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**THE EFFECT OF LOGISTICS AND SUPPLY MANAGEMENT
PRACTICES ON ORGANIZATIONAL PERFORMANCE: THE CASE OF
ADDIS ABABA WATER AND SEWERAGE AUTHORITY**

**A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF
BUSINESS AND ECONOMICS SCHOOL OF GRADUATE STUDIES MBA
PROGRAM IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE AWARD OF MASTER OF BUSINESS ADMINISTRATION IN
MANAGEMENT:**

BY: DANIEL EDO

ADVISOR: DR.TSEGABRHAN MEKONEN

JUNE, 2021

ADDIS ABABA, ETHIOPIA

ADDIS ABABA UNIVERSITY
COLLGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF MANAGEMENT

BY: DANIEL EDO GUTA

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(MBA)**

ADVISOR: TSEGABRHAN MEKONEN (PHD)

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JUNE, 2021
ADDIS ABABA, ETHIOPIA

DECLARATION

This article is the outcome of my individual study on the topic "The effect of logistics and supply management practices on organizational performance the case of Addis Ababa water and sewerage authority," which I, Daniel Edo Guta, proclaim for partial fulfillment of the prerequisites for a Masters of Business Administration degree at Addis Ababa University's College of Business and Economics . To no other university has this work been submitted. All citations are correctly credited as well.

Daniel Edo Guta

Date: _____

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF MANAGEMENT

MBA PROGRAM

CERTIFICATE

This is to confirm that Daniel Edo Guta completed his research on the topic **The Effect of Logistics and Supply Management Practices on Organizational Performance: A Case Study Addis Ababa Water and sewerage Authority**. The thesis is unique and appropriate for submission to Addis Ababa University for the Master of Business Administration (MBA) degree.

Approved by Board Examination

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Chairperson, Department of Graduate Committee	Date	Signature
_____	_____	_____
Advisor	Date	Signature
_____	_____	_____
Internal Examiner	Date	Signature
_____	_____	_____
External Examiner	Date	Signature

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ABSTRACT

The primary goal of the practice of logistics and supply management system is to yield the right product or service, in the right quantity, at the appropriate time and at minimum costs, to meet customer needs and organizational goals as effectively as possible. Logistics and Supply management system Practices are initiatives that have an impact across the entire supply chain. Despite the fact that this approach has a significant impact on merit in any business, it is influenced by contextual elements such as industry, firm size, and supply chain length. As a result, the primary objective of this study based on looking into the effect of logistics and supply management systems on AAWSA's organizational performance. The study used a quantitative approach, and the framework's claimed links were tested using descriptive and explanatory research methods so as to meet the objectives of this research. The primary data was collected from 344 employees of the head office and eight branches of AAWSA As a measurement instrument, a Likert scale type questionnaire was used. Employee perceptions of the factors were then assessed using descriptive statistics, correlational analysis, and multiple regression analysis. According to the research, logistics and supply management is occasionally used in AAWSA. The study found that logistics and supply management practices had a moderate impact on AAWSA's organizational performance. The analysis also revealed that there was a strong link between AAWSA's logistics and supply management techniques and its overall success. According to the study Information flow management, transportation management, customer service management, and order processing management techniques all have predictive power on AAWSA's organizational performance. AAWSA also faced moderate logistical management issues, according to the research. The report suggested that the logistics and supply management practices as well as the top management keen support and sustainable supervision to strengthen sufficient logistics and supply management capacity for AAWSA to build up its commitment to satisfy the needs and expectations of the customers.

Key Words: *Logistics and Supply management system; SCM Practice; Organizational performance; AAWSA*

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ABERVATION AND ACRONYMS

AAWSA -	Addis Ababa water and sewerage authority
COTH -	Coordination theory
CSCMP-	Council of supply chain management professionals
RBV -	Resource based view
SCM -	Supply chain management
SYTH -	System theory
SPSS -	Statistical package for social science
USA -	united States of America
TOC -	Theory of constraint
FDRE -	Federal democratic republic of Ethiopia
CR -	Customer relation ship
IS -	Information sharing
3PLS -	Third party logistics

CHAPTER ONE

1.1. Introduction

This chapter covers the background and organization of the study, as well as problem statement, questions for research, the study objectives of the study, significance of the study, scope of the study, delimitation of the study and Organization of the study.

1.2. Background of the study and organization

Firms must find processes and management methods that allow the creation of a more productive organization with better results in the current context of fierce market competition and an increasingly competitive and globalized economy. Many studies have been conducted on this model, with the aim of determining the various effects and the value of each for a company's competitive performance (Kasarda, 2000).

Logistics is essential for integrating an organization's internal operations with supply chain processes in order to improve customer loyalty. All logistics and supply management practices that can affect organizational performance have been leveraged, with order processing management, inventory management, shipping management, handling management, and packing, and capacity network design are all things that need to be considered to have a major impact on customer satisfaction (Douglas, 2015). Logistics plays a critical role in assisting businesses in achieving more efficient management processes. In business practices, an inadequate logistics system combined with poor internal management will make it difficult for a firm to respond to customer demands at the lowest possible cost in the shortest possible time frame, including a quality standard that fails to match customer expectations, putting the company at a competitive disadvantage over its rivals. (Nyaberi & Mwangangi, 2014). The ability to efficiently, inexpensively, and effectively convey goods (logistics) is viewed as critical to commercial success as well as a country's stability and capacity to compete in the globalized economy. (Debela, 2013).

According to the Council of Supply Chain Management Professionals (CSCMP, 2016), supply chain administration comprises the planning and management of supply chains operations related to procurement and acquisition, transfer, and logistics management. Collaboration and

cooperation with channel partners is also needed, such as suppliers, intermediaries, and service providers who are not affiliated with the company. Supply chain management, in essence, integrates supply and demand management within and between enterprises. SCM is a collection of methods and practices for combining producers, manufacturers, distributors, and consumers in a coherent and high-performing business model to improve long-term efficiency of individual companies and the whole supply chain (Chopra & Meindl, 2007). An effective SCM implementation would strengthen the relationship between upstream suppliers and downstream customers, resulting in higher customer satisfaction and firm efficiency. SCMP has been established as a main factor of the business success in previous study (Tan, Wisner & Leong, 2005). In order to ensure timely and on-time deliveries from manufacturing units to consumers, effective SCM aims to reduce inventory, lead times, and related costs. Supply chain management's main objective is to produce the right products, in the right quantities, at the right time, and for the least amount of money possible in order to meet market and internal targets as efficiently as possible.

