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**INVENTORY MANAGEMENT AND ORGANISATIONAL PERFORMANCE:
(A CASE STUDY OF ACCRA BREWERY LIMITED)**

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**A THESIS SUBMITTED TO THE DEPARTMENT OF SUPPLY CHAIN AND
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DECLARATION

I hereby declare that this thesis is the result of my original work towards the MSc. in Procurement and Supply Chain Management and that to the best of my knowledge, it neither contains material published by another person nor materials which have been accepted for the award of any other degree of the University, except where due acknowledgments have been made in the text.

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DEDICATION

I dedicate this work to God Almighty for his love shown me throughout my thesis. Moreover, to my lovely parents Benjamin Tetteh and Susuana Akweley Nortey for their tireless effort in bearing my weight on their shoulders and undying love for me since childhood. Finally, to my Colleagues who have supported me throughout this work. I will always appreciate all they have done.



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I say thank you and may the Almighty God bless you all!!!



ABSTRACT

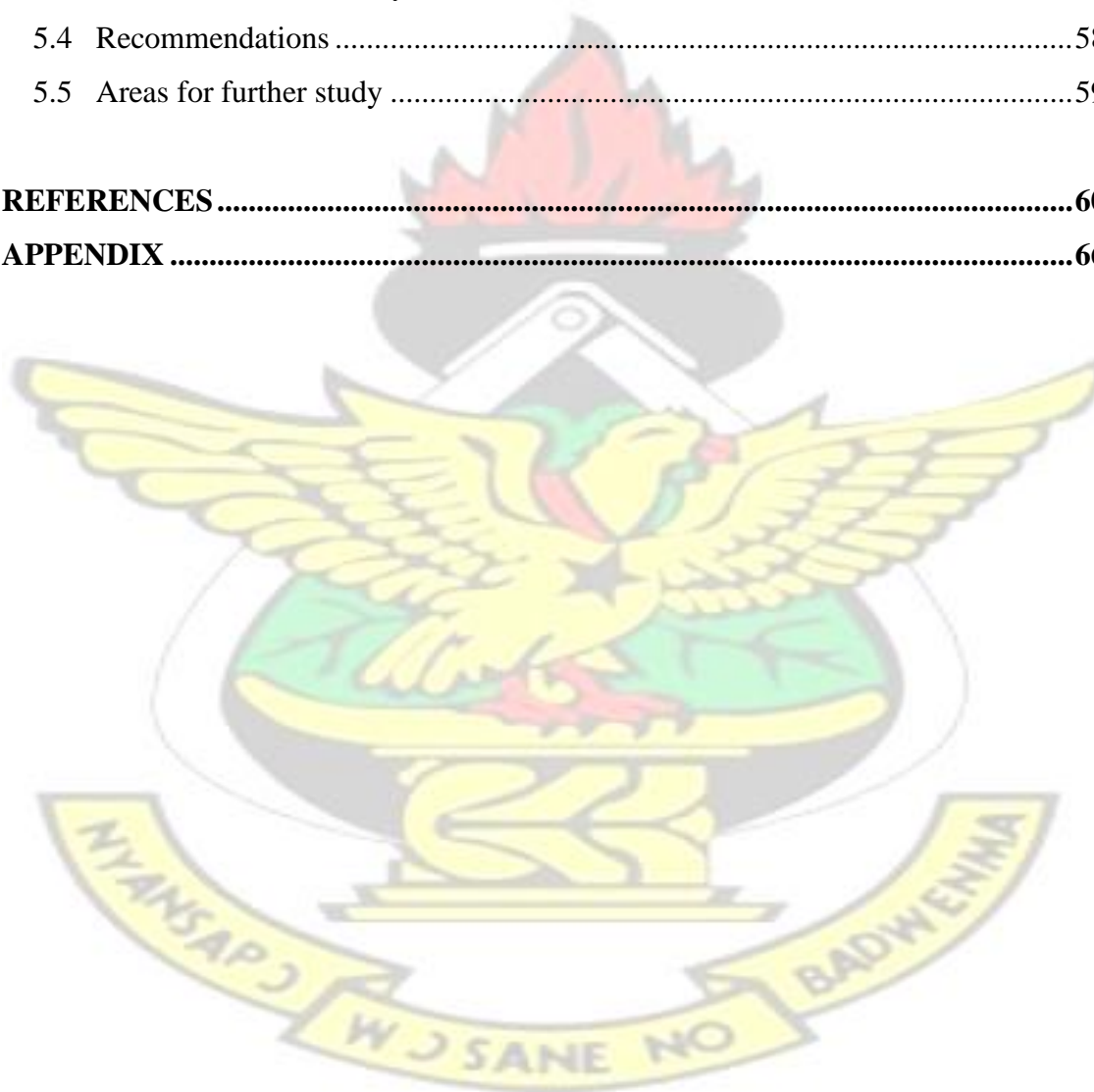
Inventory Management is a fundamental organization concern for most organisation' huge organisation, medium-sized organisation and small organisation. Functioning inventory organization in supply chains is one of the basic components for achievement. The study examined the inventory management and organisational performance in Ghana with Accra Brewery Limited (ABL) as a case study. The researcher adopted a case study approach with a structured questionnaire with a sample size of One hundred thirty-five (135) individuals of Accra Brewery Limited's junior and senior staff were selected using a purposive sampling technique and an SPSS was used for the analysis. Based on the findings of the study, the study indicates that ABC classification has a negative and insignificant effect on operational performance. The study also indicates that vendor inventory management has a positive but insignificant effect on operational performance and finally, the coefficient statistically indicates that there is a positive and significant relationship between just-in-time and vendor managed inventory and there is a positive and significant relationship between just-in-time and operational performance. The study there recommends that management should utilize the ABC analysis as a stock categorization method. The ideal way to devote resources and effort to stock practices will be for organizations to use ABC analysis as stock categorization, also management should utilize fixed order quantities to know the quantity of stock to order at any given time finally, recommends that management of organizations should recognize that there is the need for them to increase operational efficiency so that they will be able to reduce operational cost and increase productivity so that they can withstand global competition.

TABLE OF CONTENT

| | |
|---|------------|
| DECLARATION | ii |
| DEDICATION | iii |
| ABSTRACT | v |
| TABLE OF CONTENT | vi |
| LIST OF TABLES | ix |
| LIST OF FIGURES | x |
| LIST OF ABBREVIATIONS..... | xi |
| | |
| CHAPTER ONE..... | 1 |
| INTRODUCTION | 1 |
| 1.1 Background of the study | 1 |
| 1.2 Statement of the problem | 5 |
| 1.3 The purpose of the study | 7 |
| 1.4 Objectives of the study | 8 |
| 1.5 Research Questions | 8 |
| 1.6 Significance of the study | 9 |
| 1.7 Scope of the study | 9 |
| 1.8 Overview of Research Methodology..... | 10 |
| 1.9 Ethical consideration | 10 |
| 1.10 Limitation of the study | 11 |
| 1.11 Organisation of the study | 11 |
| | |
| CHAPTER TWO..... | 13 |
| LITERATURE REVIEW | 13 |
| 2.0 Introduction | 13 |
| 2.1 Conceptual Delimitation of inventory management | 13 |
| 2.2 Inventory management | 15 |
| 2.3 Reason for Holding Inventories | 16 |
| 2.4 Theoretical Review | 17 |
| 2.4.1 Transaction cost theory | 17 |
| 2.4.2 Resource Advantage Theory | 18 |
| 2.4.3 Strategic Choice Theory | 19 |

| | |
|---|-----------|
| 2.5 Inventory Management Practices | 20 |
| 2.6 Inventory the Management Practices and organizational performance | 23 |
| 2.7 Empirical Literature review | 24 |
| 2.8 Conceptual Framework | 26 |
| 2.8.1 Inventory Management Practices | 27 |
| 2.8.2 Just-in-Time Inventory Management Strategy | 28 |
| 2.8.3 ABC Analysis Inventory Management Strategy | 28 |
| 2.8.4 Fixed Order Quantity Inventory Management | 29 |
| 2.9 Chapter summary | 30 |
| CHAPTER THREE | 31 |
| RESEARCH METHODOLOGY..... | 31 |
| 3.0 Introduction | 31 |
| 3.1 Research Design | 31 |
| 3.2 Population of the study | 31 |
| 3.3 Sample Size and Sampling Techniques | 32 |
| 3.4 Data Dependability | 32 |
| 3.5 Data Validity | 33 |
| 3.6 Data collection instruments | 33 |
| 3.7 Data analysis | 34 |
| 3.8 Area of Study | 34 |
| 3.9 Chapter Summary | 34 |
| CHAPTER FOUR..... | 36 |
| DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS | 36 |
| 4.1 Introduction | 36 |
| 4.2 Demographic statistics | 36 |
| 4.3 Validity and Reliability Tests | 39 |
| 4.3 Exploratory factor loadings of items | 42 |
| 4.4 Just-In-Time | 42 |
| 4.5 ABC Classification..... | 44 |
| 4.6 Fixed Order Quantity | 46 |
| 4.7 Vender Managed Inventory | 46 |
| 4.8 Operational Performance..... | 47 |

| | | |
|--|---|-----------|
| 4.9 | Correlations among the constructs for the study | 48 |
| 4.10 | Regression results..... | 50 |
| 4.11 | Discussion of Results | 52 |
| CHAPTER FIVE..... | | 55 |
| SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS...55 | | |
| 5.1 | Introduction | 55 |
| 5.2 | Summary of Findings..... | 55 |
| 5.3 | Conclusions of the study | 57 |
| 5.4 | Recommendations | 58 |
| 5.5 | Areas for further study | 59 |
| REFERENCES..... | | 60 |
| APPENDIX | | 66 |



LIST OF TABLES

| | |
|---|----|
| Table 4.1: Respondents' Demographics..... | 37 |
| Table 4.2: Reliability tests..... | 41 |
| Table 4.3: Exploratory Factor loadings of constructs items..... | 42 |
| Table 4.4: Descriptive Statistics for Effects of Inventory Management on Performance | 43 |
| Table 4.5: Descriptive Statistics for ABC Classification for the relationship between inventory management practices and organizational performance | 45 |
| Table 4.6: Descriptive Statistics for ABC Classification | 46 |
| Table 4.7: Descriptive Statistics for Vender Managed Inventory | 46 |
| Table 4.8: Descriptive Statistics for Operational Performance | 47 |
| Table 4.9: Correlations among the constructs | 48 |
| Table 4.10: Effect of Inventory Management Practices on operational performance | 50 |
| Table 4.11: Hypothesis Testing and Findings | 51 |

LIST OF FIGURES

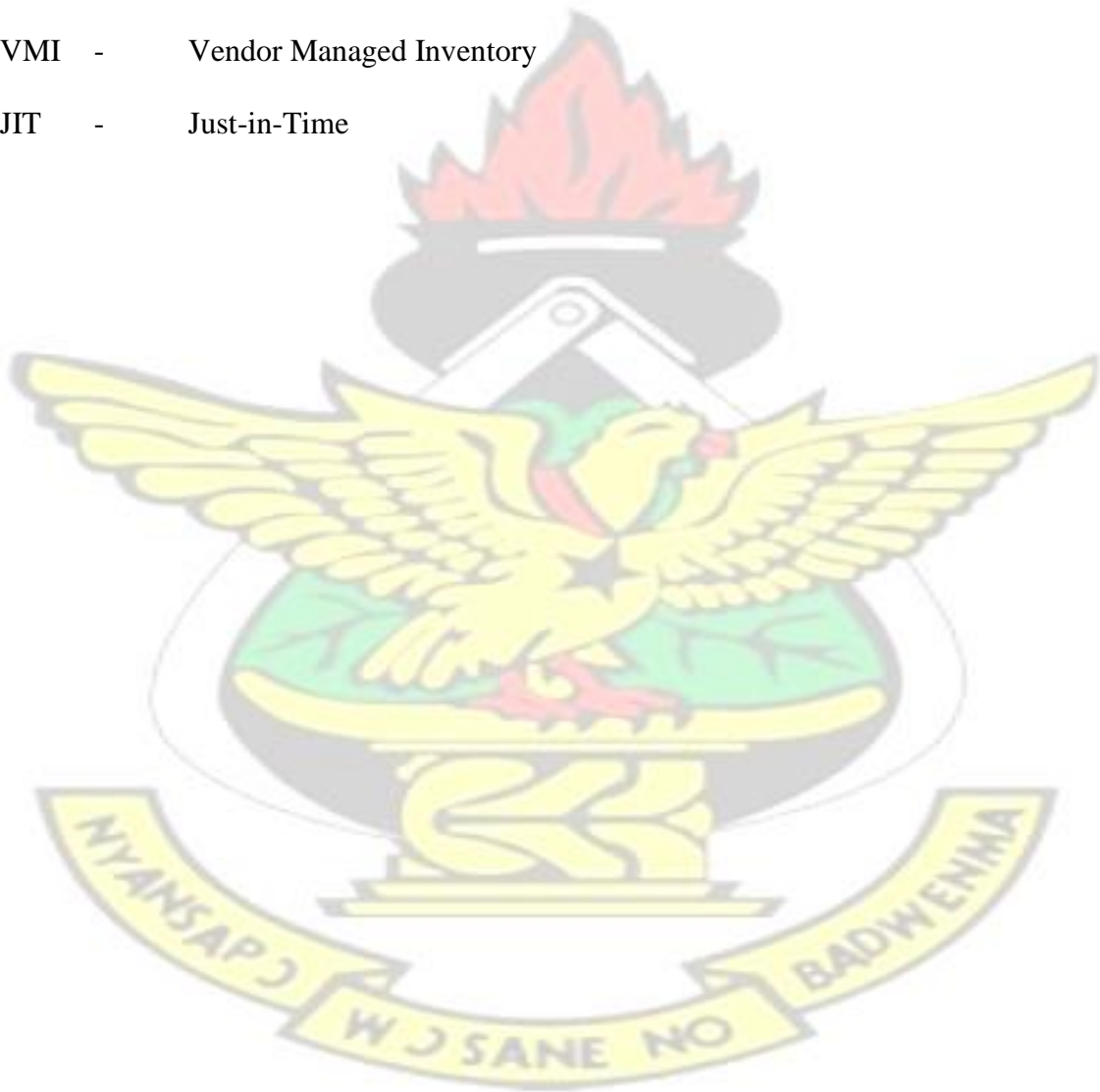
| | |
|------------------------------------|----|
| Figure 2.1: Conceptual model | 27 |
|------------------------------------|----|

