization of the re-order level had a positive impact on product availability, lead time reduction, and responsiveness to customer demands, leading to increased customer satisfaction levels. The research findings underscored the significance of proficient

inventory management and collaborative efforts between suppliers and customers in attaining these advantages. Furthermore, Raji et al. (2021) conducted a study to examine the effects of an optimized re-order level on customer satisfaction within the automotive sector. The research revealed that the enhancement of the re-order level resulted in the amelioration of product availability, the mitigation of stockouts, and the enhancement of delivery performance, culminating in elevated levels of customer contentment. The research findings also underscored the significance of proficient inventory management and collaborative efforts between suppliers and customers in realizing these advantages. Drawing from the extant literature and the aforementioned argumentation, the present study posits a hypothesis that:

H2: Re-order level has a positive impact on Customer satisfaction.

2.5.3 Economic Order Quantity and Customer Satisfaction

The study conducted by Zeng et al. (2020) investigated the effect of an optimized economic order quantity (EOQ) on customer satisfaction within the retail sector. The research revealed that the enhancement of the economic order quantity (EOQ) resulted in the amelioration of product accessibility, the mitigation of inventory shortages, and the enhancement of delivery efficiency, culminating in elevated levels of customer contentment. Durowoju, Chan, and Wang (2020) conducted a study to examine the effects of an optimized economic order quantity (EOQ) on customer satisfaction within the grocery retail sector. The research revealed that the enhancement of the economic order quantity (EOQ) led to an improvement in the availability of products, a reduction in lead times, and an increase in responsiveness to customer demands, ultimately resulting in elevated levels of customer satisfaction. Furthermore, Liu et al. (2019) conducted a research study to investigate the effects of an optimized economic order quantity (EOQ) on customer satisfaction within the e-commerce sector. The research

revealed that the enhancement of the economic order quantity (EOQ) led to the amelioration of product availability, the minimization of lead times, and the augmentation of customer responsiveness, thereby resulting in elevated levels of customer contentment. Ernawati and colleagues (2021) conducted a study to examine the effects of an optimized economic order quantity (EOQ) on customer satisfaction within the manufacturing sector. The research revealed that the enhancement of the economic order quantity (EOQ) resulted in the amelioration of product accessibility, the mitigation of inventory shortages, and the enhancement of delivery efficiency, ultimately resulting in elevated levels of customer contentment. The research findings have underscored the significance of proficient inventory management and collaborative efforts between suppliers and customers in realizing these advantages. Drawing from the extant literature and the aforementioned argument, the present study posits a hypothesis that:

H3: Economic Order Quantity has a positive impact on Customer satisfaction.

2.6.4 Activity Based Costing and Customer Satisfaction

The study by Yunus et al. (2009) looks into the effects of perceived value and service quality on customer satisfaction. The sample size comprised 150 usable questionnaires that were collected from undergraduate students at a public university located in Sarawak, Malaysia. The results of the hierarchical regression analysis revealed four significant findings: The correlation between perceived value and reliability has a significant impact on customer satisfaction. The correlation between responsiveness and perceived value has a noteworthy impact on customer satisfaction. The correlation between customer satisfaction and the perceived value and assurance relationship is

noteworthy. The correlation between empathy and perceived value has a significant impact on customer satisfaction, as evidenced by empirical research. This relationship represents a fourth important factor to consider in understanding customer behavior. The study conducted by Maiga and Jacobs (2003) aimed to examine the effects of ABC implementation on customer satisfaction within the airline sector. According to the research, the adoption of activity-based costing (ABC) resulted in enhanced cost control and increased visibility into pricing structures, ultimately resulting in elevated levels of customer contentment.

Carroll and Lord (2016) conducted a study to investigate the effects of ABC implementation on customer satisfaction in the healthcare sector. According to the research, the adoption of activity-based costing (ABC) resulted in enhanced cost management, increased pricing transparency, and improved responsiveness to customer demands, ultimately resulting in heightened levels of customer contentment. The study conducted by Zaharia and Bordeianu (2018) aimed to examine the effects of ABC implementation on customer satisfaction within the manufacturing sector. The research revealed that the adoption of activity-based costing (ABC) resulted in enhanced cost management, increased pricing transparency, and improved responsiveness to customer demands, ultimately resulting in elevated levels of customer contentment.

H4: Activity based Costing has a positive impact on Customer satisfaction.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The current chapter expounds on the methodology employed in the research, which investigates the impact of inventory management on service delivery within the Electricity Company of Ghana Limited. The present study is presented in the following manner: Section 3.1 presents the research design; Section 3.3 presents the sample and sampling techniques; Section 3.4 presents the data and data collection; Section 3.5 presents the validity and reliability of constructs and variables; and finally, Section 3.6 presents the ethical consideration.

3.1 Research Design

The design of the research serves as a framework for the systematic collection and examination of information. According to Galletta (2013), it is not possible to find a research design that exists independently. The current study utilized a quantitative research methodology in terms of its research approach. The rationale behind this study is rooted in the acquisition and evaluation of numerical data, coupled with statistical hypothesis testing. This approach aligns with the quantitative methodology. Research is typically undertaken with the primary objectives of exploring a novel subject matter, providing a detailed depiction of a phenomenon, or offering an explanation for the occurrence of a particular phenomenon. According to Casula, Rangarajan, and Shields (2021), the categorization of research objectives typically divides them into exploratory, descriptive, or explanatory purposes. The exploratory research design is centered on the identification of ideas and insights pertaining to a particular phenomenon or problem (Bist, 2014). In contrast, descriptive studies aim to provide

succinct depictions of occurrences, circumstances, individuals, or associations among variables (Yilmaz, 2013). The objective of explanatory research is to verify postulated hypotheses by establishing causal connections between variables (Kothari 2007). According to Saunders (2009), researchers have access to a range of research designs, including case study, survey, experiment, action research, archival, grounded theory, and ethnography, when conducting a research project. The study will utilize a survey methodology. The utilization of the survey methodology facilitated the acquisition of a substantial quantity of information in an efficient manner from the target sample to tackle the research aims.

3.2 Population of the Study

The study's population comprises all employees of the Electricity Company of Ghana, located in the Cape Coast metropolis. To obtain a representative sample, it is imperative to possess knowledge of the population size and its distribution across relevant subgroups of interest (Urdan, 2022). The group of individuals that has piqued the researcher's interest is commonly referred to as the target population or universe, as noted by Seawright and Gerring (2008). The study's accessible population is delineated as the entirety of the Electricity Company of Ghana located in four specific regions, namely Bono, Bono East, Ahafo, and Ashanti Region.

3.3 Sample and Sampling Techniques

Researchers have the option to utilize either probabilistic or non-probabilistic sampling strategies, contingent upon the objective of the study. According to Taherdoost (2016), the implementation of a probabilistic sampling technique guarantees that every element

within a given population possesses an equivalent opportunity of being chosen for inclusion in the sample. Acharya et al. (2013) and Kandola et al. (2014) have identified various types of probabilistic samples, including simple random, stratified sampling, cluster, systematic, and multi-stage sampling. According to Kermorvant et al. (2019), non-probabilistic sampling methods do not guarantee equal representation of all items in the sample. Etikan and Bala (2017) identified several non-probabilistic sampling techniques, including convenience sampling, quota sampling, snowball sampling, and purposeful or judgmental sampling. The present investigation employs the purposive non-probabilistic sampling method for the selection of participants in the sample. The rationale behind this approach lies in its ability to facilitate the adoption of tactics aimed at targeting specific individuals for the purpose of obtaining crucial data that cannot be obtained through alternative sampling techniques (Guest, Namey, & Mitchell, 2013). The study employed purposive sampling as a method to obtain crucial data from both firm inventory management and customer satisfaction. The sample size in a research study is defined as the ultimate cohort of participants that the researcher will analyze and draw conclusions from based on the results obtained. The present investigation comprised a cohort of 250 individuals, namely employees of the supply chain who are responsible for inventory and operations, as well as customers of the Electricity Company of Ghana.

3.4 Data and Data Collection

In order to achieve the study objectives and ensure the credibility of the findings, the study relied on primary sources of data. According to Schuurman (2020), primary data refers to information that is collected for the first time and is utilized to address research questions or problems under investigation. The study's research findings were

primarily based on the primary data collected from targeted respondents from various electricity companies in selected regions.

3.4.1 Variables Description and Measurement (data and variables)

The data collection measures utilized to address the research objectives were derived from pre-existing literature. The survey instrument employed in this study was of a closed-ended nature and was utilized to elicit feedback from the participants. The questionnaire was designed in a structured format to facilitate comprehension by participants, thereby enhancing the accuracy and dependability of the responses obtained. The survey instrument was designed with a five-point Likert scale, wherein the responses will be graded on a continuum from strongly disagree to strongly agree. The measurement scale will consist of the following categories: "1 = strongly disagree", "2 = disagree", "3 = neutral", "4 = agree", and "5 = strongly agree".

Table 3.1 Research Instrument and Sources and Measures

Construct	Sub construct	Items	Reference
Inventory Management	Economic Order Quantity	7	Onyango, (2016)
	Re-order level	7	
	Just-in-time	8	
	Activity based Costing	3	
customer satisfaction		4	Poi and Opara, (2021)

3.4.2 Data Collection Instruments

The study utilized descriptive survey instruments (questionnaires) to gather primary data from the respondents. The researcher created and formulated the questionnaires, which consisted of structured and closed-ended responses for items or inquiries. The justification for employing closed-ended questions is rooted in the researcher's aim to elicit precise and predetermined answers from the participants. The survey instrument was partitioned into discrete segments labeled A, B, and C. Respondents were requested to furnish their demographic information in Section A, including but not limited to age, gender, educational attainment, and years of professional experience. Section B of the survey requested participants furnish precise answers to inquiries presented under each of the constructs, while Section C focused on customer satisfaction queries pertaining to inventory management systems. The survey items were rated on a Likert scale ranging from 1 (representing strong disagreement) to 5 (representing strong agreement). The respondents completed the surveys in their entirety. In order to enhance the efficacy of data collection, the researcher designated a representative for each of the four chosen regions of the Electricity Company of Ghana. The questionnaires were self-administered by the researcher using the drop-and-pick method. Due to the anticipated busy schedules of the participants with their administrative duties, the researcher allotted a maximum of one week for the retrieval of surveys from the respondents.

3.5 Validity and Reliability of Constructs/Variables

Mohajan (2017) posits that the assessment of any measurement instrument or tool for research necessitates the consideration of validity and reliability as the two fundamental and crucial features. According to Mohajan (2017), the evaluation of validity and

reliability in qualitative research enhances transparency and minimizes the potential for researcher bias. Consequently, in the absence of an evaluation of the soundness and dependability of research, explicating the impact of measurement inaccuracies on the theoretical constructs under investigation becomes arduous. According to Brahma (2009), "the concept of validity pertains to the extent to which the collected data effectively represents the targeted area of inquiry (Taherdoost, 2018). The focus of this field of study pertains to the nature of the construct being measured by an instrument and the degree of accuracy with which it is measured. Mohajan (2017) Validity refers to the extent to which a measure assesses the intended construct (Field, 2013). The present study utilized the Cronbach's alpha test to establish the reliability and validity of the research. The alpha test was evaluated against a threshold of 70%. Variables with a statistically significant alpha level of 70% or higher were deemed reliable and valid for further analysis.