Logistics and SCM practices are a series of activities carried out to promote successful and productive supply chain management. Just a few examples include partnerships with manufacturers, physical product distribution, meeting consumer needs, and knowledge sharing through the supply chain. Customer needs estimation, dependable and efficient execution, supply chain integration and communication, information and vision sharing the use of ICT is only one of the main logistics and SCM practices that have an effect on performance and informal approaches, as well as the use of specialists for particular jobs in the supply chain. All of these activities have an effect on logistics and supply chain management.(Srivastava, 2006 p.1). Despite the importance there is little empirical research on how practitioners define and incorporate supply chain management practices in to overall corporate strategy. Little is known about the specific practices or concerns of successful supply chain management implementations and its effect (Tan, 2002). The research in the area of SCM has not been able to offer much by way of guidance to help the practice of SCM. This has been due to a lack of conceptual clarity and a theoretical context in SCM science (Li, Rao, Ragu-Nathan & Ragu, 2005). By implementing cost-cutting practices in industries like manufacturing, the advancement of logistics and supply chain management, as well as how it can assist businesses in rising productivity and providing value to consumers, has gained a lot of attention (Ellram, La Londe,

& Weber, 1999). As a result, this paper examines the effect of logistics and supply management practices, as well as how they can be used to gain a competitive advantage in the future in service sectors, especially public providers. In order to provide the empirical evidence for the research gap identified regarding logistics and supply chain practice and its effect on organizational performance of AAWSA the researcher have reviewed different empirical evidences. It is vital to emphasis on maximizing performance through addressing issues that affect performance so as to ultimately ensure the authority's sustainable overall growth and capability. It is therefore; with this intension that the study examines the effect of logistics and supply management practices on the performance of the authority under study, AAWSA. Thus, having recognized the effects, it can control or minimize its alertly increasing attrition rate and increase its efficiency. Moreover, different researchers studied the effect of logistics management in different sectors. However, there is no prior similar research conducted on AAWSA in Addis Ababa context. Hence, this research has a great significance for service giving sectors in general and for monopolistic firm and service giving like AAWSA in particular.

1.3. Statement of the problem

An autonomous public authority is created under FDRE Proclamation No. 219/1981, which provides for the creation of a water supply and sewerage authority. The Authority is in charge of providing water and sewerage services in Ethiopia.

The Authority is in charge of waterworks construction and maintenance, as well as controlling water and sewerage services provided by others. In order to enhance water and sewerage service organization, it also introduces and imposes water tariffs, other charges, and recommendations to the National Water Resources Commission.

The Federal Environmental Protection Authority also deals with the problem of liquid waste in order to allow sustainable use of the country's natural resource. Ethiopia's government demonstrated its political commitment to improving the country's water supply and sanitation coverage by providing an enabling environment and introducing a water resource policy in 1999, a water resource strategy in 2001, a water sector development program in 2002, a water supply and sanitation master plan in 2003 and a Universal Access program (UAP) in 2005.

The government target aims to increase access to improved water supply to 84 percent and access to improved sanitation to 80 percent by 2010. Furthermore, by the end of 2012, the UAP expects to have achieved 100 percent sanitation and 98 percent drinking water availability in rural areas. In urban areas, coverage is projected to rise from 80% water supply and 51% sanitation coverage to 100% by the end of the targeted year for both water supply and sanitation (Teshome, 2008). Regardless of these efforts, the liquid waste management service and water supply in capital Addis Ababa is insignificant when it is compared to the demands of the public in Addis Ababa. A simple observation of sewage overflowing from every corner of household toilets, pit latrines, septic tanks into highways, public places and residential areas as well as the day today challenge or hustle of the dwellers to strive for clean water can verify the problem areas in the city (Addis Ababa).

The AAWSA is in charge of water supply and sewerage, as well as septic tank emptying. It has a very larger share (as public provider) rendering services of clean water and to collect, transport and dispose sewages that are produced by the city's residents, households, and institutions. The authority face challenges in providing liquid waste removal services, particularly, sewage removal service by trucks; and in accessibility of the provision of clean water through inadequate construction of new line for each house hold. Apart from these recent events in the slum areas of Addis Ababa have shown that the problem of clean water supply and liquid waste management has become a monster. A visit to these areas of Addis Ababa today reveals the extent of chaos due to shortage and simultaneous and long lasting disconnection of clean water supply and Problems with waste management.

These problems are created in the city as a result of insufficient households, commercial and industrial liquid waste collection, transportation and disposal systems and inefficient construction of clean water lines. Therefore, in addition to the financial capability, according to the claims by customers, employees and even administrators the magnitude of liquid waste collection, transport and disposal services and accessibility of clean water to the city's residents depends primarily on logistics and supply management in efficiencies which have a direct effect on service delivery and customer satisfaction even though not based on research findings .In light of these factors, the authority has its own context. A few studies have been done so far to see service deliveries of (AAWSA). One of the few studies on the problem conducted by the

World Bank (2008) is mainly focused on customers' access to information and transparency of the organization in delivering the services.

As to the key informant of the authority, AAWSA has worked a lot in improving its operational performance but it doesn't reach as per the required level to meet the customers' needs and demands. It is required to improve the planning, distribution, supplier and customer relationship approaches of the authority and it is also required to reduce the waste in the inventory by optimizing the procedures in the supply chain. Despite the fact that the supply chain is well-represented in the organizational strategy of AAWSA, its predicting factor for operational performance is not known and defined. It is not possible to identify the improvement areas on the authority's practices of supply chain management and its relationship to the operational performance.

The 2019 annual report of the authority supply chain division also shows that there is planning gap across the internal divisions of the company which leads to the ineffective and inefficient utilization of resources and also leads the company to be unable to satisfy the requirements and demands of its customers due to its inefficient operational performance. AAWSA has identified supply chain inefficiencies, such as inventory management efficiency, waste on authority operations and assets, inefficient supplier relationships, and an issue with business integration. This causes a difficulty for the operational performer, which has an impact on the organization's efficiency and operations.

1.4. Questions for research

The research **questions** that are framed to address the problem statement are:-

1. What is the current state of logistics and supply management practices in AAWSA?
2. What is the relationship between logistics and supply management practices and organizational performance of AAWSA?
3. What is the effect of AAWSA'S logistics and supply management practices on its performance?

1.5. Objective of the Study

1.5.1. General objectives

The primary objective of this research is to look into the effect of logistics and supply management practices on the organizational performance of Addis Ababa water and sewerage authority.