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LIST OF ABBREVIATIONS

| | | |
|-----|---|--------------------------|
| VMI | - | Vendor managed Inventory |
| ABL | - | Accra Brewery Limited |
| RBV | - | Resource Based Theory |
| SCT | - | Strategy Choice Theory |
| FOQ | - | Fixed Order Quantity |
| EOQ | - | Economic Order Quantity |
| VMI | - | Vendor Managed Inventory |
| JIT | - | Just-in-Time |



CHAPTER ONE

INTRODUCTION

1.1 Background of the study

Inventory Management is a fundamental organization concern for most organisation' huge organisation, medium-sized organisation and small organisation. Functioning inventory organization in supply chains is one of the basic components for achievement (Edwin and Florence 2015). The challenges in overseeing inventory is to offset the supply chain with request. With the right inventory management, an organisation can achieve a workable competitive edge and increase the value of its customers. Through ways that save money without sacrificing quality or the ability to satisfy customers (Rao Kasisomayajula, 2016).

According to Madishetti and Kibona (2017), inventories of unrefined components, work-In- progress, completed products and supplies expected for making of organisation of labor and products. It is additionally the quantity of units as well as worth of load of merchandise an organisation holds. The indispensable justification behind why stock is held is to avoid stock outs. Stock levels are affected by factors such as the organization's immediate needs, the time it takes to obtain new stock, the cost of capital, the cost of credit, and the need for positive records as stock issues, which must be retained through the 9 to 8 use of store records (Srinivas and Kasisomayajula, 2016). The stock level for each material is determined after taking into account the number of open saves, the size of the available storage space, the rate at which materials are used, the lead time, and the margin of safety. Inventory levels should also be reflected in stock records. Inventory Management is fundamental at different regions inside an organisation or inside various areas of supply chain, to defend creation from running out of materials or merchandise. Production lines can run

more smoothly if assembly organisations keep sufficient supplies on hand. Keeping adequate stock allows wholesalers and retailers to provide excellent customer service and improve their public reputation. The primary goal of inventory management is to strike a balance between the quantity of stock on hand and the rate of return on risk taken (Lwiki et al, 2016). Management experts have identified stock levels as one of the most promising areas for innovation in terms of business supplies (Soni, 2017).

According to Panigrahi (2015), the insufficiency and unpredictability of the timing and content of data stream and product stream lead to dubious preparation, inflated costs, and stock postponements, necessitating measures, particularly on stock, to oversee insufficiencies and components on the operational level of business. However, this can only succeed if companies take the necessary steps at the most fundamental level to direct their retail network strategy toward a more robust and competitive system. In spite of the fact that there have been a few explorations in the space of stock and production network the board in guaranteeing organisational performance, little analyses have been finished to see the job of stock control in various beverage delivery particularly in Ghana. Be that as it may, taking into account the issue of cost, provider choice changeability and vulnerability popular and supply, there is the interest for a primary examination around here as they are most frequently plainly connected with fundamental production network issues inside organisation, for example, stock levels, delivery recurrence, among others (Sahari, Tinggi and Kadri, 2018).

When protecting (the creation) from a shortage of materials or products, inventory management plays a crucial role at numerous points inside an organization or along the various segments of a supply chain. The production cycle can be streamlined with the help of well-stocked warehouses at manufacturing companies. When they have

sufficient stock on hand, wholesalers and retailers may provide excellent customer service and improve their reputations among consumers. Inventory management's ultimate goal is to strike a balance between a minimal stock level and a high rate of return from speculation. According to a group of researchers (Gaur et al., 2015). Management experts have identified stock levels as one of the most promising areas for innovation in terms of business supplies (Singh, 2016).

In the industrial industry, inventory plays a crucial role as a current asset. Budgetary allocations of a humongous size are planned for stockpiles to guarantee uninterrupted production and to meet consumer demand. Dave (2015). Regardless, keeping up with inventory also contains holding or carrying costs close by opportunity cost. Stock Administration, as such, expects a basic part in changing the benefits and disservices related with holding stock Edwin, (20.15). Equipped and powerful inventory management goes far in effective successively and perseverance of a manufacturing industry, when. Organisations disregard to manage their stock, as a matter of fact, they will without a doubt experience stock out, decline in proficiency, advantage and client disappointment. Subsequently, the review hopes to 'investigate the effect of inventory management on the organisational performance of the picked delivering organizations. (Rachael, 2017).

When it comes to a company's fortunes, inventory plays a vital role, since poor stock management can lead to a loss of customers and a reduction in business deals. Depletion, theft, and waste can all be mitigated with some careful stock management, not to mention the supplies can always be easily accessed when needed (Farzaneh, 2017). In today's competitive and ever-changing industry, effective inventory management is crucial to a company's success. This includes a diminishing in the

expense of holding stocks by staying aware of scarcely enough inventories, impeccably situated, the best an open door and cost to make the ideal extent of required item. Increased equity holdings have a negative effect on the procurement performance derived from the capital on hand, which in turn affects compensation, leading to lower efficacy, insufficient supplies, and skewed convenience (IA 2016).

An organisation's performance is measured by how well it meets its market-based goals and targets, as well as its financial goals. It's a great tool for staying focused on and achieving the company's goals (Chadda, 2018). Performance measurement is fundamental in each firm for it includes evaluating how powerful and productive the inner and outside processes are in achieving the hierarchical al targets utilizing a particular arrangement of measurements Krishna-Murthy (2016). Because it provides information about the firm's tasks to both internal and external partners, organizational performance serves as a stand-in for organizational quirks. It includes everything in the organizational management cycle, which is a set of interactions for developing and carrying out a predetermined plan of action: Organisation performance comprises monetary execution which remembers the return for resources, benefit, commitment edges and item market performance which incorporates responsive on request, piece of the overall industry, and deals file Richard, (2017). Organizational performance is the finalized execution of methods that guarantee competent management and careful oversight, with a keen eye on the value creation, efficiency, and adequacy of the organization's cycles, activities, and resources for its clientele (Mahapattro, 2016).

According to Abramovitz and Modigliani (2015), authoritative execution assists with fortifying the administration and illuminate navigation. He noticed that benefit and piece of the pie record are proportions of hierarchical execution. Abdifatah (2017)

contended that exhibition isn't uniform in all organisations and sharp thought is required on various factors, for example, viability and effectiveness of inside activities, adaptable creation process, great provider relationship the executives, customer relationship the board and constant improvement in the organizations' tasks.

1.2 Statement of the problem

The effective process of any organisation requests an arranged progression of materials to service its activities (Krishnamurthy and Sastry 2018). This can be effective when the organisation holds load of materials it utilizes. George (2017), made sense of that Ghanaian manufacturing organizations dealt with issues of flimsiness in stock levels, decreased customers successful interest and significant cost of production because of unfortunate inventory management methods prompting, customer's disappointment. Subsequently, the efficiency of the organizations has declined, making faithful buyer to change to their unfamiliar rivals to track down the ideal products. Mishra (2016), makes sense of that assuming products are generally accessible in stock, customers won't buy merchandise from elsewhere. Then again, assuming the things are unavailable, customers have two choices, either to hold on until the item is available once more or to go purchase somewhere else. The last option will bring about loss of customer's generosity and it is unfavorable for organizations.

The manufacturing organizations in Ghana has had issues of interests in less basic stocks prompting unnecessary cost mistaken figures, and unfortunate responsiveness to customers' requests prompting decline performance (Lambrix, 2015). Singhvi (2016) saw that greater part of the manufacturing organizations in Ghana are in the experienced phase of their tasks and confined in nature consequently making them less serious. The unfortunate interest in inventories have sabotaged functional performance

of beverages organizations. By missing out on likely deals, and potential Piece of the pie also (Henry, 2018).

Investigations into inventory management have been conducted on a global and a regional scale. Jonsson and Mattsson (2018), who took a world view, zeroed in on inventory management procedures and made recommendations on how Joined Realm's distribution and manufacturing businesses may improve their readiness. The review detailed how the reviewed companies' routines with regards to material precondition preparation, Seller Oversight, and Monetary Request Amount reduced costs and improved the firm's advantage and customer loyalty. Ranganatham (2016), which focused on inventory management techniques in small-scale enterprises in India, outlined the businesses that had adopted the compelling inventory management strategies and exhibited progress in terms of management delivery and benefit to the enterprises. In order to better understand what makes an efficient inventory management system in Indian manufacturing enterprises, Kumar et al. (2017) looked at the finer points of inventory controls. Based on the results of this specific inventory control, it is clear that stock levels should be monitored on a regular basis to facilitate more efficient stock management and provide the company an edge over its competitors.

Parastatals in Ghana were studied by Gitau (2016) to learn how effective their inventory management was. The results of this study demonstrate a positive correlation between effective inventory management procedures and the success of businesses. Regardless, the parastatals are the focal point of the study's detailed inventory systems. Kinyua (2017) examined the impact of inventory management on the output of the client merchandise and item manufacturing industry in Accra, Ghana. Monetary

Request Amount was found to influence how review firms presented themselves in comparison to ABC, JIT, and VMI inventory management strategies. Regardless, the research concentrated on Accra-based factories producing the purchasers' products. Ongyango (2018) examined how charitable organizations' inventory management strategies affected their provision of security-related aid. Wanyonyi (2019) came to a conclusion regarding the management methods and delivery of inventory at a sizable general store in Ghana. By reducing functional costs and meeting or exceeding customer expectations, service delivery at a major manufacturing company was boosted when the company adopted ABC inventory techniques, JIT, VMI, and EOQ inventory procedures. However, the focus of the research was on Ghana's largest manufacturing firm.

The above-mentioned studies didn't comprehensively address the connection between inventory management practices and organisational performance particularly Accra Brewery Limited in Ghana. The review attempted to fill the data gap by answering question; what are the effect of inventory management performance at Accra Brewery Limited? What is the connection between inventory management practices and organisational performance of Accra Brewery Limited?

1.3 The purpose of the study

The rationale behind this study is to examine the inventory management and organisational performance in Ghana at with Accra Brewery Limited (ABL) as a case study. Incredibly, for the overwhelming majority retail organisation, inventory is just precise around 63% of the time. This is a low number when you understand how harming off base request can be. One of the most key advantages of stock following is that it decreases how much stock, organisations can save colossal sums on cost and

strength. One of the benefits of inventory management is reducing across the board. That is arranging inventory and also cut back on money spent housing needless materials. As the structure recognizes the genuine amounts of explicit items, inventory administrators can, rest knowing the: significant items are set to consequently recharge. This opens up space for a more extensive cluster of items and scales back money, confined clutching onto stock. One more benefit of inventory management is improving data deceivability and arranging. This truly intends that, while considering the benefits of having inventory management solution in-house, it is important not to forget the worth of business intelligence.

1.4 Objectives of the study

1. To explore the effect of inventory management on performance at Accra Brewery Limited
2. To decide the connection between inventory management practices and organisational performance at Accra Brewery Limited
3. To identify the inventory management practice at Accra Brewery Limited

1.5 Research Questions

- 1 What are the effects of inventory management on performance at Accra Brewery Limited?
- 2 What is the connection between inventory management practices and organisational performance at Accra Brewery Limited?
- 3 What are the inventory management practices at Accra Brewery Limited?

1.6 Significance of the study

This study will be significant for Accra Brewery Limited in recognizing the inventory management practices which when utilized enough and adequately will improved organisational performance. Additionally, it will help the organisation identify any operational weaknesses, particularly those that relate to the high cost of inventory in the manufacturing industry. For other manufacturing companies and other organizations, the study will be crucial in enabling them to assess the significance of inventory management practices that help with the ability to identify failure and open doors, particularly those connected with cost-cutting and improved organizational performance. The study will be useful to academics and researchers since the findings will advance knowledge and produce fresh data on inventory management techniques. The study will likewise extend the literature on the body of inventory management organisational performance.

1.7 Scope of the study

The study focuses on inventory management and effect on organisational performance at Accra Brewery Limited growing beverage organisation. The study covers both senior and junior staff data were gathered from the management and staff of the organisation with specific focuses on senior and junior staff responsible for acquiring and managing the organisation stocks. The study will be carried out at Accra Brewery Limited, Head Office. It is located at adjacent Graphic Corporation Head Office on Accra-Graphic Road, suburbs in the Accra Metropolitan District. It a residential area with population of about 20,000. This research was carried out Head Office of Accra Brewery Limited which is at Graphic Road. The researcher uses procurement department for the study and use both senior and junior members of staff for the study.