3.6 Ethical Consideration

Ethics is a crucial element in all research endeavors. Ethics, also referred to as moral philosophy, is the field of inquiry concerned with the examination of ethical principles and values that determine what is considered morally right or wrong. The term "moral value system" or "moral value theory" refers to any system or theory that pertains to moral values or principles. The significance of ethics in research lies in its ability to ensure that the welfare of research participants is not compromised, that their dignity is respected, and that their privacy and confidentiality are protected. Additionally, ethical research practices entail avoiding deception and the dissemination of misleading information while prioritizing honesty and transparency in all communication (Moria, 2021). The present investigation sought approval from the ethics committee of the

graduate school at Kwame Nkrumah University of Science and Technology (KNUST). Subsequently, permission was granted by the committee, thereby enabling the researcher to proceed with the study. The researcher ensured that prior to administering the survey, consent was obtained from each respondent. The survey was conducted with the full participation of all 250 individuals. Furthermore, participants were informed of the necessity to discontinue their involvement in the survey in the event that they no longer wished to partake. The individuals involved were informed that the collected data would be utilized exclusively for scholarly pursuits.
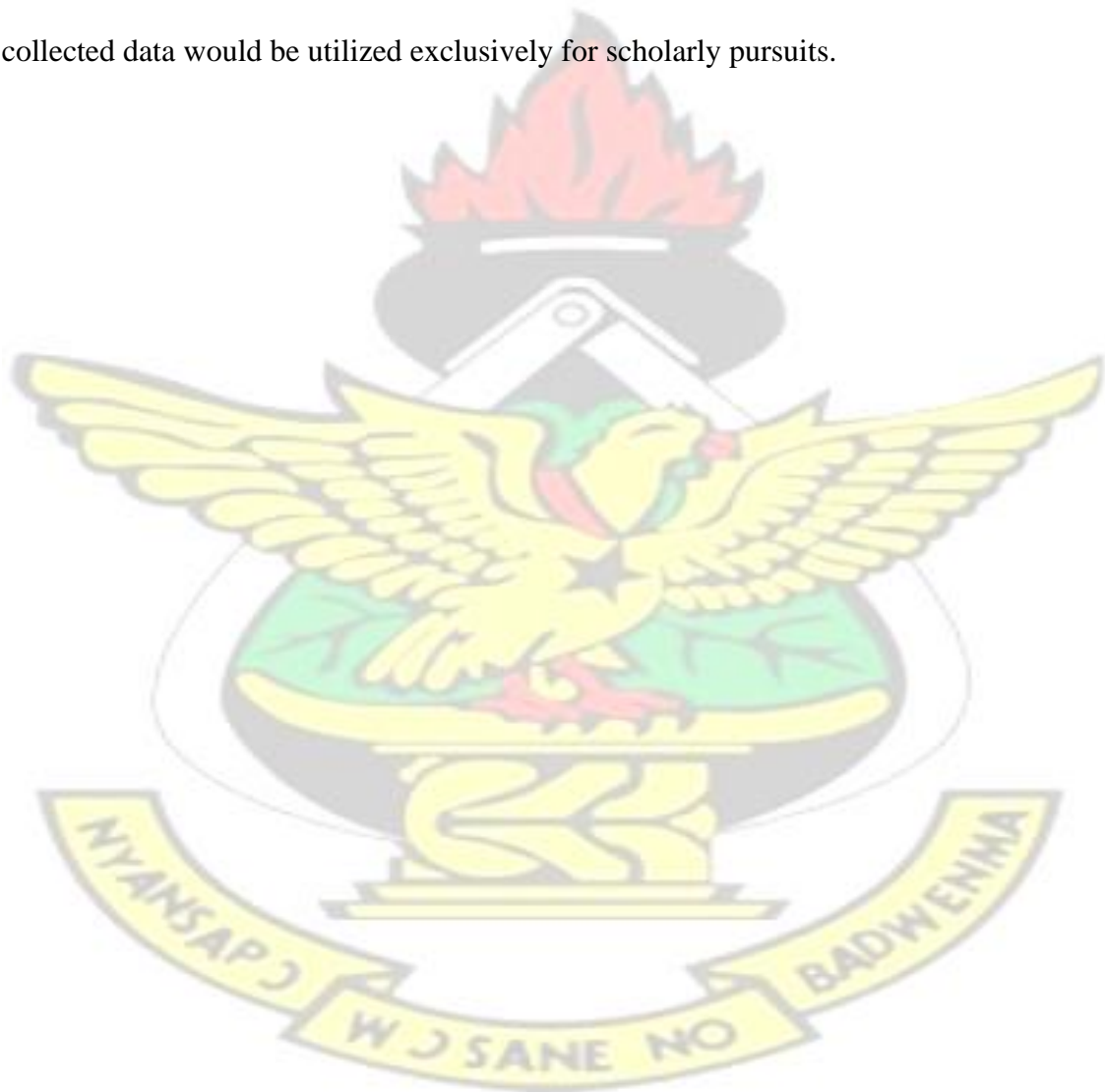
CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.0 Introduction

This chapter presents the results and discussions of the study Assessing the Effect of Inventory Management on Service Delivery at the Electricity Company of Ghana Limited. The chapter is arranged as follows: This section 4.1 presents the preliminary analyses of data; section 4.2 presents the descriptive statistics results; section 4.3 presents the reliability and validity test; section 4.4 presents the correlation matrix; section 4.5 presents the regression analysis; and finally, section 4.6 presents the discussions of findings.

4.1 Preliminary Analyses of Data

The demographic information for the study is presented in Table 4.1. In relation to gender, the data revealed that the predominant portion of participants identified as females, constituting 63.6% (159 respondents) of the overall sample, whereas males accounted for 36.4% (91 respondents). The analysis of the age distribution reveals that the most prevalent age category among the participants was individuals between the ages of 5 and 10 years, constituting 28.0% (70 respondents). Subsequently, the demographic group consisting of individuals between the ages of 10 and 20 years accounted for 18.8% of the sample size, with 47 respondents. Similarly, the age group encompassing individuals aged 3 to 5 years constituted 17.2% of the sample size, with 43 respondents. The sample consisted of 52 respondents, or 20.8%, who were under the age of 3, while 38 respondents, or 15.2%, were over the age of 20. According to the data on education distribution, it is evident that the most prevalent level of educational achievement among the respondents was a master's degree, accounting for 40.8% (102

respondents). The respondents who possessed bachelor's degrees accounted for 29.2% (73 individuals), while those with qualifications surpassing master's degrees constituted 26.0% (65 individuals). A minority of participants, specifically 4.0% (10 individuals), possessed educational credentials that fell below the level of a bachelor's degree. Regarding the participants' positions, the prevailing position among respondents was that of a procurement officer, accounting for 52.8% (132 respondents) of the sample. The distribution of supply chain managers and warehouse managers was generally balanced, with 18.8% (47 respondents) and 16.8% (42 respondents), respectively. The jobs of risk manager and operations manager were the least commonly reported among the respondents, accounting for 4.8% (12 respondents) and 6.8% (17 respondents) of the total sample, respectively. Based on the provided demographic information, it can be inferred that the sample exhibits diversity in terms of age and education. Nevertheless, there exists a notable gender bias towards females, with a conspicuous prevalence of procurement officials occupying positions of authority.

Table 4.1 Respondent's Demographic Information

	Frequency	Percent
Gender		
Female	159	63.6
Male	91	36.4
Age		
Less than 3 years	52	20.8
3 to 5 years	43	17.2
5 to 10 years	70	28.0
10 to 20 years	47	18.8
More than 20 years	38	15.2
Education		

Above master's degrees	65	26.0
Bachelor's degrees	73	29.2
Below bachelor's degrees	10	4.0
Master's degrees	102	40.8
Position		
Operations Manager	17	6.8
Procurement Officer	132	52.8
Risk Manager	12	4.8
Supply chain manager	47	18.8
Warehouse Manager	42	16.8

4.2 Descriptive Statistics Results

This section presents the descriptive statistics results of the various variables covered in this study using means, standard deviation values.

4.2.1 Descriptive Statistics Results for Economic Order Quantity

Tables 4.2 Descriptive Statistics Results for Economic Order Quantity

Items	Mean	Std. Dev
Our firm inventory management is organized in a logical way they know when to order and how much to order.	4.52	0.641
Our firm plans their inventory replenishment on a timely basis.	4.52	0.695
Our firm minimizes storage costs by use of EOQ.	4.47	0.647
Our firm reduces the cost of inventory management by use of EOQ.	4.57	0.686
Our firm reduces wastages of inventory by use of EOQ.	4.49	0.675
Our firm ensures that inventory supply does not hit stock outs.	4.52	0.735
Our firm clearly forecasts hence making inventory available.	4.54	0.677

Table 4.2 displays the average values and standard deviations for several statements pertaining to the implementation and efficacy of economic order quantity (EOQ) within the enterprises under investigation. The firm's inventory management system is characterised by a well-structured approach, wherein they possess the knowledge and

capability to determine the appropriate timing and quantity for placing orders. The average value for this statement is 4.52, with a standard deviation of 0.641. This finding suggests that the majority of participants are in general agreement with the given statement, and there is a relatively small amount of variation in their responses. Additionally, our organisation strategically schedules the replenishment of inventories in a timely manner. Based on the data collected, it can be inferred that respondents usually hold a consensus regarding the timely execution of inventory replenishments by their respective firms, as indicated by a mean value of 4.52 and a standard deviation of 0.695. The standard deviation indicates a comparable degree of variability around the mean as the preceding element. The company used the economic order quantity (EOQ) model to effectively reduce storage expenses. The average response to this statement is 4.47, with a standard deviation of 0.647. This suggests a prevailing consensus among participants that enterprises employ the Economic Order Quantity (EOQ) method to reduce storage expenses. Furthermore, the responses exhibit a reasonable level of consistency. Additionally, the organisation effectively mitigates inventory management expenses through the implementation of the Economic Order Quantity (EOQ) model. The aforementioned statement obtained an average value of 4.57 with a standard deviation of 0.686. The data collected from the respondents indicates a significant belief among them that their respective organisations are successful in reducing inventory management expenses through the use of the Economic Order Quantity (EOQ) model. In addition, the implementation of the Economic Order Quantity (EOQ) method effectively mitigates inventory waste. The obtained mean score of 4.49, along with a standard deviation of 0.675, suggests a prevailing consensus among the participants that the implementation of the Economic Order Quantity (EOQ) methodology is effective in mitigating inventory waste. The company implements

measures to prevent inventory shortages. The calculated mean value in this context is 4.52, accompanied by a standard deviation of 0.735. The findings indicate that the participants usually perceive their respective organisations as effectively mitigating stockouts through their inventory management strategies. However, it is worth noting that there is somewhat greater variability in the replies compared to the other assertions. Ultimately, the company effectively predicts future demand, thereby ensuring the availability of inventories. Based on the data collected, it can be observed that respondents typically have a favourable perception regarding the effectiveness of their firms' forecasting practices in ensuring the availability of inventory. This is indicated by a mean score of 4.54 and a standard deviation of 0.677. In summary, the findings of the descriptive statistics indicate that the majority of participants hold the view that EOQ is an effective approach to managing their inventory. The average values for all assertions surpass the midway point (assuming a scale of 1–5), suggesting a favourable perception. The standard deviations, which are all less than 1 for each item, suggest that the responses were rather consistent and did not exhibit a significant departure from the mean.

4.2.2 Descriptive Statistics Results for Re-order level

Tables 4.3 Descriptive Statistics Results for Re-order level

Items	Mean	Std. Dev
Our firm understands their re-order levels.	4.58	0.599
Our firm knows when to order and when not to order.	4.58	0.605
Our The firm reduces lead time by use of re-order level.	4.53	0.745
Our firm reduces cost of inventory management by use of re-order level.	4.59	0.590
Our firm reduces wastages by use of re-order level.	4.63	0.584
Our firm knows when to order and when not by use of re-order level.	4.65	0.562
Our firm achieves optimal efficiency by use of re-order level.	4.56	0.688

Table 4.3 presents the average values and standard deviations for several assertions pertaining to the implementation and benefits of the re-order level within the firms of the participants. The organisation possesses a comprehensive understanding of its reorder levels. Based on the statistical analysis, it can be seen that a significant proportion of participants hold the viewpoint that their respective organisations possess a full grasp of re-order levels. This conclusion is supported by the mean value of 4.58 and the standard deviation of 0.599. The comparatively small standard deviation suggests a high level of consistency in the agreement among the respondents. The average value for this statement is 4.58, accompanied by a standard deviation of 0.605, which provides further support for the notion that companies exhibit a high level of confidence in their re-ordering decisions. The responses exhibit a similar level of consistency as the initial statement. Based on the obtained mean score of 4.53 and a standard deviation of 0.745, it can be inferred that a majority of the respondents hold a favourable opinion regarding the effectiveness of utilising re-order levels in mitigating lead times. Nevertheless, the marginally elevated standard deviation suggests a greater range of responses in comparison to the preceding questions. The given statement exhibits a mean value of 4.59 and a standard deviation of 0.590. This finding indicates that a significant number of participants hold the belief that re-order levels play a crucial role in mitigating expenses associated with inventory management. The responses exhibit a notable concentration around the average value. The majority of the participants expressed agreement with this statement, as evidenced by a mean score of 4.63 and a standard deviation of 0.584. The results suggest that the utilisation of reorder levels is seen as an effective strategy for waste reduction. The aforementioned statement documents the maximum average value of 4.65, accompanied by a standard deviation of 0.562. This finding highlights the high degree of trust expressed by

participants regarding the effectiveness of re-order levels in guiding ordering decisions, as evidenced by the consistent responses provided. Based on the data provided, it is apparent that a considerable proportion of participants hold the belief that re-order levels play a crucial role in attaining optimal efficiency within the realm of inventory management. Nevertheless, the replies to this statement exhibit a significantly greater degree of variability compared to certain other statements. In conclusion, the findings highlight the favourable impression of the participants about the significance of re-order levels in their inventory management ractices. The average scores for all assertions are much higher than the midpoint of the scale (ranging from 1 to 5), indicating a great level of agreement. The standard deviations of the replies were all less than 1, suggesting a high level of consistency. However, it should be noted that certain items did result in slightly greater variability in the reactions received.