1.5.2. Objectives that are Specific

This study's specific objectives are as follows:

- ❖ Collecting and analyzing relevant sources on the ongoing logistics and supply management practices of the authority in order to assess its current status.
- ❖ To investigate the relationship between AAWSA's logistics and supply management practices and its organizational performance.
- ❖ To investigate the effect of AAWSA's logistics and supply management practices on its organizational performance.

1.6. Significance of the study

This thesis provides information on practices of AAWSA's logistics and supply management. Regarding academic and scientific benefits, this thesis extends the implementation of logistics and supply chain management approach into the firm particularly public provider service field by defining the main elements that need to be considered in managing its supply chain, providing the unique characteristics of AAWSA, which make the supply chain management more multifaceted and exploring the supply chain management practices towards sustainable performance. Overall, this thesis would be a future reference for theoretical and empirical studies in AAWSA as well as service sectors. This thesis would help service sector managers by providing the practical guide line to help firms in managing their supply chain towards effective and efficient management performance as building a better understanding on service firms supply chain management, extending the sustainable thinking throughout the service lifecycle and developing a portfolio of supply chain practices towards better performance.

1.7. Scope of the study

The logistics and supply management framework encompasses a broad range of management activities; it is difficult and unmanageable to study the whole areas of it. The scope of the analysis is therefore restricted to particular contexts, i.e. on logistics and supply management practices and their effect on organizational performance of AAWSA. Business points of reference include strategic supplier alliances, customer relationships, information sharing levels, and internal lean processes also delimited to the subject scope supply chain practices. The research is limited to operational factors such as price/cost, efficiency, distribution reliability, and time to the public.

1.8. Limitation of the study

Some of the respondents in the respective firms refused to provide some information in the questionnaires they were distributed with. This was because of confidentiality information companies feared could be spread to third party hence The researcher did everything in his power to convince them to provide such information, including adding an introduction letter from Addis Ababa University to identify the researcher as their student or showing student identity card in case of self-administered distribution . In other cases, however, some employees had entirely ignored the questionnaire that had been sent to them, resulting in a smaller sample size. Some branch offices failed to submit their questionnaire on time which might reduce the sample size. The researcher mitigated the effect of constraints by constant reminding the selected Authority and its respective branch offices for feedback through phone calls and messages or e-mails.

1.9. Organization of the Study

The study was broken down into five parts, each with its own collection of references and appendices. The first chapter encompassed the introduction with background of the study, problem statement, and research questions for the research, the study's objective, significance, scope, and organization of the study. Chapter two dealt with a study of the literature. The third chapter of the study was methodology of the research. The fourth chapter focuses on research findings and results and chapter five concluded, summarized and discussed noticeable points with various recommendations. Cited reference showed a list of references used throughout the research work.

CHAPTER TWO

REVIEW OF LITRATURE

2.1. Introduction

The literature review section contained appropriate literature reviews on the effect of logistics and supply management practices on performance of AAWSA. This included a brief history and a brief description of the logistics and supply management practices and the provision of robust operations performance. The chapter continued to develop theoretical review, empirical review and conceptual framework, which were used in relation to each of the research variants. Eventually it drew a closer look at the available literature associated with the study and highlighted the research gaps and provided a research hypothesis.

2.2 Theoretical review

Theories are "theoretical tools for analyzing, clarifying, and anticipating a given subject matter that can be manifested through collection of statements or concepts intended to explain a set of facts or phenomena, particularly one that has been tested or is commonly accepted and can be used to predict natural events (Hawking, 1996). Formal theory is syntactic in nature, meaning that it can only be applied to any substance. (i.e. facts and relationships of the real historical world as it unfolds) when given a semantic portion (Zima, 2007) . This research is based on four assumptions about business performance given emphasis through Game Theory, Theory of constraint (TOC), Theory of Resources-Based View (RBV), and Firm Theory as were addressed as follows:-

2.2.1 Game theory

Game theory is a systematic decision-making study in which many players have to make decisions that theoretically impact other players' interests; it is an official dispute and collaboration study (Xu, Pan & Ballot, 2013). Theoretical principles of games apply if many agents' actions are interdependent (Dai & Chen, 2012). Individuals, organizations, businesses, or any combination of these can be agents. Game theory principles provide a language for the

formulation, analysis and interpretation of situations of vital importance (Chen, 2012). Game theory can be classified into two forms, non-cooperative and cooperative game theory.

The cooperative game principle can be used to situations where players would profit more from cooperating than if they acted alone (Xu, et al., 2013). Since the benefit sharing problem is extensively investigated in cooperative game theory, the researcher will build the hypothesis on transportation management and firm efficiency using cooperative-game-theoretic approaches.. Cooperation is becoming increasingly critical today in order to boost global logistics efficiency (Drechsel & Kimms, 2010). Horizontal cooperation has proven successful in lowering global costs and improving the service rate in logistics as a counterpart to conventional vertical cooperation, a modern model of cooperation (Drechsel & Kimms, 2010).

Horizontal logistics cooperation has been shown to reduce global costs and improve performance standards in game theory (Cruijssen, Cools, & Dullaert, 2007; Pan, Ballot, Fontane & Hakimi, 2012). Despite these benefits, however, horizontal collaboration in logistics is not substantially employed (Muir, 2010). The lack of an effective decision-making model for cooperation is the key barriers to the introduction of horizontal cooperation (Xu, et al., 2013). In this study cooperative-game-theoretic approach is utilized to aid decision-making in assessing transportation logistics efficiency and the impact it has on business performance.

The study of cooperative game theory looked at how players interact in cooperative situations with each other and offered several approaches to equal benefit distribution and stable alliance forming the model of collaboration (Dror, Hartman & Chang, 2012). This type of collaboration occurred amongst businesses that competed in the same market and demand. This type of collaboration took place between businesses that competed on the same level of the market and invited them to share private logistics resources and information (Drechsel & Kimms, 2010). The goal is to improve logistics quality by lowering logistical expenses and lowering the impact of transportation operations on the environment (Cruijssen, et al., 2007). The idea was primarily concerned with the cost of transportation. It has been demonstrated in the literature that horizontal logistics cooperation resulted in the most cost-effective transportation (Pan, Trentesaux, Ballot, & Huang, 2019). Given the size of Ethiopia's public provider service sectors, it's a big bet. Game theory ideas led this research's investigation on logistics and supply management practices as well as public provision AAWSA's performance.