1.8 Overview of Research Methodology

The research adopted a quantitative design with a survey approach. This study will assess the ethical practices and standards in the public procurement system, in the Accra Brewery Limited. The population of the study was procurement managers in the cross-sectional companies sampled for this study. The study will employ simple random sampling to select the sample size due to the homogeneous nature of the population. The collection instrument will be self-administered questionnaires which will contain only closed ended questions. For the analysis both primary and secondary data will be gathered. A presentation of the actual data that will be collected to accomplish the purpose of the analysis will be provided by the primary data. Primary data will be collected using only closed –ended questionnaires administered to procurement managers in the companies. In order to include secondary data, scientific and analytical literature from papers, books and publications will be reviewed. Secondary data will be collected using textbooks, thesis, articles, journals, websites, magazines and new letters from relevant sources. For instance, in the work of Moh'd et al (2018), SPSS version 20 and Microsoft Excel version 16 was adopts for the analysis.

1.9 Ethical consideration

Considering the way that the review used human members in social occasion essential information and to decide connection between inventory management practices and organisational performance of Accra Brewery Limited, certain ethical issues were tended to. It was crucial to take care of these difficulties in order to examine both the safety and security of the people. Assent, privacy, and information security were among the important considerations considered. To avoid arguments among responders, the polls were written in the direction of the test in an extraordinarily clear and concise

manner. To avoid mistakes and inaccuracies in their replies, those who took part in the research were given more than enough time to respond to the questions that were posed to them. Regarding the classification of their personalities and the information they didn't want to reveal, the respondents received a waiver. The respondents' cooperation is eagerly sought for, and they were assured that the data gathered from them would be handled with the strictest confidence, encouraging them to be more honest. This was completed with the hope that it may increase respondents' and specialist's trust.

1.10 Limitation of the study

Because of time restraints, the study was limited only to Accra Brewery Ghana Limited for that matter, which could not permit a complete study on a large measure. Also, the research was limited to Accra Brewery Limited while contrast of improved different industries or different service sectors will have been better. The study mainly relied upon the data given by the respondents. This implies that the exactness of the information gave relied upon the data gave. The respondents dealt with the issue by settling on decisions for reasons. Organization data is exclusive and secret. The respondents in the middle of working timetables which postponed the fruition of the information assortment process was one more significant test: The analysts needed to practice most extreme persistence and put forth additional attempt in reminding respondents and making consistent subsequent meet-ups to secure adequate information from respondent.

1.11 Organisation of the study

There are five chapters in this research project. The background of the study, the problem statement, the purpose and objectives of the study, the research questions,

significance of the study, the study's scope, an overview of the research methodology, ethical considerations, the study's limitations, and its organization are all covered in chapter one. The literature review is covered in Chapter 2. The technique is covered in detail in Chapter 3, which includes the study region, study population, data collection process, research instrument, and research design and data analysis. The analysis of the data and discussion of the findings are presented in chapter four. The summary, results, recommendations, and ideas for additional research are presented in Chapter 5.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This provides an overview of inventory management and organizational performance. This chapter also provides an outline of the general issues including conceptual framework, theoretical review, and empirical review for the study. The definitions of key concept from authors are also considered in this chapter.

2.1 Conceptual Delimitation of inventory management

Inventory states to those merchandise which are held for conceivable deal by the business undertaking. As such, inventories are load of the item a firm is manufacturing available to be purchased and parts that make up the item. In this manner, inventories connect between the creation and deal of the items. As per Coyle et al (2017), inventory as unrefined components, work underway, completed merchandise and supplies expected for manufacture of an organisation's goods and product. It is the quantity of units as well as worth of the stock of items an organisation holds. The main reason why stock is kept is to avoid stock out and the problems that come with it. The degree of stock is affected by factors such as the organization's needs, the time it takes to obtain stock movements, the availability of money, the cost of credit, and the need for quick and dirty records as stock issues that must be maintained on utilizing store records (Ozdamar, 2016). The stock level for each material can be determined after thinking about factors including the number of open holds, the amount of spare space, the rate of material consumption, the expected lead time, and the margin of safety. Additionally, stock records should include stock levels. The protection of (the creation) from a lack of resources or product necessitates careful inventory management at multiple locations

within an organization or within various locations within an inventory network. Manufacturing companies with adequate stock on hand have a more streamlined production cycle. By maintaining adequate stock levels, wholesalers and retailers may provide exceptional service to their customers and improve their standing in the community. Achieving a balance between low stock and great yield on venture is a primary goal of inventory management. To wit: (Johson et al., 2018). Kumar, Ordamar, and Zhang claim that stock-level monitoring is one of the most potential areas for advancement in materials management (2016).

Production businesses typically have substantial inventories as a portion of their current assets. In order to keep production running smoothly and meet customer demand, huge investments are planned to stockpiles. Harland, (2019). Regardless, staying aware of stock additionally holding or conveying costs close by opportunity cost. Inventory management, along these lines, expects a fundamental part in changing the benefits and deterrents related with holding stock Edwin et al., (2017). Adept and successful inventory management goes very far in productive running and perseverance of a business firm, when organisations disregard to manage their stock really, they will undoubtedly insight, stock out, the diminishing in proficiency and efficiency, client disillusionment. Therefore, the survey attempts to investigate the effect of inventory management on the organisational performance of selected industrial organization (Anichebe and Agu, 2017)

Inadequate or poorly managed stock can have a devastating impact on a company's success, leading to lost customers and less sales. Prudent inventory management lowers losses from spoilage, theft, and waste while keeping supplies easily accessible whenever they are needed (Edwin and Florence 2019). Inventory management is

essential to an organisation's result in the present serious and dynamic market. This includes lowering the cost of inventory management by keeping tabs on just-in-time stock levels, appropriate locations, and the best opportunities and costs for producing just the right amount of stock at any given time. High levels of inventory have a deleterious influence on the efficiency with which capital is procured; this has negative consequences for productivity and efficiency (Harland, 2018).

2.2 Inventory management

In any organization, all capacities are interlinked and related with each other and are a large part of the time covering. A few key qualities like production network the board, planned operations and stock from the underpinning of the business delivery capacity. Consequently, these capacities are basic to publicizing supervisors as well as cash controllers. Inventory management is an essential capacity that concludes the strength of the supply chain as well as the impacts the money related sufficiency of the bookkeeping report (Johson et al, 2016). Every business works tirelessly to maintain an optimal stock of goods to ensure it can satisfy customer demands and prevents costly over- or under-ordering. Inventory always provides a good read. To effectively manage stock, one must constantly and thoughtfully assess both external and internal factors, and then orchestrate and examine the results. Inventory managers are a specialized department or job function in many organizations; their job is to keep track of stock and maintain close communication with the manufacturing, purchasing, and finance divisions (Kamau and Assumpta 2017).

Koin and Cheruiyot, (2016) Inventory management is the organization of non-advanced assets, or endlessly stock things. As a part of production supply chain management, inventory management managers the progression of merchandise from makers to

distribution center and from these offices to retail location. Inventory management is essential at different regions inside an organisation or inside various region of a store network, to defend (the creation) from running out of materials or items. The creation cycle will be facilitated by agreeable inventories maintained in manufacturing organizations. By maintaining enough inventory, wholesalers and retailers may provide excellent products and services and establish fantastic public reputations. Congruency between low stock and extraordinary yield on speculation is the primary goal of inventory management (Johson et al, 2016). One of the most exciting areas for development in terms of organizational materials management has been stock levels.

2.3 Reason for Holding Inventories

According to Ballou (2009), the reason storing inventory raises questions is because doing so advances distinct mindsets along the whole aided logistics chain. Schroeder (2015) also emphasized on the fact that keeping inventories may be seen from three different perspectives: value-based, preparatory, and theoretical thought processes. When stock needs to be held to satisfy requirements for production and transactions, the exchange logic is used. A company may also elect to keep a larger amount of stock on hand to account for the possibility that it miscalculated the needs for its future production and sales. When future interest is vague, this has the propensity to be a reasonable goal. The speculative justification for stock ownership may persuade a company to buy more materials than usual in anticipation of making unusual increases. One type of speculative course of action in inflationary times is the purchase of raw materials in advance.

Most organisation have raw materials inventory distribution centers joined to the production facilities where raw materials, consumable and pressing materials ate put away and issue for creation on in the nick of time bases. The purposes behind holding inventories can fluctuate from made to order base.

2.4 Theoretical Review

The rationale for inventory management methods and organizational success has been explained by a number of theories. As mentioned below, this study was related to the transaction cost theory, resource advantage theory, and strategic choice theory. It was also related to the key decision theory.

2.4.1 Transaction cost theory

Ogbad (2016) developed a method of analyzing transaction costs. The theory was developed with the firm in mind, with the aim of maintaining an optimal level of resources inside the organization to cut down on the expenses associated with operations without sacrificing efficiency or long-term viability. According to the hypothesis, in today's harsh environment, businesses must have an inventory of crossover administrative components (Huo, 2017). According to the transaction cost hypothesis, the firm's inventory is a cost that reduces profits and has an impact on efficiency. According to the theory, businesses in the manufacturing sector will incur additional expenses due to the necessity of information reconciliation costs incurred by their suppliers and themselves in order to ensure proper coordination and cooperation along the supply chain. In order to increase performance and lower costs associated with completing the request, Faems (2018) contends that the transaction cost theory enables organizations to be more flexible about how much to ask for and when to do so.

In order to improve the transaction, which might lead to lower functional costs and more developed client support levels, proponents of the social perspective on value-based cost theory place a premium on the structure of the organization and the relationship with the retail network partners. With the help of coordinated efforts, data sharing, and trust, the firm can reduce its task costs to almost nothing, giving it the freedom to keep only the stock it expects on hand (Bennett and Klug, 2019). Because it accurately depicts the whole cost of warehousing items and offers a comprehensive view of the supply chain partners directly involved in inventory management, the theory is essential to the focus.

2.4.2 Resource Advantage Theory

Chase and Morgan, (2018) formulated the Resource Advantage Theory. The theory evolved from the Resource Based View (RBV) by providing companies with the means to increase their efficiency and effectiveness through the systematic discovery, development, management, and control of their internal resources. When an organization adopts a select set of practices or amasses a particular quantity or quality of resources, the idea of comparative advantage based on resource advantage focuses on how effective that organization may be (Chase, 2017). Olavarrieta and Effinger (2016) characterized the elements of the resource advantage theory as the requirement for the firm to control and manage its resource in order to acquire a sustained competitive advantage over other businesses. The fact that some resources could be helpful yet incur significant costs for the organization was stressed; as a consequence, it is crucial for the board to make sure that there is the appropriate amount of these resources for the organization. Although keeping some stock on hand is essential for any manufacturer, keeping just the right amount may make or break a company's

bottom line. Keeping too much stock can lead to unnecessary expenses and reduce output. Too little stock in terms of available resources might have an adverse effect on client management and ultimately lead to dissatisfied customers. According to Megicks and Warnaby (2018), the situation is as follows. The theory's centrality in the concentrate stems from its view of stock as the means by which an organization can boost its authoritative performance. Nonetheless, it is believed that the corporation must manage its resources to live up to and even exceed the expectations of its clients.

2.4.3 Strategic Choice Theory

According to Youngster's (2017) Strategy Choice Theory (SCT), an organization's practices are crucial to the achievement of both its short-term and long-term objectives. The idea places a greater emphasis on the management and regulation of the processes, resources, and strategic operations that affect the organization's tasks and, in turn, its benefit and viability. As stated by Quigley and Hambrick (2016), a firm's capacity to exert command over its own internal resources is a key factor in determining its level of success in the marketplace. Using the tools provided by strategic choice theory, top management may pinpoint exactly which company assets require their attention in order for the business to achieve its stated goals, such as providing the highest quality customer service possible and expanding into new markets. Strategy Choice Theory, as outlined by Campling and Michelson (2018), details the factors that contribute to the dependence between the company and various actors in the environment, all of which have an impact on the firm's ability to function. In light of this, strategy choice theory posits that an organization's choice regarding the management and control of its resources is highly dependent on the impact of its current circumstance, such as the external climate, which includes the providers, financial circles, and competitors in the

business sectors who influence the level of inventory in the organization. According to the Strategy Choice Theory, if a company focuses on growing its functional parts, it will become a firm with a flexible vital conduct, such that the inventory in the company can be a functional leeway in the firm, necessitating an upgrade by the top management team to achieve an optimal level of inventory for maximum efficiency and profitability. Since 2016 (Mousa and Redd). The theory's centrality in the concentrate stems from the fact that it emphasizes optimal stock levels by making use of inventory management procedures. which will act as cushions against external forces, reducing the need for flexible parts.

2.5 Inventory Management Practices

Managing stock is one of the first orders of business for any manufacturer. The business must find a balance between minimizing inventory-related expenses due to the high capacity of a large stockpile and avoiding the loss of customers due to stock-outs caused by maintaining too little a supply. The problem of having either too much or too little inventory is solved by inventory management systems, which make it possible to maintain just the right amount of stock while also maximizing customer service and profits. Economic Order Quantity, Just-in-Time, and the ABC control model are examples of inventory management strategies that should not be implemented (Oballah, 2015).