4.2.3 Descriptive Statistics Results for Just-in-time

Tables 4.4 Descriptive Statistics Results for Just-in-time

Items	Mean	Std. Dev
Our firm reduces inventory levels.	4.49	0.729
Our firms' items desired arrives just in time for use.	4.46	0.686
Our firm does not have tolerance for late or early deliveries.	4.52	0.635
Our firm maintains first enough material at just the right time in just the right place to make just the right amount of product.	4.54	0.608
Our firm coordinates movement of Inventory by use of JIT.	4.50	0.751
Our firm matches demand and supply by use of JIT.	4.55	0.620
Our firm saves cost of inventory management by use of JIT.	4.51	0.724
Our firm reduce warehousing space by use of JIT.	4.53	0.683

The description of just-in-Time is provided in Table 4.4. The findings indicate that the participants generally express consensus regarding the reduction of inventory levels by their respective organisations, as evidenced by a mean score of 4.49 out of 5. A

standard deviation of 0.729 suggests the presence of a modest level of variability in the replies. The general consensus on the timeliness of item arrivals is predominantly favourable, as evidenced by an average rating of 4.46. The observed dispersion of the replies (0.686) suggests a moderate level of concurrence among the participants. The participants exhibit a high level of consensus, as evidenced by an average rating of 4.52, which suggests that their respective organisations maintain a strict policy against both late and early delivery. The observed low standard deviation indicates a high level of consistency in the collected replies. The findings indicate a significant consensus among participants about the efficient management of resources inside their respective organisations, as evidenced by a notable mean score of 4.54. The observed spread value of 0.608 indicates a high level of constant agreement on this particular element. Based on an average score of 4.50, there exists a prevailing good view towards the use of just-in-time (JIT) methodology by enterprises for the purpose of coordinating inventory movement. Nevertheless, it is worth noting that the table exhibits a relatively large standard deviation, indicating a certain degree of variability in the collected replies. The data indicates a high level of agreement among respondents, as evidenced by a mean score of 4.55, regarding the utilisation of just-in-time (JIT) practices by their respective organisations to effectively align demand and supply. The calculated standard deviation of 0.620 suggests a notable level of agreement among the participants in the study. The findings demonstrate a consensus among participants that organisations are able to achieve cost savings in inventory management through the use of just-in-time (JIT) practices, as indicated by the mean score of 4.51. The standard deviation demonstrates the presence of moderate variability in the replies. Based on the calculated mean score of 4.53, it may be inferred that the respondents have a prevailing belief that their respective organisations effectively minimise storage space through the implementation

of just-in-time (JIT) practices. The belief exhibits a reasonably high level of consistency, as indicated by the standard deviation of 0.683. In general, the descriptive statistics reveal a significant consensus among participants in support of the benefits associated with the Just-in-Time (JIT) methodology. This is evident as the average scores surpass 4.5 on a 5-point scale. The standard deviations, albeit exhibiting variability, consistently remain below 1, indicating a rather high level of uniformity in answers across the various just-in-time (JIT) practices.

4.2.4 Descriptive Statistics Results for Activity Based Costing

Tables 4.5 Descriptive Statistics Results for Activity Based Costing

Items	Mean	Std. Dev
Our firm allocates time and money in inventory by use of ABC.	4.53	0.615
Our firm determines the importance of items by use of ABC.	4.50	0.696
Our firm determines the control level placed on the items by use of ABC.	4.38	0.794

Table 4.5 presents a comprehensive overview of the descriptive statistics pertaining to the investigation. The findings indicate that the participants generally express consensus with their organisation's utilisation of activity-based costing (ABC) to allocate resources, including both time and financial resources, to inventory management. This is evident from the mean score of 4.53 out of 5 obtained in the survey. A standard deviation of 0.615 indicates a high level of agreement among respondents, suggesting a consistent pattern in their responses. The respondents have shown a favourable feeling regarding the firm's capacity to ascertain the significance of items through the use of ABC, as indicated by the mean score of 4.50. The observed standard deviation of 0.696 suggests a moderate level of variability in the responses. This implies that while there is a general consensus among most respondents, there remains a certain degree of dispersion in their perspectives. Based on the mean score, it

54

can be inferred that the participants generally hold the belief that their respective organisations employ activity-based costing (ABC) as a means to establish the level of control imposed on various things. However, it is worth noting that this level of agreement is slightly weaker compared to other items, as indicated by a score of 4.38. The table exhibits a maximum standard deviation of 0.794, indicating a greater level of variability in the replies for this item relative to others. This suggests that there is a wide range of perspectives among the respondents regarding this specific topic. In general, the findings derived from the analysis of descriptive statistics indicate a positive perception among survey participants about the implementation of activity-based costing (ABC) inside their individual organisations. The mean scores for all variables surpass 4, suggesting a consensus regarding the efficacy of ABC in many aspects of inventory management and control. Nevertheless, the standard deviations, notably in relation to the third item, indicate a greater level of heterogeneity in individuals' perspectives regarding certain aspects of ABC application, particularly in the context of defining control levels on items.

4.2.5 Descriptive Statistics Results for Customer Satisfaction

Tables 4.6 Descriptive Statistics Results for Customer Satisfaction

Items	Mean	Std. Dev
Our firm offer pleasurable customer experience.	4.42	0.803
Our firm offer pleasurable customer experience.	4.48	0.701
Our firm offer poor customer experience.	4.50	0.635
Our firm fulfill the needs and wants of our customers.	4.50	0.690

Table 4.6 presents a comprehensive examination of customer satisfaction using a descriptive analysis. The findings indicate that a significant proportion of participants are in agreement about the provision of a satisfactory customer experience by their

respective organisation, as evidenced by an average rating of 4.42 out of 5. A standard deviation of 0.803 indicates a moderate level of diversity in the replies, implying that although a majority of individuals agree with this emotion, there are some who have differing opinions. The data indicates that respondents generally hold a positive perception of their firm's capability to provide a satisfactory customer experience, as evidenced by the slightly elevated mean score of 4.48. Based on the calculated standard deviation of 0.701, it can be inferred that the level of agreement among respondents exhibits a modest degree of consistency. The obtained outcome exhibits a degree of contradiction. A mean score of 4.50, which is rather high, implies that the respondents are inclined to agree with the statement, reflecting their perception that their organisation provides a subpar customer experience. However, given the contextual factors and the presence of other variables, it is plausible that the scale used in this particular question may have been reversed or that respondents may have misinterpreted its intended meaning. The observed standard deviation of 0.635 suggests a relatively low level of variability in the responses provided by the participants. The findings indicate that a significant proportion of participants concur that their organisation effectively fulfils the demands and desires of its clientele, as demonstrated by the mean rating of 4.50. A standard deviation of 0.690 indicates a moderate level of consistency in this viewpoint among the participants. In general, the data indicates that the participants hold the belief that their respective organisations offer customer experiences that are either adequate or surpass expectations. Nevertheless, the unexpectedly elevated average score of the third question raises a noteworthy discrepancy that warrants additional scrutiny or elucidation, as it seemingly contradicts the attitude conveyed by the remaining items. Ensuring clarity and consistency in the

scale employed for this item is crucial in order to appropriately interpret the obtained results.

4.3 Reliability and Validity Test

4.3.1 Validity and reliability results for Economic Order Quantity

Table 4.7 EFA on Economic Order Quantity

Items	Loading
Our firm inventory management is organized in a logical way they know when to order and how much to order.	0.795
Our firm plans their inventory replenishment on a timely basis.	0.749
Our firm minimizes storage costs by use of EOQ.	0.834
Our firm reduces the cost of inventory management by use of EOQ.	0.746
Our firm reduces wastages of inventory by use of EOQ.	0.807
Our firm ensures that inventory supply does not hit stock outs.	0.840
Our firm clearly forecasts hence making inventory available.	0.830
Cronbach Alpha	0.906
Eigenvalue	4.490
% of Variance	64.149
KMO=0.844; χ^2=1101.927; df=21; p-value=0.000	

Table 4.7 presents the EFA for Economic Order Quantity (EOQ). The results reveal that all the items have factor loadings above 0.7, indicating strong correlations with the underlying latent variable, suggesting these items are good indicators of EOQ. A Cronbach's alpha value of 0.906 indicates excellent internal consistency and reliability of the scale used to measure EOQ. The extracted factor explains 64.149% of the variance in the data, which is relatively high, signifying that the factor captures a significant portion of the information related to EOQ. A KMO value of 0.844 suggests the sample size was adequate. With a χ^2 of 1101.927, a df of 21, and a p-value of 0.000, the test is significant, indicating that the data is suitable for factor analysis.

Overall, the EFA results for EOQ demonstrate that the items are relevant, the scale is reliable, and the data is suitable for factor analysis, reinforcing the construct validity and reliability of the EOQ measurement.

4.3.2 Validity and reliability results for Re-order level

Table 4.8 EFA on Re-order level

Items	Loading
Our firm understands their re-order levels.	0.779
Our firm knows when to order and when not to order.	0.694
Our The firm reduces lead time by use of re-order level.	0.751
Our firm reduces cost of inventory management by use of re-order level.	0.710
Our firm reduces wastages by use of re-order level.	0.725
Our firm knows when to order and when not by use of re-order level.	0.783
Our firm achieves optimal efficiency by use of re-order level.	0.773
Cronbach Alpha	0.864
Eigenvalue	3.895
% of Variance	55.646
KMO=0.840; χ^2=708.684; df=21; p-value=0.000	

Table 4.8 presents the EFA results for the re-order level. The results reveal that all the items possess factor loadings above 0.6, signalling strong correlations with the underlying latent construct related to the re-order level. The Cronbach's alpha value stands at 0.864, denoting good internal consistency of the scale used for measuring the re-order level. The extracted factor elucidates 55.646% of the total variance in the dataset. This suggests the factor significantly represents the information concerning the re-order level. A KMO measure of 0.840 indicates that the sample was sufficiently adequate for conducting the EFA. The test is significant with a χ^2 value of 708.684, a df of 21, and a p-value of 0.000, revealing that the dataset is fitting for factor analysis.

In summary, the EFA results for the Re-order Level confirm that the items are suitably representative, the measurement scale exhibits reliability, and the dataset is apt for factor analysis. This lends support to the construct's validity and reliability in the context of the re-order level.

4.3.3 Validity and reliability results for Just-in-time

Table 4.9 EFA on Just-in-time

Items	Loading
Our firm reduces inventory levels.	0.841
Our firms' items desired arrives just in time for use.	0.872
Our firm does not have tolerance for late or early deliveries.	0.790
Our firm maintains first enough material at just the right time in just the right place to make just the right amount of product.	0.857
Our firm coordinates movement of Inventory by use of JIT.	0.841
Our firm matches demand and supply by use of JIT.	0.796
Our firm saves cost of inventory management by use of JIT.	0.755
Our firm reduce warehousing space by use of JIT.	0.752
Cronbach Alpha	0.926
Eigenvalue	5.304
% of Variance	66.298
KMO=0.903; χ^2=1455.545; df=28; p-value=0.000	

Table 4.9 presents the EFA results for JIT. The results reveal that all the items have factor loadings above 0.7, showcasing strong correlations with the underlying JIT construct. The Cronbach's alpha of 0.926 suggests excellent internal consistency within the scale used to measure JIT, reinforcing its reliability. The identified factor accounts for 66.298% of the total variance, indicating the factor comprehensively captures the JIT-related variance within the dataset. With a KMO value of 0.903, the sample's adequacy for the EFA is evident, being well above the commonly accepted threshold. A

$\chi^\wedge2$ of 1455.545, df of 28, and p-value of 0.000 confirm the data's appropriateness for factor analysis. In conclusion, the EFA results for JIT highlight the relevance of the items, the robust reliability of the scale, and the suitability of the data for factor analysis. These results bolster the validity and reliability of the JIT construct in this study.

4.3.4 Validity and reliability results for Activity based Costing

Table 4.10 EFA on Activity based Costing

Items	Loading
Our firm allocates time and money in inventory by use of ABC.	0.834
Our firm determines the importance of items by use of ABC.	0.877
Our firm determines the control level placed on the items by use of ABC.	0.811
Cronbach Alpha	0.785
Eigenvalue	2.122
% of Variance	70.746
KMO=0.690; χ^2=229.623; df=3; p-value=0.000	

Table 4.10 presents the EFA results for ABC. The results reveal that all the items present strong factor loadings above 0.8, underscoring robust correlations with the underlying ABC construct. A Cronbach's alpha value of 0.785 indicates satisfactory internal consistency for the scale measuring ABC, suggesting the items reliably measure the same underlying construct. The extracted factor explains a substantial 70.746% of the total variance, signifying that the factor effectively represents the majority of information related to ABC in the dataset. A KMO value of 0.690, while slightly lower than ideal, still demonstrates the fair adequacy of the sample for the EFA. With a $\chi^\wedge2$ value of 229.623, a df of 3, and a p-value of 0.000, the test is significant, indicating the data's suitability for factor analysis. To sum up, the EFA

results for ABC illustrate that the items are aptly representative, the measurement scale is reasonably reliable, and the data is suitable for factor analysis. The findings lend support to the construct's validity and reliability in relation to activity-based costing.

4.3.5 Validity and Reliability Results for Activity Based Costing

Table 4.11 EFA on Customer Satisfaction

Items	Loading
Our firm offer pleasurable customer experience.	0.855
Our firm offer pleasurable customer experience.	0.853
Our firm offer poor customer experience.	0.901
Our firm fulfill the needs and wants of our customers.	0.883
Cronbach Alpha	0.892
Eigenvalue	3.049
% of Variance	76.216
KMO=0.807; χ^2=616.176; df=3; p-value=0.000	

Table 4.11 presents the EFA results for customer satisfaction. The results reveal that all items exhibit strong factor loadings above 0.85, emphasising their significant correlations with the underlying construct of customer satisfaction. The Cronbach's alpha stands at 0.892, reflecting a high level of internal consistency within the scale measuring customer satisfaction. The extracted factor accounts for a robust 76.216% of the total variance, signifying that this factor effectively captures the bulk of the information related to customer satisfaction in the dataset. The KMO value of 0.807 suggests a suitable adequacy of the sample for the EFA. With a χ^2 value of 616.176, a df of 3, and a p-value of 0.000, the test is significant, reinforcing the data's appropriateness for factor analysis. In conclusion, the EFA results for customer satisfaction confirm the relevance of the items, the strong reliability of the scale, and

the data's aptness for factor analysis. The findings bolster the construct's validity and reliability in assessing customer satisfaction. It is also worth noting that there seems to be a repetition in the items referring to "pleasurable customer experience," which may need attention in future analyses.