2.2.2 Theory of Constraint

Goldratt's management philosophy was widely known as the theory of constraints (TOC) (Cyplik, Hada, & Domaski, 2009). It aimed at initiating and enforcing breakthrough the enhancement concentrating on a flaw that prohibited a system from attaining better results level. In essence, according to the TOC paradigm, every company should have at least one limit (Simatupang, Wright, & Sridharan, 2004). Partnering corporations shared promises and incentives with their upstream and downstream partners in order to gain a competitive advantage, according to Simatupang et al (2004). Benefit and output can be increased in the (SC) as a mixing of supply and demand when all supply chain (SC) partners are integrated and operated as a homogenous entity (Dos Santos, Marins, Alves, & Moellmann, 2010). Flores and Primo (2008) stated that, as the market's demand grew, the logistic process got increasingly sophisticated, with significantly higher demands, especially when it comes to gaining a competitive advantage (Santos, et al., 2010) .

At that time, the competition is between SCs, rather than between firms. (Santos, et al., 2010). As a result, the SCM's primary goal is to achieve a gain solution that is optimal for partners. Only with the help of logistics management could this be accomplished (Simatupang, et al., 2004). The scenario arose as a result of many logistics issues that Successful logistics management had to handle these issues. Long lead times, a large number of unfulfilled orders and/or extra efforts (overtimes), high levels of excess inventories, and/or high levels of excess inventory are some of the challenges. Unnecessary inventories, a scarcity of relevant inventories, incorrect material orders, a large number of emergency orders and expedition levels, and a high degree of devolution Inventory shortages, erroneous supply instructions, a wide the amount of emergency orders and expedition levels, as well as a high degree of devolution, a lack of essential customer participation, frequent revisions, and/or a lack of control over priority orders, all indicate, among other things, resource schedule conflicts. (Santos and colleagues, 2010). It is assumed that the device's owner determined its purpose.

The basic purpose of most businesses is to create money in the future and then retire (Simatupang, et al., 2004). Other stakeholders may have imposed conditions that had to be met in order for the system to continue to work. As a result, the TOC pushed managers to identify

what was preventing them from achieving their objectives, as well as how to overcome these obstacles (Cyplik, et al., 2009).

The key problem noted is that logistics activities do not achieve better results related to profitability and productivity, despite the noticeable worldwide increase in logistics performance, since most of the time they were just thinking about their own local limits (problems), when they should have been thinking about the bigger picture considered all logistics-related capacity constraints in its entirety (Santos, et al., 2010). In fact, developing an efficient logistics management system necessitates the design and analysis of the logistics system as a whole (Santos, et al., 2010). In this study, the theory of Constraints (TOC) will be applied to aid AAWSA in inventory management, transportation management, and order processing. The TOC technique assesses logistics from a holistic standpoint, which means it is detailed in detail.) . Logistics performance is relied on the efforts of these fundamental aspects (transportation, inventory, order processing, and information flow) as a cluster of intertwined elements Every system had to contain at least one constraint, which explains why if there were no constraints, the system's performance would have been limitless (Santos, et al., 2010).

The TOC strategy, according to Cyplik et al. (2009), might be used to direct a single organization to focus on leveraging resources in SCM depending on different logistics costs. TOC thinking process is used to identify issues in the management of apparel logistics, indicating the necessity for executives from multiple businesses to interact in order to increase the total profit of the firm. (Cyplik et al., 2009; Simatuang et al., 2004). To protect real sales from demand and supply unpredictability, a mathematical model was presented to determine the time buffer at various participating position members of devised performance indicators in order to keep participants' trust (Goldratt et al,2000). To measure the impact of transportation management, inventory management, and order processing on public provider performance, a mathematical model was presented to determine the time buffer at various participating position members to protect real sales from demand and supply fluctuation of (AAWSA) ,Therefore TOC is used in this regard.

2.2.3 Resource Based View

The resource-based perspective aimed to explain the origins of a company's long-term competitive advantage from the inside out (Kraaijenbrink, , Spender, & Groen, 2010) .The company's Resource Based View (RBV) postulated that the company's internal resources are identified sources of competitive advantage (Tukamuhabwa, Eyaa, and Derek ,2011). These resources are valuable, unique, and difficult to replace. Resources deemed valuable are those that can be used to further a cause the conception or execution of performance-enhancing techniques, business opportunities, or threat mitigation (Barney & Clark, 2007).

The two assumptions for the theory of RBV are that resources and capabilities are distributed heterogeneously among companies; and are imperfectly mobile, rendering the differences between companies stable over time (Kari., & Wong, 2011). Each business is different (heterogeneous) from other companies when it comes to a company's resources and competencies that it has or has access to. These variations set one firm apart from another, and a firm's success is based on its idiosyncratic (firm-specific) resources (Karia, & Wong, 2011). As a result, the individual resources, competencies, and abilities of the organization are collection of the business's resources or the nature of RBV (Karia, & Wong, 2011).

In the logistics industry, for example, a resource is defined as a basic element or a pre-requisite for the development and operation of logistics; and it is required for the development and operation of logistics and capabilities of an organization (Aldin, 2004). In contrast to industrial organizational economics, which concentrated on the external opportunities and challenges of companies, the resource-based view of companies primarily emphasized their internal strengths and weaknesses. Since it might be easier to manage a company's own resources and capabilities when the external climate is unpredictable (Shang & Marlow, 2005).

The resource-centered perspective argues that an organization has been a collection of physical and immaterial assets (Kraaijenbrink, et al., 2010). This selection is unique to each company, allowing companies in the same industry to be distinguished (heterogeneous), i.e. No two businesses have ever had the same experiences, acquired the same assets or abilities, or developed the same company culture (Barney and Clark, 2007). The ultimate determinant of strategic decisions is this distinct allocation of resources between firms (Shang & Marlow, 2005). RBV was utilized by emphasizing the importance of a company's logistics management. For entrepreneurs, logistics versatility and dependability are considered as a source of

competitive advantage (Ganotakis and Love 2010). Businesses, according to (Ganorakis and Love 2010) Owing business-specific assets allowed a company to gain a competitive advantage. they also noticed that the competitive advantage of a company is derived from the ability of the company to assemble and leverage a suitable combination of resources (Ganotakis & Love 2010). According to (Wong and Karia 2010) In their study, RBV concentrated on identifying the company's hard-to-copy characteristics as sources of market returns and strategies for improving performance and gaining a competitive edge.

The RBV is used in strategic literature for evaluating market results.

The RBV has lately been used in logistics management studies to investigate the impact of logistics resources and competencies on logistics performance (Lai,etal., 2008; Yang,et al., 2009). RBV is a good theory for study in the supply chain and logistics management. This study will try to find the theory of RBV to analyze the effect of information flow on the competitive advantage of 3PL providers (Lai et al., 2008), Others looked into the impact of logistical capabilities on firm performance (Yang et al., 2009). As a result, the RBV provided a theoretical foundation for this investigation and relation between logistical resources and capabilities and logistics information systems in order to reach firm outcomes.