Vender Managed Inventory (VMI) refers to a method of coordinating between a dealer and a buyer in which the supplier is responsible for managing and controlling the inventory levels within the company. The most efficient approach should be implemented in the company, as well as available options for recharging. Manager Vender oversaw Providers and vendors may learn everything important about an

organization's stock through inventory, therefore they have an interest in learning what the appropriate stock level is. This information helps businesses keep tabs on, regulate, and deal with their stock (Tang, 2016). The competitive advantage gained by outsourcing inventory management to a third party makes vendor-managed inventory (VMI) a crucial component of any successful supply chain. This results in improved productivity, skill, and adequacy; increased customer satisfaction; and lower inventory costs (Zavanella & Zanoni, 2011).

An organization can reduce its overall inventory expenses by using the fixed order quantity (FOQ) method of inventory management. This method involves placing orders for a predetermined amount of goods within a set time frame. (Ogbo. 2014). The holding cost, buying cost, and rendering cost of the quantity ordered by consumers within a given time frame all factor into the fixed order Quantity. Since consumer demand changes over time, FOQ inventory management strategies require a certain minimum stockpile size in order to minimize waste and expenses while still adequately satisfying customers' wants. A. Smaros et al., (2018). The methods used for managing stock under the FOQ models. It stabilizes stock levels for a predetermined time frame, typically a year. That means the company may plan for a certain amount of inventory expense. A look at inventories and inventory interest. So, it's safe to assume that the company had complete knowledge of all there was to know about the cost of maintaining inventory, the price of making a demand, and the interest on the stock on hand. Just-in-Time (JIT) is an inventory management method that allows the company to make a request for inventory only when it is actually needed, allowing it to choose the level of inventory it has on hand to meet consumer demand while keeping its costs to a minimum. In this way, companies only order what they need in small quantities, and stockpiles are only acquired when absolutely necessary, resulting in a stockpile of

"zero" (Mama and Fei, 2016). In most businesses, the 'zero' inventory level represents the actual stock on hand, which is either infinitely small or as close to infinite as possible. So long as the stocks are in the company, they need to be used. However, a 0% inventory level suggests that the vendor, and not the company, is responsible for any stockpiles of goods. The organization can avoid the delays that will result in customer dissatisfaction and general business execution by communicating with the provider about inventory management details like product demand, product design, and the amount of time needed for the inventory to arrive at the organization when a request is set (Mazanai, 2017).

The ABC system of inventory management divides a business's stock into three categories, with "class A" containing the most essential and crucial things that must be given the highest priority and the tightest managerial oversight. Class 'B' items are those that demand moderate thought, control, and management, and are of moderate value to the organization; Class 'C' items are those that need less thought, control, and oversight since they are of low value (Zavanella and Zanoni, 2018). According to the ABC control model, a select few departments may use a disproportionately large share of the company's resources to accomplish its goals, while the bulk of the company's stock may include relatively worthless things (Mandal, 2016). By multiplying the per-unit price by the total number of products in stock, we may calculate the inventory's worth.

ABC inventory control models allow the company to prioritize the management of high-value items above those of lower value, allowing for a more nuanced approach to inventory management. Therefore, businesses focus their strategies on the most

valuable assets, as these have the most impact on the smooth running of their operations and the satisfaction of their customers (Ng, 2017).

2.6 Inventory the Management Practices and organizational performance

Inventory management practices are crucial to a company's success since it has a direct bearing on its ability to function, which in turn affects how they are seen by customers. Inventory is the most crucial asset since it affects capabilities that directly affect customers (Zaza, 2016). Planning and implementation of inventory management procedures are done with an eye on exceeding customer expectations. Organizational effectiveness is impacted by the company's inventory management procedures since they are directly related to the products and services that customers need (Dabholkar, 2016).

Customers' needs should be met, stock-outs should be prevented, and inventory costs should not rise as a result of employing good inventory management procedures (Ogbo and Onekanma, 2016). Githui (2015) argues that the goal of effective inventory management is to reduce costs and boost productivity. The primary goal of inventory management is to maximize customer service by minimizing base costs while maintaining an optimal inventory level. Businesses are making efforts to strike a balance between under- and over-storage because both negatively affect operational efficacy (Cachon and Olivares. 2017). Effective inventory management practices should intelligently establish the amount to arrange, when to order, and how to arrange taking into thought the demands and expectations of the customers, thereby reducing the gaps in organizational performance that result from mismatches between the inventory level and the demands and expectations of the customers.

2.7 Empirical Literature review

Many local and foreign researchers have expressed their advantages in terms of organizational performance and inventory management procedures. Panigrahi (2016) anticipated that people throughout the world would see the link between the success of Indian beverage companies and their inventory management strategies. On the basis of cross-sectional research conducted between 2005 and 2015, the study came to its conclusion. The major objective of the study was to determine how inventory management practices affected the gross operating income of the top five beverage businesses in India. Regression analysis was utilized in the study to examine if inventory management practices and gross operating profit are related.

The study employed the current ratio, organization size, and financial debt ratio as the control variables and concentrated on the impact of the period of inventory change on an organization's gross operating profits.

The advantage of the Indian beverages organization was shown to be significantly negatively correlated with the stock change period using inventory control approaches including EOQ, a continuous review system, and periodic reviews. Ahmad and Zabri (2016) sought to spread the effects of the organizational functional efficiency and inventory management strategies in Malaysia. The researcher had the option of obtaining answers to all 100 questions, which would have resulted in a 100% response rate from the 100 Mineral water organization. The analysis of the data revealed that both unsystematic and unsystematic inventory management techniques were utilized in the operations of the vast majority of mineral water organizations. Although it was said that just 44% of the Mineral Water organization had adopted the conscious inventory management models, which condense the EOQ models, it was nevertheless stated that

this was the case. Inventory that is maintained by the vendor and bar code tagging. Furthermore, it was determined that the effective control models were a suitable inventory control strategy that affected the functional presentation of the Mineral Water organization because they led to a reduction in functional expense, increased versatility, improved client service, and increased productivity.

The goal of Kumar, Anzil, Ashik, Ashwin, and Ashok's (2017) study was to determine how specific inventory control models would affect the outcome of inventory management procedures. The analysis concentrated on the inventory control models and studies from ABC, HML, XYZ, and FSN. The evaluation narrowed its attention to one component of certain control models and honed in on the industrial organization in India that accounted for the majority of survey respondents. through the examination of the manufacturing company based in India. According to an analysis of the findings, the ABC and XYZ stock control models were the most precise control models for production. The ABC and XYZ stock control methods cause the organization's inventory of obsolete items to drop. lowering inventory expenditures by getting rid of items that weren't essential to the business and raising the stock level to its ideal level. According to the review, high value items were stored and kept under close watch through specific inventory control models because they were likely to affect the effectiveness and sufficiency of the manufacturing organization's operations. As a result, there was a need to place more emphasis on safety stock, re-request level, and lead-time.

Wanyonyi (2017) concentrated on the impact of inventory management techniques on the assistance delivery of the important manufacturing business in Accra. The research study was conducted using a descriptive research approach. To determine the extent

and relationship between inventory control procedures and the provision of assistance to Accra's large manufacturing sector, a survey was conducted using semi-coordinated questionnaires. The scientist distributed 15 questionnaires to the 15 major industrial industries in Accra, and 13 surveys were completed and returned, yielding an 87% response rate. According to the analysis of the data, a significant manufacturing organization had adopted the evil ABC, VMI, and EOQ models as their inventory control practices, disregarding the way that it had been stated that the Seller had been in charge of managing inventory and that the EOQ models had been adopted to a very large extent. The analysis showed that the stock control practices in the manufacturing association led to a reduction in stock levels, a reduction in inventory expenses, an increase in responsiveness, further improved dependability, and confirmation in the provision of client care. In the large industrial organization, it was finally determined that stock control procedures are important for the assistance shipment. based on the surveys. They have demonstrated the implications of some explicit behaviors on the effectiveness of the organization. It is clear there was an opening according to the best data on the researcher on the inventory management practices on organisational performance of the alcoholic and beverages manufacturing organisations in Ghana.

2.8 Conceptual Framework

The conceptual framework establishes the connection between the independent variable and dependability. As seen below, the independent variable is inventory management techniques including Economic Order Quantity (EOQ), Vendor Managed Inventory (VMI), Just-in-Time (JIT), and the ABC inventory model. On the other hand, the organizational performance is a dependent variable.

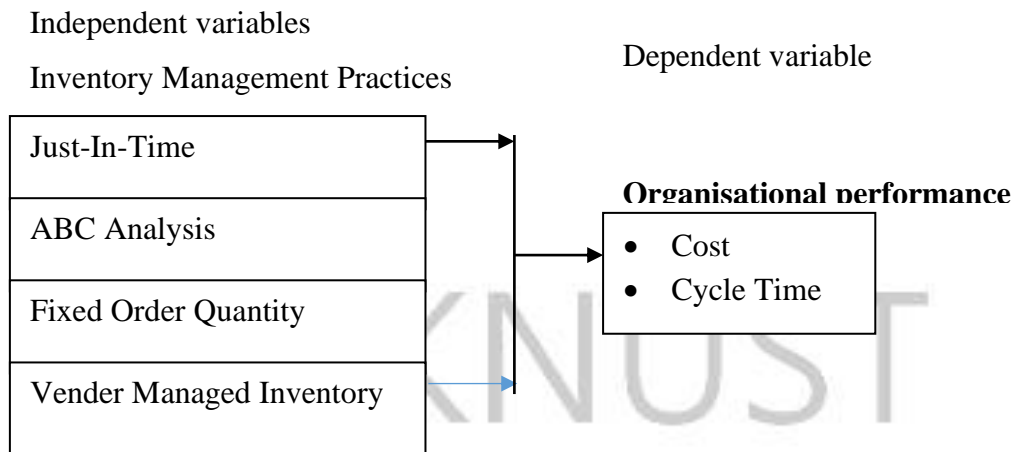


Figure 2.1: Conceptual model

Source: Researcher (2023)

2.8.1 Inventory Management Practices

Inventory management is significant for the effective activity of most organisations as a result of the cost inventory presents. Functioning management of inventory is an essential issue for organizations in all industries (Mentzer et al., 2017). There is subsequently the requirement for organizations to make do with their inventories really and efficiently. The management of inventories is under pressure in general. Inventory management primarily focuses on customer service (fulfilling demand), which means having the correct product in the right quantity, in the right location, at the right time. The cost of declaring and communicating inventory is another concern (Stevenson, 2016). Inventory management is the process of selecting and directing what should be organized, when it should be done, what should be maintained in stock, and how much of it should be loaded (Toomey, 2016) In this way, the general objective of inventory management is to improve company efficiency, reduce stock speculation, and achieve an acceptable degree of client care by maintaining stock levels within reasonable bounds (Lambert et al., 2017).

H1: Inventory management practices significantly affect cost therefore organisational performance

2.8.2 Just-in-Time Inventory Management Strategy

Because Just-in-Time manufacturing is a "pull" process, certifiable orders can help determine when something should be created. An organisation can offer precisely what is typically expected, in the appropriate quantity, at the appropriate time, thanks to demand pull. It is a method of improvement where non-value-added activities are identified and eliminated (Waters, 2016). The just-in-time approach is a Japanese way of thinking and gathering wisdom that entails having the appropriate things in the correct quantity and quality at the right location and time. Operation of just-in-time method achieves the expansion in quality, advantage, and suitability, further developed correspondence, and reduction of cost and wastes. According to Hutchins (2017), just-in-time is a cycle set up for movement of reaction to demand without the requirement for any overstocking, either in the desire application being close by or as a concern of insufficient qualities in the interim.

H2: Just-in-Time inventory management strategy significantly affects organizational performance

2.8.3 ABC Analysis Inventory Management Strategy

Class "A" items are those that are more crucial to the business and demand greater consideration, prioritizing, and management monitoring. Using the ABC inventory management method, the company's inventory is separated into three sections. Class "C" items require less management, care, and control even if they are less valued than Class "A" and "B" goods. Additionally, they need modest management, control, and

concern (Zavanella and Zanoni, 2018). The ABC control model postulates that while a sizable amount of the inventory may be made up of low-value goods, a tiny fraction of the organization may be engaged in activities that involve higher valued general goods (Mandal, 2016). The duplicating unit pricing and the number of items in the organization define the value of the inventory.

H3: ABC Analysis inventory management strategy significantly affects organizational performance.

2.8.4 Fixed Order Quantity Inventory Management

The term "Fixed Order Quantity" (EOQ) in inventory management refers to the practice of making orders for a predetermined amount of products that, when combined, minimize the organization's overall inventory expenditures by minimizing its purchase price, holding cost, and ordering fees. (Ogbo, 2016). In addition to the client's required amount, the Fixed Order Quantity Model also considers the anticipated holding cost, purchasing cost, and ordering cost within a predetermined time frame. There is a component of the sureness on the client demands over a period of time under the Fixed Order Quantity inventory management techniques, thus there is a requirement to maintain a certain amount of inventory to reduce the waste, cost, and to ideally serve the need of the consumers (Porteous, 2018). The Fixed Order Quantity models' methods for managing inventories. It keeps the inventory level constant throughout time, usually a year. The company will have a predetermined inventory cost in this way. Levels of inventory and stock demand. As a result, it is probable that the organization was fully aware of the inventory's demand as well as the costs associated with ordering new inventory as well as maintaining existing stock.