4.4. Correlation Matrix

Table 4.12: Correlation Matrix

	EOQ	ROL	JIT	ABC	CUS
EOQ	1				
ROL	0.792** 0.000	1			
JIT	0.884** 0.000	0.789** 0.000	1		
ABC	0.731** 0.000	0.776** 0.000	0.844** 0.000	1	
CUS	0.567** 0.000	0.615** 0.000	0.617** 0.000	0.724** 0.000	1

Note: **. Correlation is significant at the 0.01 level (2-tailed). EOQ= Economic Order Quantity; ROL= Re-order level; JIT= Just-in-time, ABC= Activity Based Costing; CUS = Customer Satisfaction.

The correlation matrix showcases the pairwise relationships between the variables. EOQ has a very strong positive correlation with JIT (0.884), and EOQ has a strong positive correlation with ROL (0.792) and ABC (0.731). EOQ has a moderately positive correlation with CUS (0.567). ROL shows strong positive correlations with ABC (0.776) and JIT (0.789). ROL also has a moderately positive relationship with CUS (0.615). JIT has a very strong positive correlation with ABC (0.844). JIT and CUS share a moderately positive correlation of 0.617. ABC has a strong positive correlation with CUS (0.724). All correlations are significant at the 0.01 level, implying these relationships are statistically significant. It is also worth noting that the

relationships are positive, meaning that as one variable increases, the other tends to increase as well.

4.5 Regression Analysis

4.5.1 The Impact of Economic Order Quantity on Customer Satisfaction

Table 4.13 The Impact of Economic Order Quantity on Customer Satisfaction

	Customer Satisfaction		P-value	VIF
	Beta	t-value		
Economic Order Quantity	0.567	10.758	0.000	1.000
Model Indices				
R		0.567		
R Square		0.322		
F-statistics		115.741		

Note: Author Own Construction (2023). significant at P-value = 0.05

Table 4.13 above shows the relationship between the economic order quantity (EOQ) and customer satisfaction. The R value is 0.567, indicating a moderately positive linear association between EOQ and customer satisfaction. The R-square value is 0.322. This means that the model accounts for 32.2% of the variation in customer satisfaction based on EOQ. The F-statistic is 115.741, which suggests that the model is statistically significant and fits the data well. The VIF for EOQ is 1.000. A VIF value less than 5 is generally considered acceptable, indicating that multicollinearity is not a concern in this model. Per the result, the beta coefficient for EOQ is 0.567. This indicates that for a one-unit increase in EOQ, customer satisfaction is predicted to increase by 0.567 units, holding all else constant. The t-value for EOQ is 10.758, and the corresponding p-value is 0.000. As this p-value is below the significance level of 0.05, it denotes that EOQ has a statistically significant effect on customer satisfaction. To sum up, the regression

analysis reveals that the economic order quantity (EOQ) has a substantial and positive influence on customer satisfaction.

4.5.2 The Effect of Variable Demand (Re-Order) On Customer Satisfaction

Table 4.14 The Effect of Variable Demand (Re-Order) On Customer Satisfaction

	Customer Satisfaction		P-value	
	Beta	**t-value**		**VIF**
Re-order level	0.615	12.042	0.000	1.000
Model Indices				
R		0.615		
R Square		0.378		
F-statistics		145.019		

Note: Author Own Construction (2023). significant at P-value = 0.05

Table 4.14 show the analysis determines the influence of the Re-order level (variable demand) on Customer Satisfaction. The R is 0.615, signifying a substantial positive linear relationship between the Re-order level and Customer Satisfaction. The R Square value is 0.378. This implies that the model explains 37.8% of the variance in Customer Satisfaction using the Re-order level. An F-statistics value of 145.019 confirms the model's statistical significance, indicating that it aptly fits the observed data. The VIF for the Re-order level is 1.000. Given that a VIF value below 5 is typically seen as satisfactory, it's clear that multicollinearity is not problematic in this model. Per the result the beta coefficient for the Re-order level is 0.615. This suggests that for every one-unit increase in the Re-order level, there's an anticipated rise of 0.615 units in Customer Satisfaction, while other factors are held constant. With a t-value of 12.042 and a p-value of 0.000 (which is less than the significance threshold of 0.05), the effect

of the Re-order level on Customer Satisfaction is statistically significant. In summary, the analysis establishes that the Re-order level has a significant and positive effect on Customer Satisfaction.

4.5.3 The Effect of Just-in-time on Customer Satisfaction

Table 4.15 The Effect of Just-in-time on Customer Satisfaction

	Customer Satisfaction		P-vale	VIF
	Beta	t-value		
Just-in-time	0.617	12.261	0.000	1.000
Model Indices				
R		0.617		
R Square		0.381		
F-statistics		150.339		

Note: Author Own Construction (2023). significant at P-value = 0.05

Table 4.15 above shows the impact of the just-in-time (JIT) system on customer satisfaction. The R (correlation coefficient) value is 0.617, suggesting a strong positive linear relationship between JIT and customer satisfaction. The R square value is 0.381, meaning that approximately 38.1% of the variability in customer satisfaction can be explained by the JIT system. The F-statistics value is 150.339, which demonstrates that the model is statistically significant and provides a good fit to the observed data. The VIF for JIT is 1.000. As this value is below the usual threshold of 5, it suggests that multicollinearity isn't a concern for this regression model. The beta coefficient for JIT stands at 0.617. This implies that for every unitary increase in the use of JIT, there's an associated increase of 0.617 units in customer satisfaction, holding other factors constant. The t-value for JIT is 12.261, and the associated p-value is 0.000. Given that this p-value is below the 0.05 significance level, it indicates that the impact of JIT on

customer satisfaction is statistically significant. In conclusion, the analysis reveals that the just-in-time system significantly and positively impacts customer satisfaction.

4.5.4 The Effect of ABC Analysis on Customer Satisfaction

Table 4.16 The Effect of ABC Analysis on Customer Satisfaction

	Customer Satisfaction		P-value	VIF
	Beta	**t-vale**		
Activity Based Costing	0.724	16.552	0.000	1.000
Model Indices				
R		0.724		
R Square		0.525		
F-statistics		273.970		

Note: Author Own Construction (2023). significant at P-value = 0.05

Table 4.16 shows the influence of activity-based costing (ABC) analysis on customer satisfaction: The R value is 0.724, indicating a strong positive linear relationship between ABC Analysis and customer satisfaction. The R-square value is 0.525. This denotes that the model explains 52.5% of the variability in customer satisfaction using ABC analysis. The F-statistics value of 273.970 showcases the overall significance of the model, establishing that it provides a good fit for the data at hand. The variance inflation factor (VIF) for ABC analysis is 1.000. Given that a VIF value below 5 is generally considered acceptable, there's no significant concern about multicollinearity in this model. The beta coefficient for ABC is 0.724. This suggests that for every one-unit increment in ABC analysis, there is a corresponding increase of 0.724 units in customer satisfaction while holding other variables constant. With a t-value of 16.552 and a p-value of 0.000 (which is below the 0.05 significance threshold), this confirms the effect of ABC analysis on customer satisfaction is statistically significant. To

summarise, the analysis establishes that activity-based costing analysis has a pronounced and positive effect on customer satisfaction.

Hypothesis

H1: Just-in-time has a positive impact on Customer satisfaction.

H2: Re-order level has a positive impact on Customer satisfaction.

H3: Economic Order Quantity has a positive impact on Customer satisfaction.

H4: Activity based Costing has a positive impact on Customer satisfaction.

Table 4.17 Summary of Hypotheses Testing

Hypothesized Path	Beta	T-value	P-values	Decisions
H1: Just-in-time has a positive impact on Customer satisfaction.	0.567	10.758	0.000	Supported
H2: Re-order level has a positive impact on Customer satisfaction.	0.615	12.042	0.000	Supported
H3: Economic Order Quantity has a positive impact on Customer satisfaction.	0.617	12.261	0.000	Supported
H4: Activity based Costing has a positive impact on Customer satisfaction.	0.724	16.552	0.000	Supported

4.6 Discussions of Findings

4.6.1 The Impact of Economic Order Quantity on Customer Satisfaction

The findings of the current study, which suggest that the Economic Order Quantity (EOQ) has a substantial and favourable impact on customer satisfaction, contribute a crucial aspect to the continuing academic conversation. The outcomes of this study indicate that the economic order quantity (EOQ) has a notable impact on customer satisfaction. These results imply that, by achieving operational efficiencies through optimal ordering, businesses can directly enhance the experiences of their customers. This finding aligns with the research conducted by Nahmias and Olsen (2015), who

argued that the implementation of effective operational practices consistently results in reliable service provision, hence minimising the occurrence of stockouts and guaranteeing punctual delivery to clients. Adherence to the Economic Order Quantity (EOQ) model has a notable effect in terms of potentially decreasing occurrences of stockouts. Stockouts have consistently been recognised as a significant factor contributing to customer discontent (Zinn & Liu, 2008). When firms engage in optimal ordering practices, they are able to not only cut expenses but also guarantee the availability of their products.

In addition to its immediate operational advantages, the adoption of the Economic Order Quantity (EOQ) model might unwittingly shape client attitudes. Kumar and Grisaffe (2004) conducted a study that explores the intricate connection between a company's financial well-being and the loyalty of its customers. Firms that possess financial stability are more effectively positioned to allocate resources towards customer service, research and development, and other endeavours that have a direct or indirect impact on consumer happiness. By strategically determining the most efficient order sizes, companies can improve their financial well-being, ultimately leading to improved customer experiences. The study's findings demonstrate a clear positive correlation between EOQ and customer satisfaction. However, it is crucial to acknowledge the inherent limits of the EOQ methodology. According to Axsäter (2006), scholars have pointed out that the economic order quantity (EOQ) may oversimplify issues, particularly in industries characterised by changing needs or disruptions in the supply chain.

In certain circumstances, unquestioning adherence to the Economic Order Quantity (EOQ) model may not result in the anticipated enhancement of customer satisfaction. Therefore, it is imperative for firms to incorporate the Economic Order Quantity (EOQ) model in conjunction with other demand forecasting methodologies in order to maintain a steady level of customer satisfaction. The strategic implications of the findings can't be understated. In an era where customer satisfaction is invariably linked to business survival and growth, inventory management techniques like EOQ serve a dual purpose. They not only ensure operational and financial efficiency but also act as a linchpin in driving customer loyalty and satisfaction. As noted by Heskett et al. (1997), satisfied customers often translate into repeat business, positive word of mouth, and long-term profitability.

4.6.2 The Effect of Variable Demand (Re-Order) On Customer Satisfaction

The present analysis provides empirical evidence supporting the notion that the Rule of Law (ROL) exerts a significant and favourable impact on consumer satisfaction. The establishment of a reorder level (ROL) serves the purpose of determining the stock level at which it becomes necessary to initiate a new order. This strategic approach effectively incorporates a buffer, thereby minimising the potential risks associated with stockouts (Silver, Pyke, & Peterson, 1998). The consistent availability of items is an immediate result of adopting a proactive approach. According to the findings of Cachon and Terwiesch (2014), there exists a positive relationship between the reliability of product availability and the level of customer happiness. This is due to the fact that customers are more content when they can rely on consistently obtaining the desired products in a timely manner. Stockouts have a negative impact on consumer satisfaction. The presence of unavailability-related issues has the potential to

discourage customers from engaging in subsequent purchases and may even result in the dissemination of unfavourable word-of-mouth (Zinn & Liu, 2008). By effectively executing a carefully planned return on investment (ROI), organisations have the potential to significantly decrease instances of stockouts. The implementation of a proactive replenishment strategy, guided by the concept of reorder level (ROL), serves to guarantee clients that products will be readily available, hence enhancing their satisfaction levels.

The act of avoiding excessive inventory levels results in a decrease in waste and a reduction in the costs associated with holding inventory. Conversely, the avoidance of stockouts mitigates the risk of missed sales opportunities. The achievement of a balanced financial state within an enterprise can indirectly impact consumer impressions. According to the research conducted by Anderson, Fornell, and Lehmann (1994), organisations that possess financial stability have the capacity to allocate resources towards improving customer experiences, resulting in increased levels of customer loyalty. The significance of the role of relationship orientation in influencing customer happiness has been widely acknowledged. However, it is crucial to acknowledge that relationship orientation is not a fixed construct. The need to adjust the Reorder Level (ROL) may arise due to variations in demand, disruptions in the supply chain, or larger macroeconomic influences (Axsäter, 2006). Organisations are required to maintain agility by consistently evaluating and modifying their return on loyalty (ROL) in order to assure the long-term pleasure of their customers. In addition to its operational significance, the concept of ROL (Rule of Law) carries strategic value. The correlation between customer pleasure and corporate growth, loyalty, and profitability is undeniable. Efficient management of the replenishment order lifecycle

not only guarantees the availability of products but also serves as an indication to customers that the firm is dependable and maintains consistent performance. According to the assertions made by Reichheld and Sasser (1990), the presence of reliability has the potential to foster consumer loyalty, resulting in long-term profitability.