2.2.4 Firm Theory

The company's theories were initially designed to identify why businesses existed, therefore the company's earlier theories were rooted in deductive economics and had their base cost theory of transactions (Mentzer, Min, & Bobbitt, 2004). The implementation of the idea of transaction costs, according to (Mentzer, et al 2004), is a factor in deciding whether or not a business or industry contracts existed for production coordination. The life of the business is dependent on disparities between the transaction costs of market contracts and those of the company (Mentzer, et al., 2004). If business contracts have low transaction costs, this means that both intra- and inter-company production variables, as well as logistics, have low transaction costs.. Such a business situation may have been influenced when properly businesses tackle it (Fugate, et al., 2010). The sort of organization that formed, according to the transaction cost system, was the one that performed transactions most effectively and lowered production costs the most (Mentzer, et al., 2004). Costs of transactions are related to trade, while production costs are related to the coordination of different in-house production activities (Mentzer, et al., 2004).

Fugate, et al., (2010) describes a case in which both transaction and production costs are minimized.

Three aspects of transactions, asset specificity, uncertainty, and the quantity of input sources, were found by (Mentzer, et al 2004) as determinant when firms or markets prevailed. When the assets aren't specific to a single transaction, market contracting is more successful. Similarly, business contracts dominated businesses when small numbers of sources and incomplete knowledge are not important. (Mentzer, et al., 2004). discovered that the more particular the asset, the greater the ambiguity (imperfect knowledge) and the potential of a few source of input, the greater the rationale for companies to disorganize.

Uncertainty in logistics and, more importantly, in production is caused by supply uncertainty, uncertainty in demand, uncertainty in new product growth and uncertainty in technology (Das & Teng, 2000) . As businesses practiced logistics productivity, efficiency and versatility in their transactions and activities, their targets are accomplished at a lower cost. The company's priorities influence the company's operations and guide the actions of the company's management and other interested parties External elements such as competitors, stockholders, suppliers, customers, and industry structure can all influence the firm's goals. As these groups placed different demands on the organization, defining the firm's aims grew more difficult. Understanding how the organization's priorities and resources influenced various functional business sectors, including logistics, advances research on the company's actions through the company's theories. The investigator also can better understand the strategic position of logistics based on observations from the company's theories (Das &Teng, 2000). The investigation was able to get off to a solid start thanks to firm theory explaining why businesses perform such tasks (Fugate, et al., 2010).

2.2.5. Logistics and supply management

Logistics is a planning framework and attitude that aims to develop a single plan for the flow of goods and information within a company. This paradigm is built on in supply chain management. by attempting to interconnect and coordinate the processes of various pipeline organizations. i.e. suppliers and customers and the organization itself (Christopher, 2016). The goal of logistics management is to ensure industrial production and trade in the necessary materials or final

products with inventory optimization while reducing logistics costs and increasing the level of logistics service. In a word, SCM makes it possible to achieve these goals. Supply chain management is a field of managerial research that, because of its "youth" and global character, has the potential to bridge the gap between theory and practice in managing complex systems of relationships between suppliers and customers (Mukhamedjanova, 2019) . Four basic points of view dominate modern literature on the link between logistics and supply chain management (Mangan J., 2016) :

- logistics as part of supply chain management
- supply chain management as part of logistics
- supply chain management instead of logistics
- Logistics and supply chain management as two independent disciplines with some intersection points.

Logistics management is the part of supply chain management that plans, implements, and manages the reliable, efficient forward and reverses movement and storage of products, services, and related information between the point of origin and the point of consumption to meet customer needs, according to the Council of Supply Chain Management Professionalism (CSCMP, 2010). The purpose of logistics management is to provide the final consumer with the proper product of the right product at the right time, in the right location, and at the right price. (Ristovska, 2017).

CONCEPT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

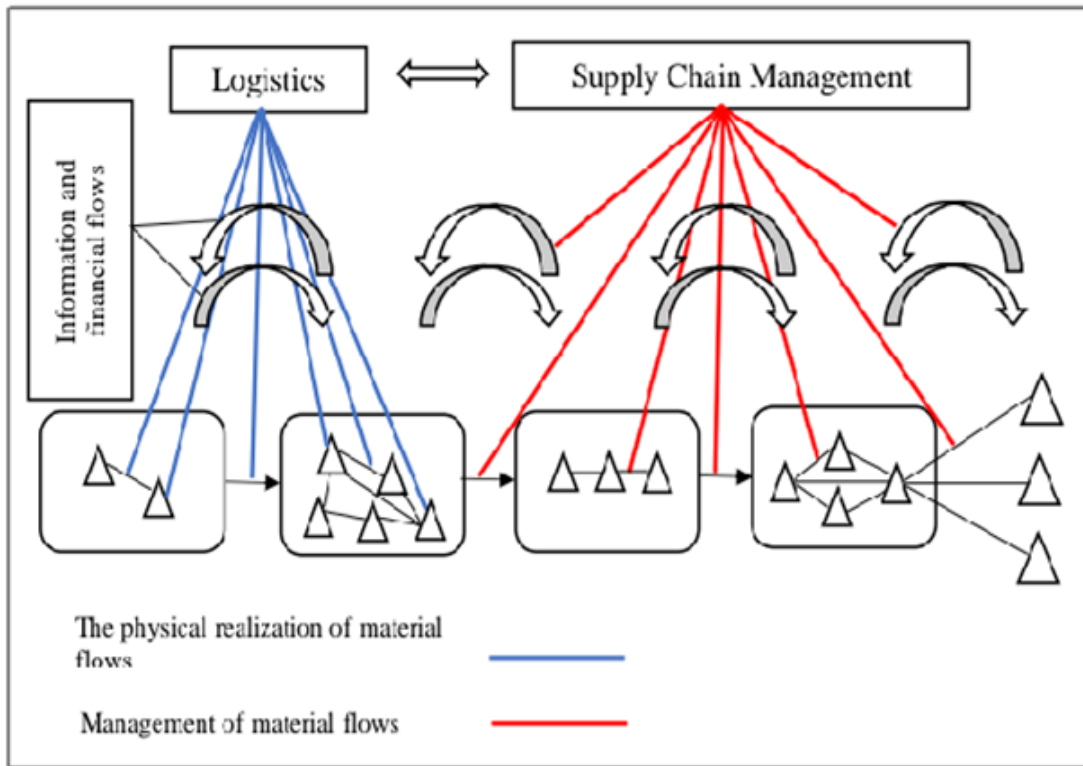


Figure 1: Logistics and Supply Chain Management (Ivanov, 2009)

Logistics deals with the elements represented by (triangles) and SCM deals with the relations between these elements. In this situation, relations refer to management (informational, financial) relationships rather than Transportation management, including inbound and outgoing transportation, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand forecasting, and third-party logistics provider administration are all common logistics management operations. Sourcing and procurement, production planning and scheduling, packing and assembly, and customer support are all part of the logistics profession.