H4: Fixed Order Quantity inventory management strategy significantly affects organizational performance

2.9 Chapter summary

The literature review that was utilized to compile data for the study was described in this part. The theoretical examination, inventory management procedures, organizational performance, conceptual framework, conceptual delimitation of inventory management, and reasons for storing inventories are all included. The arrangement and procedures that purposefully choose and direct which things to be organized, when to order what should be maintained in stock, and how many of them are stocked are referred to as inventory management (Toomey, 2016). Therefore, the overall goal of inventory management is to increase company productivity, maintain inventory expenses within realistic boundaries, and minimize inventory investment while providing customers with a suitable level of service.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

The main purpose of this study is to examine the effect of inventory management on organisational performance with Accra Brewery Limited as case study. This chapter defines the methodology employed by the researcher in the conduct of the study. The study covered under this chapter include the research designed, population of the study, sample size and sampling, data collection instruments, data analysis and chapter summary.

3.1 Research Design

A researcher's research design is the overarching strategy they employ to solve their research challenge by integrating the many parts of their study into a coherent whole (Mellenbergh, 2016). Research design is an important tool in most research work and is seen as a game or master plan of a research that immensely describes and ponders on how the study is to be conducted. The research approach is quantitative research which seeks to collect information from existing and potential customers using sampling methods and sending out available analyses, questionnaires (Cohen, 2017). The design was to also facilitate the generation of much data from respondents selected for the study.

3.2 Population of the study

For any given collection of characteristics, the entire set is referred to as the population, while a representative sample would be drawn from that population. The population under consideration for the study is called the study population. A study's sample is a

subset of the larger population under consideration (Gill and Johnson, 2015). Participants include both entry-level and experienced workers, as well as members of Accra Brewery Limited's management team. Accra Brewery Limited employees are the primary population for this research. Seven hundred and fifty people make up the overall study population (Annual Accra Brewery Limited 2019). Everyone on staff was the focus of the research.

3.3 Sample Size and Sampling Techniques

Sampling is the practice of selecting a representative sample from a larger population for the purpose of generalization or hypothesis testing. Utilized in determining the appropriate evaluation strategy (number of participants, interviews, or samples of work) (Ghosh, 2015). The management team at Accra Brewery Limited reportedly contemplated using purposeful sampling methods. Purposive sampling methods provide the most advantageous means of choosing a study's sample. Why? Because with the right methods, researchers can glean a wealth of information from their acquired data using a purposive sampling approach. Researchers can then elaborate on the resounding impact their results have on the general populace. One hundred thirty-five (135) individuals of Accra Brewery Limited's junior and senior staff were selected using a purpose sampling technique. The researcher was able to focus on persons in positions of authority over training and development since they were thought to possess the most relevant and usable information.

3.4 Data Dependability

According to Orodho (2014), the estimation's dependability is measured by how consistently a given estimation method yields the same results when applied to

different simulated beginnings. Reliability of the instrument was guaranteed through revisions of the weakness of the instruments noticed the pilot testing.

3.5 Data Validity

Validity is how much the instrument measures and creates results that really address the peculiarity under study. Mulusa (2012) described validity as reach out to which the thing measures or describes what it is supposed to measure or described.

3.6 Data collection instruments

Questionnaires were the primary method of data collection in this study. According to Creswell (2017), primary data is information obtained in a novel way since it is collected in a non-traditional manner. Structured questionnaires were employed for the initial data collection. The process of analysis was facilitated by the uniformity brought about by the use of structured questionnaires; this allowed for straightforward coding of the collected data within the analysis software. The rationale for using the questionnaires is that each answered is posed the very set of inquiries that give a proficient approach to gathering reactions from the respondents before investigation (Saunders et al., 2003). Just a single sort of study was given to both junior, Senior and management staff to answer. These questionnaires comprised of thirty-two (32) open and close-ended questions which were used in gathering essential information for the study. The close-ended questions are the type that give command over giving precise reaction decisions (Yes or No). However, open-ended questions were limited. These type of questions were to allow respondents to offer their viewpoints and perceptions on the study.

3.7 Data analysis

Analyzing data is the process of making sense of large amounts of information by identifying patterns and drawing conclusions. It is been called creative and fascinating, but also untidy and unsure and tedious (Mugenda 2015). The quantitative data that is created from the questionnaires is altered by the researcher to guarantee the consistency of responses. SPSS software programming were used in the data analysis. These tools helped with summing up data into table and concluded inventory management and organisational performance of Accra Brewery Limited.

3.8 Area of Study

One definition of the study area is the location(s) for which the report's (and/or map's) statistical analyses are conducted (Leblance, 2012). This research was carried out in the Accra Metropolitan Assembly, which is part of the Greater Accra Region in the Ghanaian capital of Accra. Workers from Accra Brewery Limited and the city of Accra's other breweries and distilleries are included. It can be found in Accra not far from the Graphic Cooperation Headquarters on Graphic Main Road. Employees participated in the study so that the researcher could evaluate the different types of inventory management utilized by businesses like Guinness Ghana Limited. At the time that data was collected, every single respondent either based themselves in Accra or commuted there daily for employment.

3.9 Chapter Summary

The research approach utilized to collect the study's data is summarized in the chapter. Introduction, research design, study population, sampling techniques, sample size, data collection tools, data collection techniques, data analysis, and study area are all

included. To ensure that the responses to the questionnaire were consistent, the researcher revised the quantitative data that was produced. SPSS was used to analyze the data. This helped to summarize data into tables and also deduce inventory management and organisational performance of Accra Brewery Limited.

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CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Introduction

For the purpose of this research inventory management and organisational performance: investigated. A focus on the operations of Accra Brewery Limited was particularly prominent. This chapter places a lot of attention on the data analysis as well as the research's conclusions and findings. The main objectives of the study were to explore the effects of inventory management on performance at Accra Brewery Limited, to determine the relationship between inventory management practices and organizational performance of Accra Brewery Limited and to identify the challenges of inventory management at Accra Brewery Limited. The chapter covered the demographics of the respondents followed by the validity and reliability tests, descriptive statistics, testing of the hypothesis, summary of findings and discussions of the results. The table 4.1 presents the results.

4.2 Demographic statistics

Employees of Accra Brewery Limited were sent a total of 135 questionnaires in order to gather information for the purpose of establishing the study's objectives. The study participants successfully returned all 135 questionnaires to the researchers, yielding a response rate of 100%—which in this case might be regarded as good. There were found to be no problems with the questionnaires that had been obtained after careful screening and analysis. As a result, the statistical analysis took into account the information from all surveys. A wide range of demographic parameters were considered for the objectives of this study. Age, gender, years of existence, and educational background are all important considerations. Contextual information from

research participants was collected to help researchers better understand the features of the data source used in the subsequent analysis.

Table 4.1: Respondents' Demographics

| Profile | Characteristics | Frequency | Percentage |
|---|---------------------------------------|------------|--------------|
| Gender | Female | 72 | 53.3 |
| | Male | 63 | 46.7 |
| | Total | 135 | 100.0 |
| Age | 23 years and below | 12 | 8.9 |
| | 24–29 years | 18 | 13.3 |
| | 30–35 years | 69 | 51.1 |
| | 36–40 years | 24 | 17.8 |
| | 41 years and above | 12 | 8.9 |
| | Total | 135 | 100.0 |
| Educational Background | Bachelor's Degree | 81 | 60.0 |
| | HND | 12 | 8.9 |
| | Master's Degree | 42 | 31.1 |
| | Total | 135 | 100.0 |
| Department | HRM | 3 | 2.2 |
| | Management | 18 | 13.3 |
| | Marketing | 12 | 8.9 |
| | Procurement | 99 | 73.3 |
| | Total | 135 | 100.0 |
| Area of expertise | Logistics and Supply Chain Management | 63 | 46.7 |
| | Operations Management | 12 | 8.9 |
| | Procurement Management | 54 | 40.0 |
| | Total | 135 | 100.0 |
| Position in the firm | Operations Manager | 42 | 31.1 |
| | Supply Chain Manager | 78 | 57.8 |
| | Total | 135 | 100.0 |
| Years the firm has been in operation | 11-15 years | 15 | 11.1 |
| | 16-20 years | 18 | 13.3 |
| | 2-5 years | 36 | 26.7 |
| | 21 years & above | 27 | 20.0 |
| | 6-10 years | 30 | 22.2 |
| | Less than 2 year | 6 | 4.4 |
| | Total | 135 | 100.0 |
| Number of employees in the firm | 10-29 employees | 3 | 2.2 |
| | 30-50 employees | 21 | 15.6 |
| | 6-9 employees | 9 | 6.7 |
| | Less than 6 employees | 3 | 2.2 |
| | More than 50 employees | 96 | 71.1 |
| | Total | 135 | 100.0 |
| Type of ownership | Fully foreign owned | 15 | 11.1 |
| | Fully locally owned | 96 | 71.1 |
| | jointly Ghanaian & foreign owned | 21 | 15.6 |
| | Total | 135 | 100.0 |

Source: Field Data, 2022

The respondents' demographics indicate that 72 of the respondents were female representing 53.3% whereas 63 of the respondents were male representing 46.7%. This clearly shows that gender balanced was highly considered where both male and female ideas were solicited to arrive at logical conclusions even though the female respondents were more than the male respondents.

Concerning their age, 12 of the respondents were 23 years and below representing 8.9%, 18 of the respondents were between 24–29 years representing 13.3%, 69 of the respondents were between 30–35 years representing 51.1%, 24 of the respondents were between 36–40 years representing 17.8% and 12 of the respondents were 41 years and above representing 8.9%.

The respondents' educational background, 81 of the respondents were Bachelor's Degree graduate representing 60.0%, 12 of the respondents were Higher National Diploma graduate representing 8.9% and 42 of the respondents were Master's Degree graduate representing 31.1%. Concerning their department, 3 of the respondents were in the Human Resource Management department representing 2.2%, 18 of the respondents were in their Management unit representing 13.3%, 12 of the respondents were in the Marketing unit representing 8.9% and 99 of the respondents were in the Procurement unit representing 73.3%. Area of expertise of the respondents, 63 of the respondents were Logistics and Supply Chain Management expert representing 46.7%, 12 of the respondents were Operations Management expert representing 8.9% 54 of the respondents were Procurement Management expert representing 40.0%. Concerning the respondents' Positions in the firms, 42 of the respondents were Operations Managers in the firms representing 31.1% whereas 78 Supply Chain Managers in the firms representing 57.8%. Years that the firms for the study have been in operations, 15 of

the respondents indicate that their firms have been in operations for about 11-15 years representing 11.1%, 18 of the respondents indicate that their firms have been in operations for about 16-20 years representing 13.3%, 36 of the respondents indicate that their firms have been in operations for about 2-5 years representing 26.7%, 27 of the respondents indicate that their firms have been in operations for about 21 years and above representing 20.0%, 30 of the respondents indicate that their firms have been in operations for about 6-10 years representing 22.2% and 6 of the respondents indicate that their firms have been in operations for less than 2 year representing 4.4%

Number of employees in the firms for the study, 3 of the respondents affirmed that their firms have 10-29 employees representing 2.2%, 21 of the respondents affirmed that their firms have 30-50 employees representing 15.6%, 9 of the respondents affirmed that their firms have 6-9 employees representing 6.7%, 3 of the respondents affirmed that their firms have less than 6 employees representing 2.2% and 96 of the respondents affirmed that their firms have more than 50 employees representing 71.1%.

The issues of the type of ownership of the firms, 15 of the respondents were in a fully foreign owned organization representing 11.1%, 96 of the respondents were in fully locally owned organizations representing 71.1% and 21 of the respondents were in a jointly Ghanaian and foreign owned organizations representing 15.6%.

4.3 Validity and Reliability Tests

Validity is the degree to which a measure or set of measures properly captures the study's constructs (Bhattacharjee, 2012). Reliability measures how consistently different measurements of the same variable are made. It wonders whether different measures taken at various periods would provide comparable results. A variable's

measurability, or the quantity of data that can be extracted from a given scale, will depend on the nature of the variable. There is always some degree of error in each given measurement, which restricts the amount of data that can be obtained (Bhattacharjee, 2012). Reliability, in the context of survey reproducibility, is the degree to which a given measurement scale score may be expected to remain stable over time. "(Bhattacharjee, 2012)". It is claimed that reliability is especially crucial when latent variables are derived from underlying item scales. It is crucial to determine if the same set of items would yield the same results if they were administered to the same sample group repeatedly since these scales are made up of a collection of connected questions meant to evaluate underlying components. Only when it is evident that a test instrument's variables consistently elicit steady answers after numerous measurements of the instrument's surveys are they considered to be trustworthy (Bhattacharjee, 2012). The scale utilized in this study's analysis was evaluated for internal consistency and reliability using Cornbrash's Alpha coefficient. The internal reliability of multi-item summarized rating scales is measured by Cronbach's Alpha. The scale has values between 0 and 1, with a higher score indicating more reliability. The dependability of the instrument was shown by a coefficient reliability of 0.70 or above (Cronbach, 2004).

Also, in order to analyze the data in relation to ascertain the validity threshold, the measurement of the response using Kaiser Mayer Olkin test to be certain that the data is acceptable to proceed to the inferential statistics to make fair and valid conclusions. Values greater than 0.5 are considered suitable and acceptable by Kaiser (1974). If the value is less than 0.5, then further information is needed to make a determination about

which variable to include in the analysis. Results on the constructs' dependability and validity are shown in table 4.2.