4.6.3 The Effect of Just-In-Time System on Customer Satisfaction

The new investigation provides evidence supporting the notion that just-in-time (JIT) has a substantial and favourable influence on customer satisfaction. The fundamental characteristic of Just-in-Time (JIT) is its dedication to promptly addressing demands in real-time (Schonberger, 1982). In contrast to traditional systems that may prioritise large-scale purchases, Just-in-Time (JIT) relies on up-to-date data to replenish inventory. The prompt replenishment of inventory guarantees a consistent availability of desired products for clients, resulting in heightened levels of customer satisfaction. According to Fullerton and McWatters (2002), the implementation of a responsive supply chain, characterised by just-in-time (JIT) practices, consistently enhances customer experiences. The Just-in-Time (JIT) approach, as described by Krajewski, Ritzman, and Malhotra (2013), provides a harmonised resolution by effectively synchronising supply with demand, thereby promoting consumer contentment. The implementation of a well-executed Just-in-Time (JIT) system enhances operational efficiency. Firms have the capacity to optimise their operational expenses by lowering inventory holding costs, waste, and the risk of potential obsolescence. The operational efficiency mentioned has the potential to impact various aspects of a business, such as competitive pricing, frequent promotions, and improved customer service. According to Davis (1993), these factors can significantly contribute to increasing consumer satisfaction. The philosophical foundation that underlies Just-in-Time (JIT) extends

beyond the realm of inventory management. The concept encompasses a more extensive dedication to ongoing enhancement, frequently exemplified as Kaizen within the framework of Japanese management philosophy (Imai, 1986). The emphasis on continuous improvements in business operations leads organisations to consistently explore strategies for enhancing client experiences, hence strengthening the relationship between just-in-time (JIT) practices and increased customer satisfaction. The importance of just-in-time (JIT) in enhancing customer satisfaction is evident. However, it is crucial to analyse its prospective trajectory, particularly within the context of an evolving digitalized market environment. The potential to significantly enhance the precision of just-in-time (JIT) through the utilisation of artificial intelligence (AI) and predictive analytics is substantial. According to the findings of Gunasekaran, Patel, and Tirtiroglu (2001), the integration of technical improvements with Just-in-Time (JIT) methodology has the potential to enhance its influence on customer satisfaction.

4.6.4 The Effect of ABC Analysis on Customer Satisfaction

The findings of our new study reinforce the significant observation that the use of activity-based costing (ABC) analysis has a notable and favourable impact on customer satisfaction. This finding supports the current body of literature that highlights the importance and value of ABC analysis in improving customer satisfaction. The fundamental tenet of activity-based costing is to enhance the precision of overhead cost allocation to products or services by considering the real usage of resources, in contrast to conventional costing approaches that may employ more arbitrary ways of cost allocation (Kaplan & Anderson, 2007). Through this approach, organisations can enhance their ability to ascertain the precise expenses associated with certain products

or services. Consequently, this can result in the implementation of more competitive pricing strategies, more informed judgements regarding product and service combinations, and advancements in internal operational efficiencies. In the realm of customer satisfaction, the utilisation of activity-based costing (ABC) by enterprises enables them to achieve a higher degree of accuracy in aligning costs with the value delivered to the customer. According to Guilding, Drury, and Tayles (2005), there is a positive correlation between customers' perception of receiving good value and their degree of satisfaction. Furthermore, by attaining a more comprehensive comprehension of prices, organisations can enhance their decision-making process regarding the prioritisation or potential elimination of specific products or services. This approach guarantees that clients are exclusively presented with the most value-oriented alternatives.

Another advantage of ABC is its ability to identify and bring attention to ineffective or duplicative procedures within the company. Through the identification and eradication of these inefficiencies, organisations frequently have the ability to enhance the speed and quality of their product and service delivery, thereby augmenting consumer happiness (Cokins, 2001). This phenomenon is observable in various sectors, particularly in manufacturing, where precise allocation of costs plays a crucial role in enhancing the profitability of the organisation and ensuring the delivery of high-quality products to the final consumer. The utilisation of conventional pricing strategies frequently results in a dearth of transparency pertaining to the accurate assessment of the profitability of specific products or services. The presence of uncertainty in certain situations might result in corporations inadvertently subsidising less lucrative items using the profits generated from more lucrative ones, thereby giving rise to misguided

business strategies. The implementation of such tactics has the potential to reduce the overall value provided to the consumer, thereby having a detrimental effect on customer satisfaction (Cooper & Kaplan, 1991).

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of findings, conclusions, and recommendations on the topic Assessing the Effect of Inventory Management on Service Delivery. The chapter is arranged in four sections as follows: Section 5.1 presents the Summary of Findings; Section 5.2 presents the Conclusion; Section 5.3 presents the Policy Implications and Recommendations; and finally, Section 5.4 presents the Suggestions for Further Research.

5.1 Summary of Findings

business is making an effort to boost their efficiency while also lowering their production costs by implementing various inventory management strategies. If a company places a greater emphasis on inventory management, it will inevitably lead to improvements in the company's overall performance (Koumanakos, 2008). However, several earlier studies on inventory management in the manufacturing industry with little or no attention to the service industry. The purpose of this study was to investigating the relationship between effective inventory management and high levels

of customer satisfaction in the service sector. The study fundamentally provided answers to four questions which are: 1. What is the impact of the economic order quantity on customer satisfaction at the Electricity Company of Ghana Limited? 2. What is the effect of demand (re-order) on customer satisfaction at the Electricity Company of Ghana Limited? 3. What is the effect of Just-in-time system on customer satisfaction at the Electricity Company of Ghana Limited? 4. What is the effect of ABC analysis on customer satisfaction at the Electricity Company of Ghana Limited? Using a census survey approach 250 respondents participated in the study. The study's accessible population is delineated as the entirety of the Electricity Company of Ghana located in four specific regions, namely Bono, Bono East, Ahafo, and Ashanti Region. Structured questionnaire was the main instrument used to gather primary data. The study adopted regression approach to analyze the data and test the research hypotheses. The key findings from the study have been presented in sections 5.1.1 to 5.1.4

5.1.1 The Impact of Economic Order Quantity on Customer Satisfaction

The findings indicate that the beta coefficient for the economic order quantity (EOQ) is 0.567. This finding suggests that a higher EOQ (economic order quantity) is associated with a positive impact on customer satisfaction, with a predicted rise of 0.567 units for each one-unit increase in EOQ, while assuming that all other factors remain unchanged. The t-value for the economic order quantity (EOQ) is 10.758, and the associated p-value is 0.000. Given that the p-value is less than the predetermined significance level of 0.05, it may be concluded that the economic order quantity (EOQ) has a statistically significant impact on customer satisfaction. The results of the regression analysis indicate a significant and positive relationship between the economic order quantity (EOQ) and customer happiness.

4.5.2 The Effect of Variable Demand (Re-Order) On Customer Satisfaction

The findings indicate that the beta coefficient associated with the re-order level variable is 0.615. This implies that there is a positive relationship between the re-order level and customer happiness, with a coefficient of 0.615 while controlling for other variables. The statistical analysis reveals that the re-order level has a significant effect on customer satisfaction, as indicated by a t-value of 12.042 and a p-value of 0.000, which is below the predetermined significance threshold of 0.05. The investigation demonstrates that there is a notable and favourable impact of the re-order level on customer satisfaction.

4.5.3 The Effect of Just-in-time on Customer Satisfaction

The findings indicate that the beta coefficient for just-in-time (JIT) is 0.617. This suggests that there is a positive correlation between the implementation of just-in-time (JIT) methodology and customer satisfaction, with a coefficient of 0.617. It is important to note that this relationship holds true while controlling for other relevant factors. The t-value for Just-in-Time (JIT) is 12.261, and the corresponding p-value is 0.000. The obtained p-value, which is lower than the predetermined significance level of 0.05, suggests that there is a statistically meaningful relationship between Just-in-Time (JIT) implementation and customer satisfaction. The findings of the investigation indicate that the implementation of the just-in-time system has a substantial and favourable effect on customer satisfaction.

4.5.4 The Effect of ABC Analysis on Customer Satisfaction

The findings indicate that the beta coefficient for ABC is 0.724. This finding indicates that a one-unit increase in ABC analysis is associated with a 0.724-unit increase in customer satisfaction, while controlling for other variables. The obtained t-value of 16.552, along with a p-value of 0.000 (which falls below the predetermined significance level of 0.05), provides strong evidence to support the conclusion that there is a statistically significant influence of ABC analysis on customer satisfaction. The investigation demonstrates that the utilisation of activity-based costing analysis has a significant and favourable impact on customer satisfaction.

5.2 Conclusion

The findings of this study highlight the unmistakable connection between particular operational tactics and heightened levels of customer satisfaction. The utilisation and dependence on the economic order quantity (EOQ) not only optimise inventory management but also have a significant and favourable impact on customer satisfaction. This aligns with the idea that maintaining adequate inventory levels can effectively reduce the likelihood of stockouts, ensuring a consistent supply of products for consumers and ultimately enhancing their overall experience. Moreover, our research highlights the importance of the ordering level. Organisations can mitigate the negative consequences of stockouts or overstock situations by implementing a properly adjusted reorder level. The outcomes of our study demonstrate that prompt replenishment of inventory has a noteworthy and favourable impact on customer satisfaction. This supports the notion that customers highly appreciate the continuous availability and punctual delivery of products.

Similarly, the just-in-time (JIT) system, widely recognised for its effectiveness in production and inventory control, demonstrates a significant impact on customer satisfaction. The use of Just-in-Time (JIT) methodology has been well recognised for its effectiveness in reducing lead times, minimising waste, and facilitating a prompt reaction to market demands. These factors undoubtedly contribute significantly to enhancing customer satisfaction levels. In conclusion, our research has provided valuable insights into the significance of activity-based costing (ABC) analysis. ABC enables improved pricing strategies, resource allocation, and value delivery by providing a comprehensive and precise depiction of product and service prices. According to our study findings, it is evident that this factor has a significant and favourable impact on consumer satisfaction. In conclusion, the approaches and techniques that organisations employ in their business practices, such as inventory management and cost analysis, have a direct impact on the experiences and satisfaction levels of their consumers. The results of this study provide evidence for the complex relationship between operational efficiency and customer satisfaction, highlighting the significance of strategic operational choices in the pursuit of an exceptional customer experience.

5.3. Policy Implications and Recommendations

The study's comprehensive conclusions yield various policy implications that can provide guidance to companies in formulating their operational plans. The following suggestions are specifically designed to optimise the advantages of these operational strategies in order to improve customer satisfaction.

The association between EOQ and customer satisfaction shows that organisations should prioritise simplifying their inventory management to meet EOQ principles. It is

recommended that organisations engage in periodic evaluations of their economic order quantity (EOQ) computations in order to maintain alignment with evolving demand patterns, supplier conditions, and holding costs. It is imperative to provide comprehensive training to supply chain managers regarding the significance of the Economic Order Quantity (EOQ) model and its influence on customer satisfaction.

The significance of reorder levels in preventing stockouts in inventory management demonstrates their strategic importance. It is advisable for companies to allocate resources towards the acquisition of inventory management software that offers up-to-date information and notifications regarding stock levels, thereby facilitating prompt restocking. Regular evaluations of reorder points are crucial in response to evolving market dynamics and consumption patterns.

Considering the significant impact of Just-in-Time (JIT) on improving customer satisfaction through the reduction of lead times and waste, it becomes imperative for businesses to carefully deliberate the integration of JIT, particularly if they operate within dynamic and rapidly evolving markets. It is recommended that organisations commence trial initiatives aimed at incorporating Just-in-Time (JIT) principles into their production operations while concurrently monitoring the impact of such integration on customer feedback. In addition, it is imperative for them to establish close collaboration with suppliers in order to guarantee a smooth and efficient implementation process.

The contribution of ABC to providing accurate cost insights, which in turn enhance pricing and resource allocation, underscores its significance in the realm of strategic decision-making. It is recommended that organisations incorporate ABC analysis as a component of their financial reporting processes. It is recommended that training workshops be established for managerial employees, with a specific focus on the

benefits, implementation, and correlation of ABC (activity-based costing) to customer satisfaction.

5.4 Suggestions for further research

The examination of the various elements and variables that impact economic order quantity (EOQ) can be advantageous due to its significant impact on customer satisfaction. The focus of research might be aimed towards comprehending the diversity in holding costs, demand rates, and order costs across various sectors and their consequent influence on customer satisfaction. Furthermore, although the consequences of ABC on customer satisfaction are apparent, additional research is required to examine its implementation in smaller firms, including startups and SMEs. Can these entities effectively utilise the benefits of ABC while avoiding excessive implementation expenses? In conclusion, it would be beneficial to undertake a cross-industry comparative analysis in order to determine whether the impact of operational strategies on customer satisfaction remains constant. Do areas such as hospitality, healthcare, and banking demonstrate comparable patterns?