It is involved in strategic, operational, and tactical planning and execution at all levels. Logistical management is a function that coordinates and optimizes all logistics activities, as well as integrating logistics with other business processes departments such as marketing, sales, production, finance, and information technology (CSCMP, 2010). The administration of the movement or flow of products and services is known as supply chain management., as well as

storage, shelf life, and analysis of products procured and goods sold logistics, etc. Supply chain management aids in the planning and execution of various supply chain operations of a particular organization in order to build up the organization's net value, establishing the current market trend relating to the demand and supply of any goods or services, and synchronizing the same in order to measure the organization's performance (Harjeet et al ,2016) . According to (2009), logistics approves the implementation of the "7Rs" on local parts of the value chain (the right product, in the right quantity, with the right quality, at the right time, in the right place, in the right package, at the right cost), while supply chain management balances supplies across the value chain to fully meet customer needs.

2.3 Important logistics and supply chain practices

Some related logistics and supply management functions can be defined in relation to the activities and management of logistics and supply in an organization and its provision (Marchesini & Alcântara, 2016). A company, depending on the products and services it provides. may consider some, or all, of the resources of its business, or in the form of a less strategic position. Yet all of these activities are important to most of the service delivery and the service sector, the focus of this focus, is not without. However, with regard to their suitability in terms of the effect of logistics and supply management on organizational performance, only the following functions received some attention in this regard: -

2.3.1. Transport Management

Transport management is the planning, control and decision-making process in the field of logistics that has moved the area and set the stage for innovation (Bowersox, Closs, & Cooper, 2010). Transportation has historically defined practical considerations because of its ultimate importance and tangible expense, and almost all companies, large and small, have transportation managers (Bowersox, et al., 2010). Among the components of business logistics systems, transportation is the most significant economic operation. It establishes a physical link by transporting and storing production inputs, as well as an outbound logistical link by transporting and storing finished goods to customers (Sabry, 2015). Transportation employs one-third to two-thirds of that revenue on operating costs and therefore transportation management prioritized the implementation of a highly operational plan (Bowersox, et al., 2010).

Shipping is important in all transaction production, from production to delivery to final buyers and returns. Only good management and only harmonization between each item can bring the benefits of material management. Good management of transportation in goods operations can bring efficiency, cost-effective operations, and quality indoor service to firms (Bowersox, et al., 2010), speed, and consistency (Bowersox, et al., 2010). Transportation costs are the cost of cargo between two parts of the world and the costs associated with the storage of goods along the way. Logistical systems rented transportation that cost the entire system (Bowersox, et al., 2010). According to Bowersox, (2010) the speed of movement was the time required to complete the apparent movement. Speed and travel costs were linked in two ways. Firstly, transport firms have the ability to deliver fast delivery that is often charged with high prices for their services and service costs. Second, initially the transportation service was a reduction in the time when inventory was on the way and prices were much higher (Bowersox, et al., 2010). Therefore, a critical factor in choosing the right way to travel to a company is to measure speed.

2.3.2. Warehousing and storage

The term "warehousing" refers to the operations that take place in a warehouse. Involving the organized and orderly handling of products on a wide scale and their distribution when needed, it's easy to find. To put it another way, warehousing is the method of storing or preserving large quantities of goods from the time they are bought or produced before they are used or sold. logistics is crucial part of modern supply chain being very important element in playing a critical role in the success or failure of business today. Frazelle, 2002a; Frazelle, 2002b; Frazelle, 2002c; (From the Haung Min report of 2010).

The warehouse is an integral part of a company's warehouse system that stores products (supplies, parts, purchases and completed goods) and between source points and usage points. Storage can be provided by warehouses or distribution centers (Bank ,&Murphy 2013). An important decision for many firms is how to find warehouses. Cost considerations are common in decision-making models.. Resources such as skilled workers are also emphasized in some models. Another common feature is the so-called availability, i.e. infrastructure and access routes (Melachrinoudis, et al, 2000). (Alberto 2000) also highlights attention related to time and reliability. This includes proximity to production facilities for customers and suppliers.

2.3.3. Inventory management

According to Stevenson, an inventory is a warehouse or store of products (2009). It was also used to store everything needed to conduct business (Mangarulkar et al., 2012). In any case, any business that sold goods was likely to have both the raw materials and finished goods on hand (Laird, 2012). The company's inventory consisted of these components and finished goods. Inventories, according to Stevenson (2009), Because they are "necessary for operations and contribute to consumer happiness," they are "a key aspect of business." Stocks, according to Mangarulkar et al, (2012). In order to maximize income, it must be effectively regulated. Many small firms cannot afford the losses caused by poor inventory management causes. Clearly, inventory control is critical to a company's performance in logistics (Laird, 2012). Logistical techniques are organized to meet customer service goals while spending the least amount of money on inventory. Bowersox et al (2010). They went on to say that inventory targets that endorse core customer goals were the secret to efficient logistical segmentation and achieving optimal inventory turn. Five aspects contributed to a successful inventory management strategy, which are: principal consumer segmentation, product profitability, transportation integration, time-based efficiency, and modest performance (Bowersox, et al., 2010).

The degree to which a company was committed to delivering goods quickly in order for it was a crucial competitive component was to meet a customer's inventory need (Bowersox, et al., 2010). Customers would not have needed to keep huge inventories if goods and materials were shipped quickly. Similarly, if retail stores could have been replenished more quickly, less safety stock would have been required and fewer out-of-stocks would have occurred. Receiving precise and timely inventory replenishment was an alternative to holding safety stock. Although time-based systems minimize consumer inventory to a bare minimum, the cost savings must be offset by Bowersox et al. (2010) identified various supply chain costs incurred as a result of the time-sensitive logistical process.

Finally, without competition, inventory systems could not be developed when a company could guarantee and offer fast and reliable delivery, it was usually more attractive to do business with rivals. To obtain a competitive advantage, Even if this commitment raised total cost, it was critical to locate inventory in a certain warehouse (Bowersox, et al., 2010). To acquire a

competitive advantage over a competitor or to eliminate a competitor ,selective inventory deployment policies are needed.