Table 4.2: Reliability tests

| Variables | Number of items | Cronbach's Alpha | KMO | Approx. Chi Square | Variance (%) |
|--------------------------|-----------------|------------------|------|--------------------|--------------|
| Just-In-Time | 9 | .859 | .767 | 460.784 | 50.745 |
| ABC Classification | 5 | .907 | .814 | 515.005 | 73.488 |
| Fixed Order Quantity | 3 | .786 | .517 | 165.657 | 70.409 |
| Vender Managed Inventory | 3 | .722 | .634 | 105.842 | 66.600 |
| Operational Performance | 4 | .936 | .853 | 456.923 | 84.244 |

Source: Field Data, 2022

The variable just in time Cronbach's Alpha of (.859), Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.767), Bartlett's Test of Sphericity Approx Chi-Square (460.784) and Variance (50.745%) are all within the acceptable threshold to affirm that items for the construct are highly reliable.

The variable ABC Classification Cronbach's Alpha of (.907), Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.814), Bartlett's Test of Sphericity Approx Chi-Square (515.005) and Variance (73.488%) are all within the acceptable threshold to affirm that items for the construct are highly reliable.

Cronbach's alpha for the fixed order quantity is .786, the Kaiser-Meyer-Olkin measure of sampling adequacy is .517, the Bartlett's test of sphericity approx chi-square is .657, and the variance is 70.409%; all of these values are well within the range of acceptability, indicating that the construct items are highly reliable.

It can be safely stated that the Cronbach's Alpha of (.722), Kaiser-Meyer-Olkin Measure of Sampling Adequacy (.634), Bartlett's Test of Sphericity Approx Chi-Square (105.842), and Variance (66.600%) of the Vender Managed Inventory are all above the cutoff for reliability. Cronbach's Alpha for the Vender Managed Inventory is (.936), the Kaiser-Meyer-Olkin Measure of Sampling Adequacy is (.853), the Bartlett's Test of Sphericity Approx Chi-Square is (456.923) and the Variance is (84.244%) all within the acceptable threshold to affirm that items for the construct are highly reliable.

4.3 Exploratory factor loadings of items

The exploratory factors loadings of the items for the study were considered to be able to identify the items that can be considered in the inferential analysis and the table 4.2.1 presents the results

Table 4.3: Exploratory Factor loadings of constructs items

| Just-In-Time | ABC Classification | Fixed Order Quantity | Vender Managed Inventory | Operational Performance |
|---------------------|---------------------------|-----------------------------|---------------------------------|--------------------------------|
| .534 | .770 | .889 | .773 | .822 |
| .705 | .881 | .550 | .515 | .833 |
| .780 | .543 | .674 | .710 | .831 |
| .589 | .665 | | | .883 |
| .680 | .816 | | | |
| .669 | | | | |
| .652 | | | | |
| .644 | | | | |

Source: Field Data, 2022

The exploratory factor loadings of the items with loadings of .5 were then considered during the inferential analysis and because all the items loaded .5 and above, there were all deemed valid during the inferential analysis.

4.4 Just-In-Time

The Just-In-Time for the study was assessed and in doing that, 9 items were selected and the table 4.4 presents the results.

Table 4.4: Descriptive Statistics for Effects of Inventory Management on Performance

| Items | Min | Max | Mean | SD |
|--|-----|-----|-------|--------|
| Operation of Just –In-Time (JIT) purchasing system-where no safety stock are kept | 1.0 | 7.0 | 4.644 | 1.8587 |
| Agreement with suppliers for short cycle deliveries | 1.0 | 7.0 | 5.178 | 1.4397 |
| Accurate prediction of suppliers dates | 1.0 | 7.0 | 5.089 | 1.5810 |
| Operation of materials requirement planning system-where bills of materials are 100% accurate. | 1.0 | 7.0 | 5.000 | 1.6115 |
| Little or no expediting | 1.0 | 7.0 | 4.114 | 1.8684 |
| The firm only replenished what is being needed by the customers | 1.0 | 7.0 | 4.511 | 1.8279 |
| The firm only stores what is being required in the production | 1.0 | 7.0 | 4.886 | 1.6188 |
| It uses it to reduce the stock and the carting cost associated in the firm | 1.0 | 7.0 | 4.733 | 1.8129 |
| The firm uses just with a name of ensuring zero defect product | 1.0 | 7.0 | 5.556 | 1.1887 |

Source: Field Data, 2022

The mean value of 4.644 and standard deviation value of 1.8587 that the respondents are not sure as to whether the organizations for the study use Just –In-Time (JIT) purchasing system-where no safety stock are kept or not. The mean value of 5.178 and standard deviation value of 1.4397 indicate respondents' affirmation that the organizations for the study have an agreement with suppliers for short cycle deliveries. The mean value of 5.089 and standard deviation value of 1.5810 indicate respondents' affirmation that the organizations for the study ensure an accurate prediction of their suppliers' dates.

With a mean of 5.000 and a standard deviation of 1.6115, respondents say that the study's organizations use a method for planning their material requirements in which

the bills of materials are always correct. The respondents are not aware that the study's organisations have little to no expediting, as seen by the mean value of 4.114 and standard deviation value of 1.8684. According to the mean value of 4.511 and standard deviation value of 1.8279, the respondents are unsure if the study's firms merely refilled what clients required or not. The respondents are unsure if the study organizations just store what is needed for production, as seen by the mean value of 4.886 and standard deviation value of 1.6188. The respondents are unsure if the organizations for the study utilize to lower the stock and the carting cost linked in the company, as indicated by the mean value of 4.733 and standard deviation value of 1.8129. The respondents' confirmation that the organizations for the study are assuring zero defect product is shown by the mean value of 5.556 and standard deviation value of 1.1887. The descriptive statistics indicate that the organizations for the study are applying Just-In-Time concept. There was general positive agreement on the issues of inventory management on performance.

4.5 ABC Classification

The ABC Classification for the study was assessed and in doing that, 5 items were selected and the table 4.5 presents the results.

Table 4.5: Descriptive Statistics for ABC Classification for the relationship between inventory management practices and organizational performance

| Items | Min | Max | Mean | SD |
|--|-----|-----|-------|--------|
| The firm uses ABC analysis as stock classification system to allocate time and finance in stock practices | 1.0 | 7.0 | 5.356 | 1.4836 |
| The firm uses ABC analysis to assess the status of the items in the stocks. | 1.0 | 7.0 | 5.311 | 1.5379 |
| The firm uses ABC analysis practices to determine the specific attestation required by each group of stocks. | 1.0 | 7.0 | 5.333 | 1.4812 |
| The firm divides stocks in the warehouse into different classification of A,B and C | 1.0 | 7.0 | 5.267 | 1.6032 |
| The firm is able to determine the most crucial items in the production of the organisation. | 1.0 | 7.0 | 5.455 | 1.4587 |

Source: Field Data, 2022

The mean value of 5.356 and standard deviation value of 1.4836 indicate respondents' affirmation that the organizations for the study use ABC analysis as stock classification system to allocate time and finance in stock practices. The mean value of 5.311 and standard deviation value of 1.5379 indicates respondents' affirmation that the organizations for the study use ABC analysis to assess the status of the items in the stocks. The respondents' confirmation that the organizations for the study employ ABC analysis procedures to identify the precise attestation required by each group of stocks is shown by the mean value of 5.333 and standard deviation value of 1.4812. The respondents' confirmation that the organizations for the research separate warehouse stock into distinct classifications of A, B, and C is shown by the mean value of 5.267 and standard deviation value of 1.6032. The organizations for the research are able to identify the most important elements in the production of the organization, according to respondents, as shown by the mean value of 5.455 and standard deviation value of 1.4587. There was general positive agreement on the issues of relationship between inventory management practices and organizational performance.

4.6 Fixed Order Quantity

The Fixed Order Quantity for the study was assessed and in doing that, 3 items were selected and the table 4.6 presents the results.

Table 4.6: Descriptive Statistics for ABC Classification

| Items | Min | Max | Mean | SD |
|--|-----|-----|-------|--------|
| The firm uses fixed order quantity to know the quantity to know the quantity of stock to order at any given time | 1.0 | 7.0 | 5.200 | 1.6060 |
| The firm uses fixed order quantity to help in determining the exact time the firm needs to make an order. | 1.0 | 7.0 | 5.556 | 1.1887 |
| There is high level of the customer service level due to the adoption of the practices | 1.0 | 7.0 | 5.182 | 1.6615 |

Source: Field Data, 2022

The mean value of and standard deviation value of indicate respondents affirmation that the organizations for the study.

4.7 Vender Managed Inventory

The Fixed Order Quantity for the study was assessed and in doing that, 3 items were selected and the table 4.6 presents the results.

Table 4.7: Descriptive Statistics for Vender Managed Inventory

| Items | Min | Max | Mean | SD |
|--|-----|-----|-------|--------|
| The firm purchase specific items from linked suppliers of the inventory of the organisation | 2.0 | 7.0 | 5.600 | 1.2590 |
| There is a reduction of the damages due to the long term storage of inventory in the company | 1.0 | 7.0 | 4.756 | 1.7724 |
| The firm saves time and cost due to the adoption of the practices in the organisation | 1.0 | 7.0 | 5.467 | 1.4289 |

Source: Field Data, 2022

The mean value of 5.600 and standard deviation value of 1.2590 indicate respondent's affirmation that the organizations for the study purchase specific items from linked suppliers of the inventory of the organizations. The organizations for the study are unsure whether there is a reduction in the losses due to the long-term storage of goods in the company, as indicated by the mean value of 4.756 and standard deviation value of 1.7724, according to respondents. The respondents' confirmation that the study's organizations save time and cost because they have adopted the techniques in their companies is shown by the mean value of 5.467 and the standard deviation value of 1.4289.

4.8 Operational Performance

The Operational Performance for the study was assessed and in doing that, 4 items were selected and the table 4.6 presents the results.

Table 4.8: Descriptive Statistics for Operational Performance

| Items | Min | Max | Mean | SD |
|---|-----|-----|-------|--------|
| Reduction in cost of operation | 1.0 | 7.0 | 4.933 | 1.7112 |
| There is declined of overall administration and inventory cost. | 1.0 | 7.0 | 4.578 | 1.7639 |
| There is increase operation efficiency | 2.0 | 7.0 | 4.955 | 1.4820 |
| Timely response to customers | 1.0 | 7.0 | 5.111 | 1.7478 |

Source: Field Data, 2022

The mean value of 4.933 and standard deviation value of 1.7112 indicate that the respondents are not sure as to whether the organizations for the study are achieving reduction in cost of operation or not. The mean value of 4.578 and standard deviation value of 1.7639 indicate that the respondents are not sure as to whether the organizations for the study are experiencing declining of overall administration and inventory cost or not. The mean value of 4.955 and standard deviation value of 1.4820

indicate that the respondents are not sure as to whether the organizations for the study are experiencing an increase in operations of efficiency or not. The mean value of 5.111 and standard deviation value of 1.7478 indicate respondents' affirmation that the organizations for the study are ensuring timely response to customers.

4.9 Correlations among the constructs for the study

It was quite appropriate to determine how the constructs for the study are related because constructs may either have positive or negative relationship to help organizations to adopt the right strategy to help them survive in an intense competition.

The table 4.9 presents the results

Table 4.9: Correlations among the constructs

| | | <i>JIT</i> | <i>ABC</i> | <i>FOQ</i> | <i>VIM</i> | <i>OP</i> |
|------------|----------------------------|------------|------------|------------|------------|-----------|
| <i>JIT</i> | <i>Pearson Correlation</i> | 1 | .630** | .748** | .715** | .633** |
| | <i>Sig. (2-tailed)</i> | | .000 | .000 | .000 | .000 |
| | <i>N</i> | 135 | 135 | 135 | 135 | 135 |
| <i>ABC</i> | <i>Pearson Correlation</i> | .630** | 1 | .853** | .705** | .399** |
| | <i>Sig. (2-tailed)</i> | .000 | | .000 | .000 | .000 |
| | <i>N</i> | 135 | 135 | 135 | 135 | 135 |
| <i>FOQ</i> | <i>Pearson Correlation</i> | .748** | .853** | 1 | .779** | .513** |
| | <i>Sig. (2-tailed)</i> | .000 | .000 | | .000 | .000 |
| | <i>N</i> | 135 | 135 | 135 | 135 | 135 |
| <i>VIM</i> | <i>Pearson Correlation</i> | .715** | .705** | .779** | 1 | .516** |
| | <i>Sig. (2-tailed)</i> | .000 | .000 | .000 | | .000 |
| | <i>N</i> | 135 | 135 | 135 | 135 | 135 |
| <i>OP</i> | <i>Pearson Correlation</i> | .633** | .399** | .513** | .516** | 1 |
| | <i>Sig. (2-tailed)</i> | .000 | .000 | .000 | .000 | |
| | <i>N</i> | 135 | 135 | 135 | 135 | 135 |

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

Source: Field Data, 2022

The relationship between just-in-time and ABC classification, the coefficient of .630** and $P < .000$ statistically indicate that there is a positive and significant relationship between just-I-time and ABC classification.

The relationship between just-in-time and fixed order quantity, the coefficient of .748** and $P < .000$ statistically indicate that there is a positive and significant relationship between just-in-time and fixed order quantity.

The relationship between just-in-time and vendor managed inventory, the coefficient of .715** and $P < .000$ statistically indicate that there is a positive and significant relationship between just-in-time and vendor managed inventory.