REFERENCES

Acharya, A.S., Prakash, A., Saxena, P. and Nigam, A., (2013). Sampling: Why and how of it. *Indian Journal of Medical Specialties*, *4*(2), pp.330-333.

Ahunanya, V., Ovharhe, O.H., Emenike, C.G. and Otto, G., (2022). Consignment inventory system and entrepreneurial success among micro warehousing firms. *International Journal of Social Science & Management Research*, *8*(5), pp.18-28.

Aksoy, H., (2017). How do innovation culture, marketing innovation and product innovation affect the market performance of small and medium-sized enterprises (SMEs)?. *Technology in Society*, *51*, pp.133-141.

Alahakoon, D. and Yu, X., (2015). Smart electricity meter data intelligence for future energy systems: A survey. *IEEE Transactions on Industrial Informatics*, *12*(1), pp.425-436.

Albus, H. and Ro, H., (2017). Corporate social responsibility: The effect of green practices in a service recovery. *Journal of Hospitality & Tourism Research*, *41*(1), pp.41-65.

Al-Momani, H., Al Meanazel, O.T., Kwaldeh, E., Alaween, A., Khasaleh, A. and Qamar, A., (2020). The efficiency of using a tailored inventory management system in the military aviation industry. *Heliyon*, *6*(7), p.e04424.

Alrubaiee, L. and Al-Nazer, N., (2010). Investigate the impact of relationship marketing orientation on customer loyalty: The customer's perspective. *International Journal of Marketing Studies*, *2*(1), p.155.

Anderson, E.W., Fornell, C. and Lehmann, D.R., (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *Journal of marketing*, *58*(3), pp.53-66.

Arend, R.J. and Lévesque, M., (2010). Is the resource-based view a practical organizational theory?. *Organization Science*, *21*(4), pp.913-930.

Atnafu, D. and Balda, A., (2018). The impact of inventory management practice on firms' competitiveness and organizational performance: Empirical evidence from micro and small enterprises in Ethiopia. *Cogent Business & Management*, *5*(1), p.1503219.

Balamurugan, E., Flaih, L.R., Yuvaraj, D., Sangeetha, K., Jayanthiladevi, A. and Kumar, T.S., (2019), December. Use case of artificial intelligence in machine learning manufacturing 4.0. In *2019 International conference on computational intelligence and knowledge economy (ICCIKE)* (pp. 656-659). IEEE.

Bam, L., McLaren, Z.M., Coetzee, E. and Von Leipzig, K.H., (2017). Reducing stock-outs of essential tuberculosis medicines: a system dynamics modelling approach to supply chain management. *Health Policy and Planning*, *32*(8), pp.1127-1134.

Barney, J.B., (2017). Resources, capabilities, core competencies, invisible assets, and knowledge assets: Label proliferation and theory development in the field of

strategic management. *The SMS Blackwell handbook of organizational capabilities*, pp.422-426.

Bashar, A., Hasin, A.A. and Adnan, Z.H., (2021). Impact of lean manufacturing: evidence from apparel industry in Bangladesh. *International Journal of Lean Six Sigma*, *12*(5), pp.923-943.

Battini, D., Calzavara, M., Isolan, I., Sgarbossa, F. and Zangaro, F., (2018). Sustainability in material purchasing: A multi-objective economic order quantity model under carbon trading. *Sustainability*, *10*(12), p.4438.

Beaudry, A. and Pinsonneault, A., (2010). The other side of acceptance: Studying the direct and indirect effects of emotions on information technology use. *MIS quarterly*, pp.689-710.

Bist, R.B., (2014). Research procedure: An introduction. *Journal of NELTA Surkhet*, *4*, pp.34-40.

Bollen, M.H., (2000). Understanding power quality problems. In *Voltage sags and Interruptions*. Piscataway, NJ, USA: IEEE press.

Brahma, S.S., (2009). Assessment of construct validity in management research: A structured guideline. *Journal of Management Research*, *9*(2), pp.59-71.

Burgos, D. and Ivanov, D., (2021). Food retail supply chain resilience and the COVID-19 pandemic: A digital twin-based impact analysis and improvement directions. *Transportation Research Part E: Logistics and Transportation Review*, *152*, p.102412.

Cachon, G. and Terwiesch, C., (2012). *EBOOK: Matching Supply With Demand: An Introduction To Operations Management*. McGraw Hill.

Carroll, N. and Lord, J.C., (2016). The growing importance of cost accounting for hospitals. *Journal of health care finance*, *43*(2), p.172.

Casula, M., Rangarajan, N. and Shields, P., (2021). The potential of working hypotheses for deductive exploratory research. *Quality & Quantity*, *55*(5), pp.1703-1725.

Chang, C.T., Cheng, M.C. and Soong, P.Y., (2016). Impacts of inspection errors and trade credits on the economic order quantity model for items with imperfect quality. *International Journal of Systems Science: Operations & Logistics*, *3*(1), pp.34-48.

Chaudhari, S.N. and Patel, A.J., (2015). JIT Implements in manufacturing industry–A Review. *International Journal of Engineering Research and General Science*, *3*(4), pp.706-709.

Cho, D.W., Lee, Y.H., Ahn, S.H. and Hwang, M.K., (2012). A framework for measuring the performance of service supply chain management. *Computers & Industrial Engineering*, *62*(3), pp.801-818.

Choi, T.M., Wallace, S.W. and Wang, Y., (2018). Big data analytics in operations management. *Production and Operations Management*, *27*(10), pp.1868-1883.

Christopher, M., (2016). *Logistics & supply chain management*. Pearson Uk.

Christopher, M., 2016. *Logistics & supply chain management*. Pearson Uk.

Collins, J.D., Worthington, W.J., Reyes, P.M. and Romero, M., (2010). Knowledge management, supply chain technologies, and firm performance. *Management Research Review*, *33*(10), pp.947-960.

Cooper, R. and Kaplan, R.S., (1991). Profit priorities from activity-based costing. *Harvard business review*, *69*(3), pp.130-135.

Croxton, K.L., Lambert, D.M., García-Dastugue, S.J. and Rogers, D.S., (2002). The demand management process. *The International Journal of logistics management*, *13*(2), pp.51-66.

Daryanto, Y. and Christata, B., (2021). Optimal order quantity considering carbon emission costs, defective items, and partial backorder. *Uncertain Supply Chain Management*, *9*(2), pp.307-316.

Demeter, K. and Matyusz, Z., (2011). The impact of lean practices on inventory turnover. *International journal of production economics*, *133*(1), pp.154-163.

Douissa, M.R. and Jabeur, K., (2016). A new model for multi-criteria ABC inventory classification: PROAFTN method. *Procedia Computer Science*, *96*, pp.550-559.

Durowoju, O., Chan, H.K. and Wang, X., (2020). Investigation of the effect of e-platform information security breaches: a small and medium enterprise supply chain perspective. *IEEE Transactions on Engineering Management*, *69*(6), pp.3694-3709.

Eissa, M.M., (2019). Developing incentive demand response with commercial energy management system (CEMS) based on diffusion model, smart meters and new communication protocol. *Applied Energy*, *236*, pp.273-292.

Ernawati, D., Pudji, E., Rahmawati, N. and Alfin, M., (2021), May. Bullwhip effect reduction using vendor managed inventory (VMI) method in supply chain of

manufacturing company. In *Journal of Physics: Conference Series* (Vol. 1899, No. 1, p. 012082). IOP Publishing.

Etikan, I. and Bala, K., (2017). Sampling and sampling methods. *Biometrics & Biostatistics International Journal*, *5*(6), p.00149.

Feng, M., Li, C., McVay, S.E. and Skaife, H., (2015). Does ineffective internal control over financial reporting affect a firm's operations? Evidence from firms' inventory management. *The Accounting Review*, *90*(2), pp.529-557.

Fera, M., Fruggiero, F., Lambiase, A., Macchiaroli, R. and Miranda, S., (2017). The role of uncertainty in supply chains under dynamic modeling. *International Journal of Industrial Engineering Computations*, *8*(1), pp.119-140.

Friday, D., Savage, D.A., Melnyk, S.A., Harrison, N., Ryan, S. and Wechtler, H., (2021). A collaborative approach to maintaining optimal inventory and mitigating stockout risks during a pandemic: capabilities for enabling health-care supply chain resilience. *Journal of Humanitarian Logistics and Supply Chain Management*.

Galletta, A., (2013). *Mastering the semi-structured interview and beyond: From research design to analysis and publication* (Vol. 18). NYU press.

Garg, H., (2015). Fuzzy inventory models for deteriorating items under different types of lead-time distributions. In *Intelligent Techniques in Engineering Management: Theory and Applications* (pp. 247-274). Cham: Springer International Publishing.

Gholami, A. and Mirzazadeh, A., (2018). An inventory model with controllable lead time and ordering cost, log-normal-distributed demand, and gamma-distributed available capacity. *Cogent Business & Management*, *5*(1), p.1469182.

Gorane, S. and Kant, R., (2017). Supply chain practices and organizational performance: An empirical investigation of Indian manufacturing organizations. *The International Journal of Logistics Management*.

Goshime, Y., Kitaw, D. and Jilcha, K., (2019). Lean manufacturing as a vehicle for improving productivity and customer satisfaction: A literature review on metals and engineering industries. *International Journal of Lean Six Sigma*, *10*(2), pp.691-714.

Guest, G., Namey, E.E. and Mitchell, M.L., (2013). *Collecting qualitative data: A field manual for applied research*. Sage.

Guilding, C., Drury, C. and Tayles, M., (2005). An empirical investigation of the importance of cost-plus pricing. *Managerial Auditing Journal*, *20*(2), pp.125-137.

Gupta, S., 2020. *WORKING CAPITAL MANAGEMENT THROUGH INVENTORY MANAGEMENT TECHNIQUES*. Ashok Yakkaldevi.

Hammoud, J., Bizri, R.M. and El Baba, I., (2018). The impact of e-banking service quality on customer satisfaction: Evidence from the Lebanese banking sector. *Sage Open*, *8*(3), p.2158244018790633.

Harris, F.W., (1913). How many parts to make at once. Operations Research. Vol. 38,№ 6 (Nov. Dec., 1990), pp. 947-950. Reprinted from Factory, The Magazine of Management, Volume 10, Number 2.

Hazen, B.T., Boone, C.A., Ezell, J.D. and Jones-Farmer, L.A., (2014). Data quality for data science, predictive analytics, and big data in supply chain management: An introduction to the problem and suggestions for research and applications. *International Journal of Production Economics*, *154*, pp.72-80.

Heikkilä, J., (2002). From supply to demand chain management: efficiency and customer satisfaction. *Journal of operations management*, *20*(6), pp.747-767.

Hossain, N.U.I., Nur, F., Hosseini, S., Jaradat, R., Marufuzzaman, M. and Puryear, S.M., (2019). A Bayesian network based approach for modeling and assessing resilience: A case study of a full service deep water port. *Reliability Engineering & System Safety*, *189*, pp.378-396.

Huang et al., (2014). The application of the theory of constraints and activity-based costing to business excellence: the case of automotive electronics manufacture firms. *Total quality management & business excellence*, *25*(5-6), pp.532-545.

Ilieska, K., (2013). Customer satisfaction index–as a base for strategic marketing management. *TEM journal*, *2*(4), p.327.

Isaksson, O.H. and Seifert, R.W., (2014). Inventory leanness and the financial performance of firms. *Production Planning & Control*, *25*(12), pp.999-1014.

Johnson, F., Leenders, M.R. and Flynn, A.E., 2021. *Purchasing and supply management*. McGraw-Hill Companies, Inc.

Kabue, L.W. and Kilika, J.M., (2016). Firm resources, core competencies and sustainable competitive advantage: An integrative theoretical framework. *Journal of management and strategy*, *7*(1), pp.98-108.

Kaile, C., 2020. *Effects Of Inventory Management Practices On Service Delivery At Adult Hospital-The Case Study Of University Teaching Hospital (Uth)* (Doctoral Dissertation).

Kamau, L.W. and Kagiri, A.W., (2015). Influence of inventory management practices on organizational competitiveness: A case of Safaricom Kenya Ltd. *International Academic Journal of Procurement and Supply Chain Management*, *1*(5), pp.72-98.

Kamau, L.W. and Kagiri, A.W., (2015). Influence of inventory management practices on organizational competitiveness: A case of Safaricom Kenya Ltd. *International Academic Journal of Procurement and Supply Chain Management*, *1*(5), pp.72-98.

Kandola, D., Banner, D., O'Keefe-McCarthy, S. and Jassal, D., (2014). Sampling Methods in Cardiovascular Nursing Research: An Overview. *Canadian Journal of Cardiovascular Nursing*, *24*(3).

Kaplan, R.S. and Anderson, S.R., (2007). Time Driven Activity Based Costing. Harvard Business School Press. *Trad. française (2008): TDABC, la méthode ABC pilotée par le temps, Éditions d'Organisation*.

Karakatsoulis, G. and Skouri, K., (2021). Optimal reorder level and lot size decisions for an inventory system with defective items. *Applied Mathematical Modelling*, *92*, pp.651-668.