2.3.4. Order processing

Order processing refers to the set of activities involved in meeting a customer's purchase order for goods or services that acts as the foundation for a logistics system's information flow. It had three main functions: it created a flow of information that before, accompanied, and followed the product. (Christopher, 2010) .

Order processing includes systems used by an organization to take orders from customers; check the position of the order and communicate with customers regarding orders; and filling out the order and making it accessible to customers. Part of the order processing process is therefore to look at the status of the establishment, customer credit, invoicing, and available accounts. Order processing is often a key component of automation, with an order cycle providing a key customer and organizational connection. It can have a significant impact on customer awareness of services, and as a result, customer satisfaction. (Croxtan, Garcia-Dastugue ,Lambert, & Rogers 2001) . As a result, organizations are increasingly using advanced processing methods to speed up order and improve accuracy and efficiency.

2.3.5 Information flow Management

In today's uncertain environment, practical and appropriate responses to ever-changing ideas and customer preferences have been instrumental in making a profitable business (Lindgreen, Hingley, Han, Trienekens & Omta, 2009). Current data is approaching in terms of achieving results. According to (Lee, Whang, and Lee, 2000), Information flow is known as the flow of information between different data (departments) in a company in a variety of ways with flexible content. In the past, information flow within the asset was still strong because it gave the chains of real-time response and precision (Sahay, & Ranjan,2008) Firms at the time, however, saw the flow of information as legitimate, because it did not guarantee the flow of practical and reliable resources without it (Jonsson, & Mattsson 2013) The following :(Zhang , Zhang, Wang, Sun Yang 2015) agreed that the flow of precise and real-time logistics information proved to be very significant in the flow of things. This explosion of information had allowed the supply of goods

to be a clever weapon in the company's arsenal of value-added financing in the last line (Closs, Swink & Nair 2005).

The success of the logistics output hinged on the dissemination of information. The flow of information has become a key indicator of interaction within the realms of logistical management and decisive action. Information about transfers is shared, as is information on the collection's level and locations, sales data and information on expectations; For all businesses, details regarding order highs, production schedules, and service delivery capability, They've become crucial, as well as stringent operating procedures. The flow of accurate information has become extremely critical to system performance and functionality: Customers should be aware of order status, product availability, delivery system, inventory tracking, and invoices as essential components of complete customer service. In an effort to reduce the cost of procurement, management recognizes that information can be used to reduce the needs and requirements of employees; Information transfer has increased flexibility in terms of how, when and where resources can be used to capitalize on strategies; The development of The internet transformed the interaction between buyers and sellers by allowing knowledge to be shared and skills to be exchanged (Somuyiwa & Adewoye, 2010). This flow, on the other hand, can only work when firms are amazed at the use of information technology.

Information technology enables the detection of hidden data in a collaborative system and the monitoring of product improvement, as information goes through all supply chain activities (Simatupang & Sridharan, 2005). It has, according to (Porter and Millar 1985), become widely known that firms can gain competitive advantage by reducing costs or by differentiating through proper use of IT. Order placement programs, order processing, electronic data processing (EDI), vehicle planning and planning, and asset returns were examples of early claims (Lippert and Forman, 2006). To guarantee that managers have timely information to deal with, an advanced information system was required the growing changes in product planning and design to meet customer needs and to manage these responsibilities effectively (Stevenson & Spring, 2007). The flow of information between the repair works was done, aligned various operating technologies are used to keep things running smoothly. To attain a better level of information visibility and distribution, the key was to gather usable information from diverse sources within the firm and receive it for regular usage and distribution within the firm's internal and external

assets.. In order to provide managers with thorough knowledge, the flow of information in the company is critical to good logistics management, and it should be as frictionless and quick as feasible. Nowa kowska and Grunt (2007). Computers, the internet, and information communication systems are all examples of information communication systems are used in almost every aspect of logistics, including shipping, warehousing, order processing, materials management, and procurement are just a few of the services available. It can assist businesses in gaining competitive advantages by providing superior services to customers. (Adebambo and Toyin, 2011).

2.3.6. Customer Service Delivery Levels

The analysis of customer service needs is the starting point for developing a marketing logistics system. Some businesses say that their logistics goal is to provide the best possible customer support at the lowest possible cost. Unfortunately, no logistics system can provide excellent customer support while still lowering delivery costs. Quick provision, huge inventories, diverse collections, generous return policies, and a variety of other services all contribute to distribution costs. Minimum distribution prices, on the other hand, mean slower delivery, smaller inventories, and larger shipping lots, both of these imply lower overall level of customer service.

The marketing logistics system's aim should be to provide targeted customer support at the lowest possible cost (Kotler et al., 2005). Stock availability, The time it takes to get the product, the condition it's in when it's dispatched, and in logistics, order consistency is an indicator of customer service. (Reddy and Jayam ,2016) Selling a product is usually easier than physically delivering it to buyers in today's global economy. Companies must figure out the best way to store, treat, and move their goods and services so that they are available to customers in the appropriate quantities, at the right time, and in the right place. Physical delivery and logistics quality may have a significant effect on customer satisfaction and company costs. A poor distribution system can destroy an otherwise good marketing effort (Kotler et al., 2005).

Customer service, according to Christopher (2011), can be described as the constant providing of time and place utility. To put it another way, goods Customer service, according to Christopher (2011), can be described as the constant providing of time and place utility. Appropriate time and place. Customer care encompasses a wide range of aspects, from on-time delivery to post-sale

support Customer service can boost "value-in-use," which means that the commodity becomes more desirable in the customer's view as a result of the service's added value. Companies that put a heavy focus on logistics management have traditionally been known for service quality and hence have been able to gain a competitive advantage over their rivals. 2011, (Christopher).

The delivery and logistics processes are inextricably connected to customer service. There are several factors that may be important to customer service within this framework. These include everything from ordering convenience. From stock availability to delivery dependability, we've got you covered. There is a need to strike a balance between the quality of service given and the expense of providing that service (Rushton, 2010). The main goal of logistics is to satisfy consumer requirements in a cost-effective manner. Basic customer service programs typically focus on the operational aspects of logistics and ensuring that the organization is capable of performing the following seven rights to its customers:- the correct quantity of the correct product in the correct condition at the correct price with the correct characteristics at the correct time and location (Bowersox et al., 2002).