The relationship between just-in-time and operational performance, the coefficient of .633** and $P < .000$ statistically indicate that there is a positive and significant relationship between just-in-time and operational performance. The relationship between ABC classification and fixed order quantity, the coefficient of .853** and $P < .000$ statistically indicate that there is a positive and significant relationship between ABC classification and fixed order quantity. The relationship between ABC classification and vendor inventory managed, the coefficient of .705** and $P < .000$ statistically indicate that there is a positive and significant relationship between ABC classification and vendor inventory managed. The relationship between ABC classification and operational performance, the coefficient of .399** and $P < .000$ statistically indicate that there is a positive and significant relationship between ABC classification and operational performance.

The relationship between fixed order quantity and vendor inventory management, the coefficient of .758** and $P < .000$ statistically indicate that there is a positive and significant relationship between fixed order quantity and vendor inventory management. The relationship between fixed order quantity and operational performance, the coefficient of .758** and $P < .000$ statistically indicate that there is a

positive and significant relationship between fixed order quantity and operational performance.

The correlation between vendor inventory management and operational performance, coefficient of .516**, and $P < .000$ statistically show that there is a favorable and substantial correlation between these two variables.

4.10 Regression results

The effect of inventory management practices on operational performance needed to be determined. To estimate the degree to which independent factors influence the dependent variable, a straightforward linear regression analysis was deemed required. The table 4.10 presents the results.

Table 4.10: Effect of Inventory Management Practices on operational performance

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | |
|------------|------------------------------------|---------------------------------|----------------------------------|----------------------------|-------------------|
| 1 | .645 ^a | .416 | .398 | 1.19030 | |
| | | ANOVA^a | | | |
| | Sum of Squares | df | Mean Square | F | Sig. |
| Regression | 130.998 | 4 | 32.749 | 23.115 | .000 ^b |
| Residual | 184.186 | 130 | 1.417 | | |
| | | Coefficients^a | | | |
| | Unstandardized Coefficients | | Standardized Coefficients | | |
| | B | Std. Error | Beta | t | Sig. |
| (Constant) | .814 | .494 | | 1.648 | .102 |
| JIT | .667 | .136 | .523 | 4.899 | .000 |
| ABC | -.179 | .154 | -.150 | -1.157 | .249 |
| FOQ | .179 | .193 | .146 | .928 | .355 |
| VIM | .170 | .145 | .134 | 1.175 | .242 |

Source: Field Data, 2022

The statistical R Square of .416 explains the total effect of the independent variables thus Inventory Management Practices on the dependent variable operational performance. The R Square of .416 explains that Inventory Management Practices can overall affect operational performance of 42%. This further explains that Inventory Management Practices are good predictors of achieving good operational performance. The Unstandardized Coefficients (B= .667; Std. Error = .136) and the Standardized Coefficients (Beta= .523; t= 4.899 and P< 0.000) statistically indicate that just-in-time has a positive and significant effect on operational performance. The Unstandardized Coefficients (B= -.179; Std. Error = .154) and the Standardized Coefficients (Beta= -.150; t= -1.157 and P< 0.249) statistically indicate that ABC classification has a negative and insignificant effect on operational performance.

The Unstandardized Coefficients (B= .179; Std. Error = .193) and the Standardized Coefficients (Beta= .146; t= .928 and P< 0.355) statistically indicate that fixed order quantity has a positive but insignificant effect on operational performance. The Unstandardized Coefficients (B= .170; Std. Error = .145) and the Standardized Coefficients (Beta= .134; t= 1.175 and P< 0.242) statistically indicate that vendor inventory managed has a positive but insignificant effect on operational performance.

Table 4.11: Hypothesis Testing and Findings

| Hypothesis | Relationship | Beta | t | p | Remarks |
|------------|--------------|-------|--------|------|----------------------|
| H1 | JIT-- >OP | .523 | 4.899 | .000 | Supported |
| H2 | ABC-- >OP | -.150 | -1.157 | .249 | Not-supported |
| H3 | FOQ-- >OP | .146 | .928 | .355 | Not-supported |
| H4 | VIM-- >OP | .134 | 1.175 | .242 | Not-supported |

Source: Field Data, 2022

4.11 Discussion of Results

The results of the study, which assessed the effect of just-in-time on operational performance, show that just-in-time has a favorable and significant impact on operational performance. Inventory management is a critical concern for businesses in all industries (Mentzer et al., 2017). As a result, businesses must manage their inventories effectively and efficiently. Concerns concerning inventory management are prevalent. Inventory management is first and foremost concerned with the level of customer service (request satisfaction), i.e., having the appropriate goods in sufficient quantities, in the appropriate locations, and at the appropriate times. The price of obtaining and sending inventories is another issue (Stevenson, 2016). The plans and procedures that purposefully determine and direct which things to arrange, when to order, what should be kept in store, and how much of them are stocked are referred to as inventory management (Toomey, 2016).

Since Just-in-Time production is a "pull" system, legitimate orders indicate when an item should be made. Demand pull enables a business to provide exactly what is required, in the appropriate quantity, and at the appropriate time. It is an improvement mindset in which non-value-added activities (or wastes) are found and eliminated (Investopedia, 2016). The Just-in-Time approach is a Japanese method of thinking about assembly that entails having the correct materials in the right quantity and quality at the right location and time. Increases in quality, benefit, and viability, enhanced consistency, and decreases in expenses and waste are all achieved through the use of the just-in-time method.

The results of the study, which looked at the effect of ABC classification on operational performance, show that this classification has a minimally negative impact on operational performance. Class 'A' products are those that need greater consideration, prioritization, and management control since they are fundamental and more significant to the business. ABC is an inventory management method that divides the inventory of the organization into three classes. While Class "C" things have little value compared to Class "A" and "B" items, they require less consideration, less control, and less management. They also demand less consideration, less control, and less management (Zavanella and Zanoni, 2018). The ABC control model believes that while a significant portion of the inventory may consist of low-value products, a small portion of the organization may have more valuable general things within their activities (Mandal, 2016). The duplicating unit charge and the quantity of the objects in the organization determine the value of the inventory.

The study looked at the impact of fixed order quantity on operational performance, and the results show that fixed order quantity has a marginally favorable impact on operational performance. Fixed Order Quantity (EOQ) is an inventory management technique that entails ordering the quantity of inventory that will result in lower inventory costs by resolving the issue of the purchase price, holding costs, and ordering expenses within the organization's designated time frame. (Ogbo. 2016). The projected holding cost, buy cost, and ordering cost of the quantity the customer requests within a specific time frame are the key components of the fixed order quantity model.

The Study assessed the effect of vender inventory managed on operational performance and the results show that this relationship is positive but not significantly so. The Fixed Order Quantity models' methods for managing inventory. It stabilizes the inventory

level over time, usually a year. The company will have a predetermined inventory cost in this way. Levels of inventory and stock demand. Therefore, the organization was likely in possession of all the information pertaining to the demand for the inventory, the cost of placing an order, and the expense of keeping one unit of inventory on hand.

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CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The investigation was summed up and concluded in this final chapter. Suggestions for further study and investigation are included. The main purpose of this study was to examine the effects of inventory management and organisational performance using Accra Brewery Limited as a case study. The main objectives of the study were to explore the effects of inventory management on performance at Accra Brewery Limited, to determine the relationship between inventory management practices and organizational performance of Accra Brewery Limited and to identify the challenges of inventory management at Accra Brewery Limited. Some of the suggestions offered can be used to apply the link between inventory management practices and organizational performance, which may be used to boost Accra Brewery Limited's bottom line. The population sample consisted of 135 people who filled out a questionnaire; all 135 questionnaires were returned and evaluated, for a response rate of 100%.

5.2 Summary of Findings

The study assessed the effect of just-in-time on operational performance and the findings of the study indicate that just-in-time has a positive and significant effect on operational performance. The examined the effect of ABC classification on operational performance and the findings of the study indicate that ABC classification has a negative and insignificant effect on operational performance.

The study examined the effect of fixed order quantity on operational performance and the findings of the study indicate that fixed order quantity has a positive but insignificant effect on operational performance. The study assessed the effect of vendor

inventory managed on operational performance and the findings of the study indicate that vendor inventory managed has a positive but insignificant effect on operational performance. The study assessed the relationship between just-in-time and ABC classification and the coefficient statistically indicate that there is a positive and significant relationship between just-in-time and ABC classification. The study assessed the relationship between just-in-time and fixed order quantity and the coefficient statistically indicate that there is a positive and significant relationship between just-in-time and fixed order quantity. The study assessed the relationship between just-in-time and vendor managed inventory and the coefficient statistically indicate that there is a positive and significant relationship between just-in-time and vendor managed inventory. The study assessed relationship between just-in-time and operational performance and the coefficient statistically indicate that there is a positive and significant relationship between just-in-time and operational performance.

The study assessed relationship between ABC classification and fixed order quantity and the coefficient statistically indicate that there is a positive and significant relationship between ABC classification and fixed order quantity. The study assessed the relationship between ABC classification and vendor inventory managed and the coefficient statistically indicates that there is a positive and significant relationship between ABC classification and vendor inventory managed. The study assessed relationship between ABC classification and operational performance and the coefficient statistically indicate that there is a positive and significant relationship between ABC classification and operational performance. The study assessed the relationship between fixed order quantity and vendor inventory management, the coefficient statistically indicate that there is a positive and significant relationship between fixed order quantity and vendor inventory management.

The study examined the relationship between fixed order quantity and operational performance and the coefficient statistically indicate that there is a positive and significant relationship between fixed order quantity and operational performance. The study examined the relationship between vendor inventory management and operational performance and the coefficient statistically indicate that there is a positive and significant relationship between vendor inventory management and operational performance.

5.3 Conclusions of the study

The study examined the effect of just-in-time on operational performance, and it was determined that JIT had a favorable and considerable effect on operational performance. The study looked at how ABC classification affected operational performance, and the results indicated that it had a negative and negligible impact on the latter.

Analysis of the impact of fixed order quantity on productivity led the researchers to the conclusion that this factor has a slight but beneficial impact on business output. The research looked at how controlled vendor inventories affected operational performance and found that it had a favorable, albeit small, impact. The research examined the link between JIT and ABC classification, and the results showed that there is a positive and significant connection between the two. The study evaluated the connection between JIT and fixed order quantity, and the results indicated that the connection is positive and statistically significant. There is a favorable and significant association between just-in-time and vendor controlled inventory, according to the study's findings. A favorable and statistically significant correlation was found between just-in-time and operational success, which led the researchers to infer that the two are intertwined.

Based on the research conducted, it was determined that there is a positive and statistically significant association between ABC categorization and fixed order quantity. Results from an analysis of the connection between ABC categorization and vendor-managed stock showed a positive and statistically significant link between the two concepts. The research looked at how ABC classification affected operational performance, and the results indicated a favorable, statistically significant connection between the two.

The study evaluated the connection between fixed order quantity and vendor inventory management, and the results indicated a favorable, statistically significant connection between the two concepts. This research looked at the connection between set order quantities and business outcomes, and the results indicated a positive, statistically significant connection between the two. Based on the research conducted, it was determined that there is a favorable and statistically significant association between vendor inventory management and operational performance.

5.4 Recommendations

When allocating resources for stock practices, management should utilize the ABC analysis as a stock categorization method. The ideal way to devote resources and effort for stock practices will be for organizations to use ABC analysis as stock categorization.

The capacity of businesses to use fixed order quantity will put them in the best position to know the quantity of stock to order at any given moment, thus management should utilize fixed order quantities to know the quantity of stock to order at any given time.

Management of organizations should recognize that there is the need for them to increase operation efficiency so that they will be able to reduce operational cost and increase productivity so that they can withstand global competition.

5.5 Areas for further study

Future research can take into account the moderating impact of information technology on the link between inventory management practices and operational performance since this study evaluated the impact of inventory management practices on operational performance.



REFERENCES

- Anichebe, F., Timbirimu, M., Kiizah, P., & Olutayo, K. O. (2017). Inventory management and organizational profitability at Gumutindo coffee cooperative enterprise limited, Uganda.
- Anichebe, N.A and Agu, O.A (2017) Effect of Inventory Management on Organisational Effectiveness, Information and Knowledge Management. 3, (8)
- Bennett, D. & Klug, F. (2019). Logistics Supplier Integration in the Automotive Industry. *International Journal of Operations & Production Management*, 32(11), pp. 1281-1305.
- Bennett, D. & Klug, F., 2012. Logistics Supplier Integration in the Automotive Industry. *International Journal of Operations & Production Management*, 32(11), pp. 1281-1305.
- Campling, F., & Michelson, M. P. (2018). Navigators through the storm: A review of organization theories and the behavior of incumbent firms during transitions. *Environmental innovation and societal transitions*, 26, 44-63.
- Chase, F. (2017). The Drivers of Small Independent Retailers' Competitive Behaviour. *How the pandemic containment measures affect frontline employees: a mixed-methods study in grocery retail*, 249.
- Cohen, A. (2017). Organizational Commitment and Turnover: A Meta-Analysis. *Academy of management journal*, 36(5), 1140-1157.
- Coyle, D. (2017). Do-it-yourself digital: the production boundary and the productivity puzzle.
- Creswell, J. D. (2017). Mindfulness interventions. *Annual review of psychology*, 68, 491-516.
- Edwin S and Florence M (2019) The Effect of Inventory Management on Profitability of Cement Manufacturing Companies in Kenya: A Case Study of Listed Cement Manufacturing Companies in Kenya, *International Journal of Management and Commerce Innovations* 3(2) 111-119,
- Eymas, F. (2017). The Drivers of Small Independent Retailers' Competitive Behaviour. *How the pandemic containment measures affect frontline employees: a mixed-methods study in grocery retail*, 249.