Kehinde Busola, E., Ogunnaike Olaleke, O. and Adegbuyi, O., 2020. Analysis of inventory management practices for optimal economic performance using ABC and EOQ models. *International Journal of Management (IJM)*, *11*(7).

Kermorvant, C., D'amico, F., Bru, N., Caill-Milly, N. and Robertson, B., (2019). Spatially balanced sampling designs for environmental surveys. *Environmental monitoring and assessment*, *191*(8), p.524.

Khadka, K. and Maharjan, S., (2017). Customer satisfaction and customer loyalty. *Centria University of Applied Sciences Pietarsaari*, *1*(10), pp.58-64.

Killen, C.P., Jugdev, K., Drouin, N. and Petit, Y., (2012). Advancing project and portfolio management research: Applying strategic management theories. *International journal of project management*, *30*(5), pp.525-538.

Kim, M., Song, J. and Triche, J., (2015). Toward an integrated framework for innovation in service: A resource-based view and dynamic capabilities approach. *Information Systems Frontiers*, *17*, pp.533-546.

Komatsu, S., Kaneko, S., Ghosh, P.P. and Morinaga, A., (2013). Determinants of user satisfaction with solar home systems in rural Bangladesh. *Energy*, *61*, pp.52-58.

Kroes, J.R. and Manikas, A.S., 2018. An exploration of 'sticky'inventory management in the manufacturing industry. *Production Planning & Control*, *29*(2), pp.131-142.

Kumar, A. and Grisaffe, D.B., (2004). Effects of extrinsic attributes on perceived quality, customer value, and behavioral intentions in B2B settings: A comparison across goods and service industries. *Journal of Business to Business Marketing*, *11*(4), pp.43-74.

Kumar, S. and Chakravarty, A., (2015). ABC–VED analysis of expendable medical stores at a tertiary care hospital. *Medical journal armed forces india*, *71*(1), pp.24-27.

Lai, K.H. and Cheng, T.E., (2016). *Just-in-time logistics*. CRC Press.

Lai, K.H. and Cheng, T.E., (2016). *Just-in-time logistics*. CRC Press.

Lai, K.H. and Cheng, T.E., (2016). *Just-in-time logistics*. CRC Press.

Lawrence, T.M., Boudreau, M.C., Helsen, L., Henze, G., Mohammadpour, J., Noonan, D., Patteeuw, D., Pless, S. and Watson, R.T., (2016). Ten questions concerning integrating smart buildings into the smart grid. *Building and Environment*, *108*, pp.273-283.

Lee, H.H., Zhou, J. and Hsu, P.H., (2015). The role of innovation in inventory turnover performance. *Decision Support Systems*, *76*, pp.35-44.

Li, G., Li, L., Choi, T.M. and Sethi, S.P., 2020. Green supply chain management in Chinese firms: Innovative measures and the moderating role of quick response technology. *Journal of Operations Management*, *66*(7-8), pp.958-988.

Liu, W.K., Lee, Y.S. and Hung, L.M., (2017). The interrelationships among service quality, customer satisfaction, and customer loyalty: Examination of the fast-food industry. *Journal of Foodservice Business Research*, *20*(2), pp.146-162.

Lohar, S.J., 2017. *Production planning process across pharmaceutical industries* (Doctoral dissertation, Vilniaus Gedimino technikos universitetas).

Lu, Q., Goh, M. and De Souza, R., (2016). A SCOR framework to measure logistics performance of humanitarian organizations. *Journal of Humanitarian Logistics and Supply Chain Management*.

Lwiki, T., Ojera, P.B., Mugenda, N.G. and Wachira, V.K., (2013). The impact of inventory management practices on financial performance of sugar

manufacturing firms in Kenya. *International Journal of Business, Humanities and Technology*, *3*(5), pp.75-85.

Lyu, Z., Lin, P., Guo, D. and Huang, G.Q., (2020). Towards zero-warehousing smart manufacturing from zero-inventory just-in-time production. *Robotics and Computer-Integrated Manufacturing*, *64*, p.101932.

Lyu, Z., Lin, P., Guo, D. and Huang, G.Q., (2020). Towards zero-warehousing smart manufacturing from zero-inventory just-in-time production. *Robotics and Computer-Integrated Manufacturing*, *64*, p.101932.

Lyu, Z., Lin, P., Guo, D. and Huang, G.Q., (2020). Towards zero-warehousing smart manufacturing from zero-inventory just-in-time production. *Robotics and Computer-Integrated Manufacturing*, *64*, p.101932.

Maddah, B. and Noueihed, N., (2017). EOQ holds under stochastic demand, a technical note. *Applied Mathematical Modelling*, *45*, pp.205-208.

Maddah, B. and Noueihed, N., (2017). EOQ holds under stochastic demand, a technical note. *Applied Mathematical Modelling*, *45*, pp.205-208.

Maiga, A.S. and Jacobs, F.A., (2003). Balanced scorecard, activity-based costing and company performance: an empirical analysis. *Journal of managerial issues*, pp.283-301.

Makori, J.K. and Muturi, W., (2018). Influence of Inventory Management Practices on Performance of Procurement Function in Health Institutions in Kenya. A Survey of Selected Public Health Institutions in Western Kenya. *International Journal of Social Sciences and Information Technology*, *4*(10).

Makori, J.K. and Muturi, W., (2018). Influence of Inventory Management Practices on Performance of Procurement Function in Health Institutions in Kenya. A Survey of Selected Public Health Institutions in Western Kenya. *International Journal of Social Sciences and Information Technology*, *4*(10).

Markovic, D.S., Zivkovic, D., Branovic, I., Popovic, R. and Cvetkovic, D., (2013). Smart power grid and cloud computing. *Renewable and Sustainable Energy Reviews*, *24*, pp.566-577.

Markovic, S., Iglesias, O., Singh, J.J. and Sierra, V., (2018). How does the perceived ethicality of corporate services brands influence loyalty and positive word-of-mouth? Analyzing the roles of empathy, affective commitment, and perceived quality. *Journal of Business Ethics*, *148*, pp.721-740.

Maurer, C.C., Bansal, P. and Crossan, M.M., (2011). Creating economic value through social values: Introducing a culturally informed resource-based view. *Organization Science*, *22*(2), pp.432-448.

McIvor, R. and Humphreys, P., 2004. The implications of electronic B2B intermediaries for the buyer-supplier interface. International Journal of Operations & Production Management.

McMurrian, R.C. and Matulich, E., (2016). Building customer value and profitability with business ethics. *Journal of Business & Economics Research (JBER)*, *14*(3), pp.83-90.

Mekel, C., Anantadjaya, S.P. and Lahindah, L., (2014). Stock out analysis: An empirical study on forecasting, re-order point and safety stock level at PT Combiphar, Indonesia. *RIBER: Review of Integrative Business and Economics Research*, *3*(1), pp.52-64.

Meshcheryakova, T., 2017. Conceptual provisions of the implementation of energy saving measures in the residential facilities. In *MATEC Web of Conferences* (Vol. 106, p. 06021). EDP Sciences.

Milovanović, V., Paunović, M. and Avramovski, S., (2021). The impact of COVID-19 on the hotel supply chain management. *Менаџмент у хотелијерству и туризму*, *9*(2), pp.63-78.

Mo, D.Y., Tsang, Y.P., Xu, W. and Wang, Y., (2022), September. Dynamic Inventory Replenishment with Reinforcement Learning in Managing E-Fulfilment Centres. In *Applications of Decision Science in Management: Proceedings of International Conference on Decision Science and Management (ICDSM 2022)* (pp. 313-319). Singapore: Springer Nature Singapore.

Mohajan, H.K., (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University. Economic Series*, *17*(4), pp.59-82.

Mohajan, H.K., (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University. Economic Series*, *17*(4), pp.59-82.

Moriña, A., (2021). When people matter: The ethics of qualitative research in the health and social sciences. *Health & social care in the community*, *29*(5), pp.1559-1565.

Mostafa, N., Hamdy, W. and Alawady, H., (2019). Impacts of internet of things on supply chains: a framework for warehousing. *Social sciences*, *8*(3), p.84.

Mutua, J., Ngui, D., Osiolo, H., Aligula, E. and Gachanja, J., (2012). Consumers satisfaction in the energy sector in Kenya. *Energy policy*, *48*, pp.702-710.

Nahmias, S. and Olsen, T.L., 2015. *Production and operations analysis*. Waveland Press.

Naliaka, V.W. and Namusonge, G.S., (2015). Role of inventory management on competitive advantage among manufacturing firms in Kenya: A case study of Unga Group Limited. *International Journal of Academic Research in Business and Social Sciences*, *5*(5), pp.87-104.

Nallusamy, S., Balaji, R. and Sundar, S., (2017). Proposed model for inventory review policy through ABC analysis in an automotive manufacturing industry. In *International Journal of Engineering Research in Africa* (Vol. 29, pp. 165-174). Trans Tech Publications Ltd.

Namir, K. and Labriji, H., (2022). Decision support tool for dynamic inventory management using machine learning, time series and combinatorial optimization. *Procedia Computer Science*, *198*, pp.423-428.

Nandan, S., (2010). Determinants of customer satisfaction on service quality: A study of railway platforms in India. *Journal of public transportation*, *13*(1), pp.97-113.

Nayak, R., Singh, A., Padhye, R. and Wang, L., 2015. RFID in textile and clothing manufacturing: technology and challenges. *Fashion and Textiles*, *2*(1), pp.1-16.

Nemtajela, N. and Mbohwa, C., (2017). Relationship between inventory management and uncertain demand for fast moving consumer goods organisations. *Procedia Manufacturing*, *8*, pp.699-706.

Nigah, R., Devnani, M. and Gupta, A.K., (2010). ABC and VED analysis of the pharmacy store of a tertiary care teaching, research and referral healthcare institute of India. *Journal of young pharmacists*, *2*(2), pp.201-205.

Nimeh, H.A., Abdallah, A.B. and Sweis, R., (2018). Lean supply chain management practices and performance: empirical evidence from manufacturing companies. *International Journal of Supply Chain Management*, *7*(1), pp.1-15.

O'Cass, A. and Sok, P., (2015). An exploratory study into managing value creation in tourism service firms: Understanding value creation phases at the intersection of the tourism service firm and their customers. *Tourism Management*, *51*, pp.186-200.

Ogbo, A.I. and Ukpere, W.I., (2014). The impact of effective inventory control management on organisational performance: A study of 7up bottling company nile mile enugu, nigeria. *Mediterranean Journal of Social Sciences*, *5*(10), p.109.

Ogbo, A.I. and Ukpere, W.I., 2014. The impact of effective inventory control management on organisational performance: A study of 7up bottling company nile mile enugu, nigeria. *Mediterranean Journal of Social Sciences*, *5*(10), pp.109-109.

Oluwaseyi, J.A., Onifade, M.K. and Odeyinka, O.F., (2017). Evaluation of the role of inventory management in logistics chain of an organisation. *LOGI–Scientific Journal on Transport and Logistics*, *8*(2), pp.1-11.

Onikoyi, I.A., Babafemi, E.A., Ojo, S.O.L.O.M.O.N. and Aje, C.O., 2017. Effect of Inventory Management Practices on Financial Performance of Larfage Wapco Plc. Nigeria. *European journal of business and management*, *9*(8), pp.113-122.

Onkundi, K.E.H. and Bichanga, W.O., (2016). Factors influencing inventory management performance in Public Health Sector: A case study of Public Health Sector in Kisii County. *health*, *8*(12).

Onyango, S.M., (2016). *Inventory management practices and service delivery of health humanitarian organizations in Kenya* (Doctoral dissertation, University of Nairobi).

Onyango, S.M., (2016). *Inventory management practices and service delivery of health humanitarian organizations in Kenya* (Doctoral dissertation, University of Nairobi).

Onyango, S.M., (2016). *Inventory management practices and service delivery of health humanitarian organizations in Kenya* (Doctoral dissertation, University of Nairobi).

Orobia, L.A., Nakibuuka, J., Bananuka, J. and Akisimire, R., 2020. Inventory management, managerial competence and financial performance of small businesses. *Journal of Accounting in Emerging Economies*, *10*(3), pp.379-398.

Ozalp, I., Suvaci, B. and Tonus, H.Z., (2010). A new approach in logistics management: Just IN Time-Logistics (JIT-L). *International Journal of Business and Management Studies*, *2*(1), pp.37-45.

Pallathadka, H., Ramirez-Asis, E.H., Loli-Poma, T.P., Kaliyaperumal, K., Ventayen, R.J.M. and Naved, M., (2021). Applications of artificial intelligence in business management, e-commerce and finance. *Materials Today: Proceedings*.

Panigrahi, R.R., Das, J.R., Jena, D. and Tanty, G., 2015. Advance inventory management practices and its impact on production performance of manufacturing industry. *Journal of*, *11*(6).

Panigrahi, R.R., Jena, D., Tandon, D., Meher, J.R., Mishra, P.C. and Sahoo, A., 2021. Inventory management and performance of manufacturing firms. *International Journal of Value Chain Management*, *12*(2), pp.149-170.

Panigrahi, R.R., Jena, D., Tandon, D., Meher, J.R., Mishra, P.C. and Sahoo, A., 2021. Inventory management and performance of manufacturing firms. *International Journal of Value Chain Management*, *12*(2), pp.149-170.

Panigrahi, R.R., Jena, D., Tandon, D., Meher, J.R., Mishra, P.C. and Sahoo, A., 2021. Inventory management and performance of manufacturing firms. *International Journal of Value Chain Management*, *12*(2), pp.149-170.

Poi, E.L. and Ogonu, C.G., (2019). Inventory control and customer satisfaction of petroleum marketing firms in Rivers State. *RSU Journal of Strategic and Internet Business*, *4*(1), p.427437.

Poi, E.L. and Opara, B.C., (2021). Inventory optimization and customer satisfaction of petroleum marketing firms in Rivers State. *Journal of Accounting*, *8*(2).

Powell, T.C., (2001). Competitive advantage: logical and philosophical considerations. *Strategic management journal*, *22*(9), pp.875-888.

Prempeh, K.B., 2015. The impact of efficient inventory management on profitability: evidence from selected manufacturing firms in Ghana.

Quach, S., Thaichon, P. and Hewege, C., (2020). Triadic relationship between customers, service providers and government in a highly regulated industry. *Journal of Retailing and Consumer Services*, *55*, p.102148.

Quartey, H.S.K., (2015). *Customer perception of service delivery by the Electricity Company of Ghana in the Cape Coast District* (Doctoral dissertation, University Of Cape Coast).

Quartey, H.S.K., 2015. *Customer perception of service delivery by the Electricity Company of Ghana in the Cape Coast District* (Doctoral dissertation, University Of Cape Coast).

Radasanu, A.C., (2016). Inventory management, service level and safety stock. *Journal of Public Administration, Finance and Law*, (09), pp.145-153.

Raji, I.O., Shevtshenko, E., Rossi, T. and Strozzi, F., (2021). Industry 4.0 technologies as enablers of lean and agile supply chain strategies: an exploratory investigation. *The International Journal of Logistics Management*.

Raman, S., Patwa, N., Niranjan, I., Ranjan, U., Moorthy, K. and Mehta, A., (2018). Impact of big data on supply chain management. *International Journal of Logistics Research and Applications*, *21*(6), pp.579-596.

Ramezani, A.R. and Razmeh, A.P., (2014). Basic elements, tools and control techniques of Just-in-time System. *New Science Series Journal*, *2*(9), pp.11-22.

Rathore, B., (2023). Integration of Artificial Intelligence& It's Practices in Apparel Industry. *International Journal of New Media Studies (IJNMS)*, *10*(1), pp.25-37.

Rathore, B., (2023). Integration of Artificial Intelligence& It's Practices in Apparel Industry. *International Journal of New Media Studies (IJNMS)*, *10*(1), pp.25-37.

Reichheld, F.F. and Sasser, W.E., (1990). Zero defections: quality comes to services. *1990*, *68*(5), pp.105-111.

Riza, M., Purba, H.H. and Mukhlisin, , (2018). The implementation of economic order quantity for reducing inventory cost. *Research in Logistics & Production*, *8*(3), pp.207-216.

Rukiya, A.M. and Kibet, Y., 2019. Effect of inventory management on customer satisfaction in public institutions of higher learning in Kenya. *International Academic Journal of Procurement and Supply Chain Management*, *3*(1), pp.198-216.

Ryu, K. and Han, H., (2010). Influence of the quality of food, service, and physical environment on customer satisfaction and behavioral intention in quick-casual restaurants: Moderating role of perceived price. *Journal of Hospitality & Tourism Research*, *34*(3), pp.310-329.

Saeidi, S.P., Sofian, S., Saeidi, P., Saeidi, S.P. and Saaeidi, S.A., (2015). How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction. *Journal of business research*, *68*(2), pp.341-350.

Sahoo, S. and Yadav, S., 2018. Lean implementation in small-and medium-sized enterprises: An empirical study of Indian manufacturing firms. *Benchmarking: An International Journal*.

Salite, D., Kirshner, J., Cotton, M., Howe, L., Cuamba, B., Feijó, J. and Macome, A.Z., (2021). Electricity access in Mozambique: A critical policy analysis of investment, service reliability and social sustainability. *Energy Research & Social Science*, *78*, p.102123.

Samuel, K.S., (2012). *Inventory management automation and the performance of supermarkets in western Kenya* (Doctoral dissertation).

Schuurman, B., (2020). Research on terrorism, 2007–2016: A review of data, methods, and authorship. *Terrorism and Political Violence*, *32*(5), pp.1011-1026.

Seawright, J. and Gerring, J., (2008). Case selection techniques in case study research: A menu of qualitative and quantitative options. *Political research quarterly*, *61*(2), pp.294-308.

Setó-Pamies, D., 2012. Customer loyalty to service providers: examining the role of service quality, customer satisfaction and trust. *Total Quality Management & Business Excellence*, *23*(11-12), pp.1257-1271.

Sharma, M. and Garg, N., (2016). Inventory control and big data. In *Optimal Inventory Control and Management Techniques* (pp. 222-235). IGI Global.

Shu, J., Wu, T. and Zhang, K., (2015). Warehouse location and two-echelon inventory management with concave operating cost. *International Journal of Production Research*, *53*(9), pp.2718-2729.

Silver, E.A., Pyke, D.F. and Peterson, R., (1998). *Inventory management and production planning and scheduling* (Vol. 3, p. 30). New York: Wiley.

Singh, A., Rasania, S.K. and Barua, K., (2022). Inventory control: its principles and application. *Indian Journal of Community Health*, *34*(1), pp.14-19.

Syawal, H.A. and Alfares, H.K., (2020), July. Inventory Optimization for Multiple Perishable Products with Dynamic Pricing, Dependent Stochastic Demand, and Dynamic Reorder Policy. In *2020 Industrial & Systems Engineering Conference (ISEC)* (pp. 1-5). IEEE.

Syntetos, A.A., Kholidasari, I. and Naim, M.M., (2016). The effects of integrating management judgement into OUT levels: In or out of context?. *European Journal of Operational Research*, *249*(3), pp.853-863.

Taherdoost, H., (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *How to choose a sampling technique for research (April 10, 2016)*.

Tan, K.C., 2001. A framework of supply chain management literature. *European Journal of Purchasing & Supply Management*, *7*(1), pp.39-48.

Tanwari, A., Lakhiar, A.Q. and Shaikh, G.Y., (2000). ABC analysis as a inventory control technique. *Quaid-E-Awam University research journal of engineering, science and technology*, *1*(1).

Tien, N.H., Anh, D.B.H. and Thuc, T.D., 2019. Global supply chain and logistics management. *Dehli: Academic Publications*.

Ţigu, G. and Călăreţu, B., (2013). Supply chain management performance in tourism. Continental hotels chain case. *Amfiteatru Economic Journal*, *15*(33), pp.103-115.

Tiwari, S., Wee, H.M. and Daryanto, Y., (2018). Big data analytics in supply chain management between 2010 and 2016: Insights to industries. *Computers & Industrial Engineering*, *115*, pp.319-330.

Urdan, T.C., (2022). *Statistics in plain English*. Taylor & Francis.

Vrat, P. and Vrat, P., (2014). Just-in-Time, MRP, and Lean Supply Chains. *Materials Management: An Integrated Systems Approach*, pp.151-173.

Wang, Y., Lo, H.P. and Yang, Y., (2004). An integrated framework for service quality, customer value, satisfaction: Evidence from China's telecommunication industry. *Information systems frontiers*, *6*(4), p.325.

Wu, H.H. and Chang, S.Y., (2015). A case study of using DEMATEL method to identify critical factors in green supply chain management. *Applied Mathematics and Computation*, *256*, pp.394-403.

Yilmaz, K., (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European journal of education*, *48*(2), pp.311-325.

Yu, M.C., (2011). Multi-criteria ABC analysis using artificial-intelligence-based classification techniques. *Expert Systems with Applications*, *38*(4), pp.3416-3421.

Yu, W., Jacobs, M.A., Salisbury, W.D. and Enns, H., (2013). The effects of supply chain integration on customer satisfaction and financial performance: An organizational learning perspective. *International Journal of Production Economics*, *146*(1), pp.346-358.

Yunus, N.K.Y., Ismail, A., Juga, Z.R. and Ishak, S., (2009). Service quality dimensions, perceive value and customer satisfaction: ABC relationship model testing. *International Business Education Journal*, *2*, pp.67-80.

Zaharia, V. and Bordeianu, D., (2018). Cost Strategies In Manufacturing Companies. *Proceedings in Manufacturing Systems*, *13*(4), p.157.

Zeng, S., Nestorenko, O., Nestorenko, T., Morkūnas, M., Volkov, A., Baležentis, T. and Zhang, C., (2020). EOQ for perishable goods: Modification of Wilson's model for food retailers.

Zhalechian, M., Tavakkoli-Moghaddam, R., Zahiri, B. and Mohammadi, M., (2016). Sustainable design of a closed-loop location-routing-inventory supply chain network under mixed uncertainty. *Transportation research part E: logistics and transportation review*, *89*, pp.182-214.

Zinn, W. and Liu, P.C., (2008). A comparison of actual and intended consumer behavior in response to retail stockouts. *Journal of Business Logistics*, *29*(2), pp.141-159.

Zinn, W. and Liu, P.C., (2008). A comparison of actual and intended consumer behavior in response to retail stockouts. *Journal of Business Logistics*, *29*(2), pp.141-159.

APPENDIX

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
SCHOOL OF BUSINESS
DEPT. OF SUPPLY CHAIN AND INFORMATION SYSTEMS [SCIS]

Target group: Electricity Company of Ghana

Dear respondent,
Thank you for your willingness to participate in this study. The study focuses on assessing *"the Effect of Inventory Management on Service Delivery at the Electricity Company of Ghana Limited."* The research is purely for academic purpose and as such privacy and confidentiality of all information shall be observed. To fairly report on the research work, you are implored to answer the questions with all honesty and sincerity.

I would therefore be grateful if you could kindly answer the following questions. Thank you.

SECTION A: DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

For the following questions, kindly select by checking (✓) all that apply.

1. Gender?
      A. Male ( )   B. Female ( )

2. Age?
      A. 25 years or less ( )   B. 26-35 years ( )
      C. 36-45 years ( )   D. 46-55 years ( )   E. above 55 years ( )

3. Education?
      A. SSSCE/WASSCE ( )   B. Diploma (HND) ( )   C. First Degree ( )
      D. Masters ( )   E. PhD ( )   F. Professional Certificate ( )

5. How long have you worked in this company?
      A. Less than 5 years ( )   B. 6-10 years ( )   C. 11-15 years ( )   D. 16-20 years ( )
      E. More than 20 years ( )

6. Position?
      A. Operations Manager ( )   B. Supply chain manager ( )   C. Warehouse Manager ( )
`   D. Procurement Officer ( ) E. Risk Manager ( )

SECTION B- INVENTORY MANAGEMENT

The following items relate to Inventory Management. Please indicate the extent to which you agree with the following statement on a scale of 1-5.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

#	ITEMS	1	2	3	6	7
	Economic Order Quantity					
1	Our firm inventory management is organized in a logical way they know when to order and how much to order.					
2	Our firm plans their inventory replenishment on a timely basis.					
3	Our firm minimizes storage costs by use of EOQ.					
4	Our firm reduces the cost of inventory management by use of EOQ.					
5	Our firm reduces wastages of inventory by use of EOQ.					

| 6 | Our firm ensures that inventory supply does not hit stock outs. | | | | | |
| 7 | Our firm clearly forecasts hence making inventory available. | | | | | |

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

#	ITEMS	1	2	3	6	7
	Re-order level					
1	Our firm understands their re-order levels.					
2	Our firm knows when to order and when not to order.					
3	Our The firm reduces lead time by use of re-order level.					
4	Our firm reduces cost of inventory management by use of re-order level.					
5	Our firm reduces wastages by use of re-order level.					
6	Our firm knows when to order and when not by use of re-order level.					
7	Our firm achieves optimal efficiency by use of re-order level.					

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

#	ITEMS	1	2	3	6	7
	Just-in-time					
1	Our firm reduces inventory levels.					
2	Our firms' items desired arrives just in time for use.					
3	Our firm does not have tolerance for late or early deliveries.					
4	Our firm maintains first enough material at just the right time in just the right place to make just the right amount of product.					
5	Our firm coordinates movement of Inventory by use of JIT.					

6	Our firm matches demand and supply by use of JIT.					
	Our firm saves cost of inventory management by use of JIT.					
7	Our firm reduce warehousing space by use of JIT.					

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

#	ITEMS					
		1	2	3	6	7
	Activity based Costing					
1	Our firm allocates time and money in inventory by use of ABC.					
2	Our firm determines the importance of items by use of ABC.					
3	Our firm determines the control level placed on the items by use of ABC.					

SECTION C – CUSTOMER SATISFACTION

The following items relate to customer satisfaction of the firm. Kindly use the 5-point scale below to provide the appropriate responses.

1	2	3	4	5
Strongly Disagree	Disagree	Nuetral	Agree	Strongly Agree

#	ITEMS					
		1	2	3	4	5
1	Our is totally committed to meeting our customers" expectations consistently.					
2	Our firm offer pleasurable customer experience.					
3	Our firm offer poor customer experience.					
4	Our firm fulfill the needs and wants of our customers.					

Thank you for paritcipating!!!