- Florence, E. O., Olutokunbo, T., Obafemi, F., & Araoye, E. (2019). Effective inventory management practice and firm performance: Evidence from Nigerian consumable goods firms. *American International Journal of Business Management*, 4(5), 65-76.
- Gaur, Jigyasu & Bhattacharya, Sourabh. (2015). The relationship of financial and inventory performance of manufacturing firms in Indian context. *California Journal of Operations Management*, vol. 9, 2, pp.70–77.
- Ghosh, A. (2015). Banking industry specific and regional economic determinants of nonperforming loans: Evidence from US states. *Journal of financial stability*, 20, 93-104.
- Harland, C.M., (2018) Supply Chain Management, Purchasing and Supply Management, Logistics, Vertical Integration, Materials Management and Supply Chain Dynamics. Blackwell. 7(2) 112-120,
- Hutchins, M. (2017). The impacts of urbanisation and climate change on urban flooding and urban water quality: A review of the evidence concerning the United Kingdom. *Journal of Hydrology: Regional Studies*, 12, 345-362.
- Johson, R., Aguirre de Mata, J., Díez Galilea, A., Álvarez Alonso, M., Rodríguez Cielos, P., & Navarro Valero, F. (2016). Geomatic methods applied to the study of the front position changes of Johnsons and Hurd Glaciers, Livingston Island, Antarctica, between 1957 and 2013. *Earth System Science Data*, 8(2), 341-353.
- Johson R. A., Newell, W. T. and Vergin, R. C. (2016) Production and Operations Management Implementation Issues and Research Opportunities” *The International Journal of Logistics Management*. Vol. 9 No 2, p.1
- Kamau L W and Assumpta W. K (2017) 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) 72-98
- Knol, M. H., Dolan, C. V., Mellenbergh, G. J., & van der Maas, H. L. (2016). Measuring the quality of university lectures: development and validation of the instructional skills questionnaire (ISQ). *PloS one*, 11(2), e0149163.
- Koin V. R, Cheruiyot G. K and Mwangangi P (2016) Effect Of Inventory Management On The Supply Chain Effectiveness In The Manufacturing Industry In Kenya: A Case Study Of Tata Chemicals Magadi, *International Journal Of Social Sciences Management And Entrepreneurship* 1(2):189-202,

- Koin, M. S., & Cheruiyot, J. O. (2022). Inventory management practices and organizational productivity in nigerian manufacturing firms. *South Asian Journal of Marketing & Management Research*, 12(6and7), 1-13.
- Lambert, D. M., Cooper, M. C., and Pagh, J. D., (2017), "Supply Chain Management: The Effect of Inventory Management on Profitability Of Cement Manufacturing Companies In Kenya: A Case Study Of Listed Cement Manufacturing Companies In Kenya, *International Journal Of Management And Commerce Innovations* 3(2) 12-17
- Lambert, T. M., Lakshmanan, V., Stumpf, G. J., Ortega, K. L., Hondl, K., Cooper, K., & Brogden, J. (2016). Multi-Radar Multi-Sensor (MRMS) severe weather and aviation products: Initial operating capabilities. *Bulletin of the American Meteorological Society*, 97(9), 1617-1630.
- Langa, M., Ndelu, S., Edwin, Y., & Vilakazi, M. (2017). Hashtag: An analysis of the Fees Must Fall movement at South African universities.
- Leblance, G. (2012). Three-dimensional folding and functional organization principles of the Drosophila genome. *Cell*, 148(3), 458-472.
- Mandal, R. (2016). The head and neck cancer immune landscape and its immunotherapeutic implications. *JCI insight*, 1(17).
- Marchi, B., Zanoni, S., Zavanella, L. E., & Jaber, M. Y. (2018). Green supply chain with learning in production and environmental investments. *IFAC-PapersOnLine*, 51(11), 1738-1743.
- Mentzer, N., Kozuharov, S., & Petkovski, V. (2017). The impact of logistics management practices on company's performance. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(1), 245-252.
- Mousa, A. & Redd, F. (2016). Inventory management techniques and organization performance; a case study of nice house of plastics.
- Ng, T. W. (2017). Transformational leadership and performance outcomes: Analyses of multiple mediation pathways. *The leadership quarterly*, 28(3), 385-417.
- Nwaiku, M. S., & Ejechi, J. O. (2022). Inventory management practices and organizational productivity in Nigerian manufacturing firms. *South Asian Journal of Marketing & Management Research*, 12(6and7), 1-13.

- Nyabwanga, Robert Nyamau & Ojera, Patrick. (2012). Inventory management practices and business performance for small scale enterprises in Kenya. *KCA Journal of Business Management*, vol.4, No 1, pp.11–28.
- Nzoka, J. T., & Orodho, J. A. (2014). School management and students' academic performance: How effective are strategies being employed by school managers in secondary schools in Embu North District, Embu County, Kenya. *International Journal of Humanities and social science*, 4(9), 86-99.
- Oballah, D., Waiganjo, E. and Wachiuri, E. W. (2015). Effect of Inventory Management Practices on Organizational Performance in Public Health Institutions in Kenya: A Case Study of Kenyatta National Hospital. *International Journal of Education and Research*, Vol. 3 No 3, pp 704 – 714.
- Ogbad, E. E. (2016). Profitability through Effective Management of Material. *Journal of Economics and International Finance*, 1(4), 099-105
- Ogbo, A. I., Onekanma, I. V. and Ukpere, W I. (2014). The Impact of Effective Inventory Control Management on Organizational Performance: A Study of 7up Bottling Company Nile Mile
- Özdamar, T. H. (2016). Fed-batch biomolecule production by *Bacillus subtilis*: a state of the art review. *Trends in biotechnology*, 34(4), 329.
- Panigrahi, Ashok K. (2016). Relationship between inventory management and profitability in Fertilizer Industry of India: An Empirical Analysis” *Asia-Pacific Journal of Management Research and Innovation*, vol.10, No .4, pp. 291–303.
- Pradeep Singh (2008),” Inventory and Working Capital Management- An Empirical Analysis”, *The ICFAI Journal of Accounting and Research*, Vol.7, NO.2, pp.53-73.
- Quigley, C., Hambrick, J. (2016). CEO burnout, managerial discretion, and firm performance: The role of CEO locus of control, structural power, and organizational factors. *Long Range Planning*, 51(6), 953-971.
- Sahari, Salawati, Tinggi, Michael & Kadri, Norlina. (2018). Inventory management in Malaysian construction firms: Impact on performance. *SIU Journal of Management*, vol.2, No .1, pp.59–72
- Sanjiv Mittal, R.K. Mittal, Gagandeep Singh, Sunil Gupta (2014).”Inventory Management An empirical analysis of Indian cement companies. *Asia Pacific Journal of Marketing & Management Review*, vol.2,. No 7, pp.107–120.

- Saunders, M., Lewis, P., & Thornhill, A. (2003). Research methods for business students. *Essex: Prentice Hall: Financial Times*.
- Sczancoski, J. C., Maya-Johson, S., da Silva Pereira, W., Longo, E., & Leite, E. R. (2018). Atomic diffusion induced by electron-beam irradiation: an in-situ study of Ag structures grown from α -Ag₂WO₄. *Crystal Growth & Design*, 19(1), 106-115.
- Smaros S.J., Lehtonen, J.M. Appelquist, P. and Holmstrom, J. (2018) The Impact of Increasing Demand Visibility on Production and Inventory Control Efficiency International Journal of Physical Distribution and Logistics, 33(4) 445-465.
- Småros, A. (2018). Stock and Lead Time Optimization.
- Soni, Anita. (2017). Inventory management of engineering goods industry in Punjab: An empirical analysis. *International Journal of Multidisciplinary Research*, vol.2, No .2, pp.247–261.
- Stevenson, H. (2016). Just-in-time manufacturing system: from introduction to implement. *Available at SSRN 2253243*.
- Toomey, J. W. (2016). Inventory Management: Principles, Concepts, and Techniques. Norwell: Kluwer Academic Publishers
- Viplesh Shardeo (2015), “Impact of Inventory Management on the Financial Performance of the firm” *IOSR Journal of Business and Management (IOSRJBM)*. Vol. 17, No. 4, pp. 01-12.
- Walker, H., Di Sisto, L., McBain, D. (2008), “Drivers and barriers to environmental supply chain management practices: lessons from the public and private sectors”, *Journal of Purchasing and Supply Management* vol 14 No 1, pp 69–85
- Waters, C.D.J., (2016) Inventory Control and Management - 2nd Edition. Chichester: John Wiley & Sons Ltd
- Youngsters, J. (2020). Effectiveness of family-based behavior change interventions on obesity related behavior changes in children: a realist synthesis. *International Journal of Environmental Research and Public Health*, 17(11), 4099.
- Zahari, W., Yusoff, W., & Ismail, M. (2008). FM-SERVQUAL: a new approach of service quality measurement framework in local authorities. *Journal of Corporate Real Estate*, vol 10 No 2, pp 130-144

Zavanella, L., & Zanoni, D. (2011). Does China's emissions trading system foster corporate green innovation? Evidence from regulating listed companies. *Technology Analysis & Strategic Management*, 31(2), 199-212.

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SURVEY QUESTIONNAIRE

SECTION A: RESPONDENT'S BIOGRAPHY AND COMPANY PROFILE

1. Gender: ☐ Male ☐ Female
2. Age: ☐ 23 years and below ☐ 24–29 years ☐ 30–35 years
☐ 36–40 years ☐ 41 years and above
3. Educational Background:
☐ HND ☐ Bachelor's Degree ☐ Master's Degree ☐ Ph.D./Doctorate
4. Please, indicate the your department: ☐ Procurement ☐ Marketing ☐ HRM ☐ Management
5. Please, indicate your area of expertise ☐ Logistics and Supply Chain Management
☐ Procurement Management ☐ Operations Management
6. Please indicate your position in the firm ☐ Supply Chain Manager ☐ Operations Manager.
7. Number of years the firm has been in operation:
☐ Less than 2 year ☐ 2-5 years ☐ 6-10 years
☐ 11-15 years ☐ 16-20 years ☐ 21 years & above
8. Number of employees in the firm:
☐ Less than 6 employees ☐ 6-9 employees ☐ 10-29 employees
☐ 30-50 employees ☐ More than 50 employees
9. Type of ownership:
☐ Fully locally owned ☐ fully foreign owned ☐ jointly Ghanaian & foreign owned

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7, using the following scale:

66

| | | | | | | | | | |
|---------------------------------|--|--|--|--|--|--|--|--|--|
| | where bills of materials are 100% accurate. | | | | | | | | |
| JIT16 | Little or no expediting | | | | | | | | |
| JIT17 | The firm only replenished what is being needed by the customers | | | | | | | | |
| JIT18 | The firm only stores what is being required in the production | | | | | | | | |
| JIT19 | It uses it to reduce the stock and the carting cost associated in the firm | | | | | | | | |
| JIT20 | The firm uses just with a name of ensuring zero defect product | | | | | | | | |
| ABC Analysis Practices | | | | | | | | | |
| AP 21 | The firm uses ABC analysis as stock classification system to allocate time and finance in stock practices | | | | | | | | |
| AP 22 | The firm uses ABC analysis to assess the status of the items in the stocks. | | | | | | | | |
| AP 24 | The firm uses ABC analysis practices to determine the specific attestation required by each group of stocks. | | | | | | | | |
| AP 25 | The firm divides stocks in the warehouse into different classification of A,B and C | | | | | | | | |
| AP 26 | The firm is able to determine the most crucial items in the production of the organisation. | | | | | | | | |
| Fixed Order Quantity | | | | | | | | | |
| FOQ27 | The firm uses fixed order quantity to know the quantity to know the quantity of stock to order at any given time | | | | | | | | |
| FOQ28 | The firm uses fixed order quantity to help in determining the exact time the firm needs to make an order. | | | | | | | | |
| FOQ29 | There is high level of the customer service level due to the adoption of the practices | | | | | | | | |
| | | | | | | | | | |
| Vender Managed Inventory | | | | | | | | | |
| VMI31 | The firm purchase specific items from linked suppliers of the inventory of the organisation | | | | | | | | |
| VMI32 | There is a reduction of the damages due to the long term storage of inventory in the company | | | | | | | | |
| VMI33 | The firm saves time and cost due to the adoption of the practices in the organisation | | | | | | | | |

SECTION C: OPERATIONAL PERFORMANCE (Source: Fry et al., 2014)

Indicate the extent to which you agree or disagree with each statement by checking the appropriate number from 1 to 7 using the following scale:

| <i>1 = Strongly Disagree</i> | | <i>2 = Disagree</i> | | <i>3 = Somewhat Disagree</i> | | | | |
|---------------------------------|---|---------------------------|---|------------------------------|---|---|---|---|
| <i>4 = Indifferent/Not Sure</i> | | <i>5 = Somewhat Agree</i> | | <i>6 = Agree</i> | | | | |
| <i>7 = Strongly Agree</i> | | | | | | | | |
| Item | Statement | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| OP36 | Reduction in cost of operation | | | | | | | |
| OP37 | There is declined of overall administration and inventory cost. | | | | | | | |
| OP38 | There is increase operation efficiency | | | | | | | |
| OP39 | Timely response to customers | | | | | | | |

Thank you for co-operation in the survey.