2.4. Logistic Performance

The value of performance assessment was first highlighted at the logistics level in (Bowersox and Closs's 1996) work, which clarified that logistics performance evaluation, a method of measuring resource readiness, was first highlighted. It was clear that resources were needed, and its main focus was on evaluating logistics performance management. Following Logistics research has grown in importance in the field of management science study as a result of this essential step, yet there is little attention paid to it by researchers. Consensus on the methods and its legal consequences. As (Robb, Xie & Arthanari 2008) Mention, a trade agreement with physical management, information and financial management, is widely known as the main basis for doing business, but is particularly effective in analyzing performance, still in the field of expertise and academic studies, with the potential for significant work-related relationships. (Arora, & Sivakumar 2016) pointed out that the performance of asset planning activities could affect the performance of an organization.

In a study of company leaders on the influence of asset awareness on business outcomes, the authors discovered that a high number of executives believe asset performance has a negative impact on business outcomes. and improvement costs. As the materials continue to pay off in the

organization's operations, many studies have seen the effect of the company's asset management performance and overall performance. Other scholars, such as (Zhou and Benton 2007), investigated the relationship between asset management and performance, as well as service delivery performance and reliability, and came to the conclusion that practices have a major impact on knowledge sharing success.. (Green, Whitten, & Inman, 2008) concluded that successful operating systems have a positive impact on business efficiency, especially service delivery speed, sensitivity, and flexibility in delivery, and also contribute to market growth in many companies in the United States. Information and communication technologies, in particular, have improved sales and asset management, as well as organizational performance. (Chow, Heaver, & Henriksson, 1994), who focused on assessing the relationship between objectives, practices, skills and performance management in transaction compensation, determined that asset management practices, in turn, contribute to better relationships and quality and service efficiency, distribution and efficiency.

2.5. Organizational performance

The organizational structure demonstrates how the organization logically achieves its market-focused goals and its financial objectives. Short-term aims of supply chain management include increasing productivity and decreasing inventory and turnaround time, while long-term aims include increasing market share and profitability for all supply chain participants. Cigolini and colleagues (2004). Financial metrics have long been used to compare companies and assess their success over time (Tan KC, et al., 2002).

Procurement management, like any other organizational system, can eventually contribute to improved organizational efficiency. Many previous studies have assessed organizational efficiency using both financial and business standards, such as return on investment (ROI), market share, sales profit line, and growth. Sales growth, market share growth, and the overall competitive landscape are all factors to consider (Tan KC, et al. 2002).

2.5.1. Relationship between Logistics and Supply Chain Management practices and organizational Performance

The supply chain management setting, which is built into supply chain management practice, has a significant impact on a company's financial and marketing performance. (Croom etal, 2000).

The asset management framework is expected to boost the company's market share, return on investment, and overall competitive position. Advanced design and product connectivity with suppliers are associated with better performance plants. Customer relationship practices have also been shown to lead to significant improvements in organizational performance (Cigolini et al., 2004). The lowest total cost, best order satisfaction rate, and quickest cycle time are all linked to a high amount of information sharing. The lower effects of supply chain management practices are confirmed by real world examples. Recent research finds that organizations that are more effective in procurement management are 40% to 65% more profitable in their cash-to-cash cycle over regular entities and higher organizations carry an inventory of less than 50% to 85% than their competitors (Tan KC, et al., 2002). Based on the above it is assumed that: Companies with higher levels of supply chain management will have higher levels of corporate performance. Controlling revenues has an effect on not only the organization's efficiency, but also on how it uses its competitive advantage. They should boost the competition's competitiveness in terms of price/cost, efficiency, delivery reliability, marketing time, and innovation. For example, a strategic provider business can improve supplier performance; reduce marketing time, and increase customer openness and satisfaction (Power DJ et al., 2001).

The dissemination of Information enables firms to produce more reliable deliveries and adapt products to the market faster, resulting in better levels of product integration. Customer happiness and cooperation quality are fully dependent on information sharing and information quality. The deferral strategy not only promotes growth, sales volatility, but also balances global efficiency and customer responsiveness. Companies with high levels of procurement management practices will have higher levels of competitive profit. Effective logistics and supply management puts the appropriate product in the right place at the right time, which is why it has gotten a lot of attention from practitioners and the government over the last decade (Tilokavichai & Sophatsathit, 2011). Competitive profit can point to higher levels of economic performance, customer satisfaction and loyalty, and participatory performance.

The most reliable types of customers face small competition changes in their targeted categories thus increasing sales and production. A company that sells high-quality goods will charge higher prices, increasing its profit margin and return on investment. Short, marketable, and fast product lines would be the first to market, resulting in a higher market share and sales volume. As a

result of the positive relationship between competitive benefit and organizational efficiency, a higher level of competition and a higher level of organizational performance can be anticipated. .

2.6. Empirical Review

2.6.1. Empirical literature on logistics and supply management performance and organizational performance

The effect of logistics and supply management practices in the firms is supported by a number of studies conducted; however, research shows various effects on logistics and supply chain management as follows: (Fugate, Mentzer and Stank 2010) conducted research on logistics routine and its effect on strong operations in the USA in 150 companies. Research has shown that increased productivity, efficiency, and segregation have reduced costs, inventory, cash requirements and increased supply of goods, timely delivery, timely delivery and non-damaging, wholesale and retail finance sales, revitalizing firm and full factory operations. (Yeung, & Liu 2008), examined the impact of logistics skills on performance in manufacturing factories in China. The study is based on a study of 1000 manufacturing firms in the central regions of southern, southern and central China. By analyzing the testing and verification factors, a scale of the capabilities of the production asset is obtained. The results show that logistics expertise can be classified as three-dimensional: process, flexibility and input capabilities, improving the overall line and profitability of assets, asset recovery and full factory performance. (Yeung & Liu 2008) observed the effects of logistics skills on the performance of a manufacturing company in China. They classify management skills as customer-focused and knowledge-based skills.

Research has shown that customer-focused skills and knowledge-based skills have significantly influenced strong and indirect performance. In their study, (Vijayaraghavan and Raju 2008), observed a strong relationship between , logistics skills, logistics performance, and corporate financial success are all important factors consider in India . The findings suggested that both logistical management and financial success had a direct relationship. Customer satisfaction was one of any organization's major objectives. (Zhang, Zhang, and Lim 2005) found that logistics flexibility has an impact on controlling corporate customer satisfaction. This was accomplished by a survey of 273 manufacturing companies in the United States and the results showed that the flexibility of the equipment had a Customer satisfaction has a big, beneficial, and direct impact.

As a result, businesses have been able to attain client satisfaction. by creating machine flexibility that enables faster product delivery and faster delivery of finished products to customers (Zhang, et al, 2005). During the months of September and October 2003, (Sanchez, and Perez, 2005) conducted a sample Empirical study representing 126 Spanish car suppliers to determine the relationship between the range of logistics flexibility and firm performance, and between the range of logistics flexibility , firm performance and the magnitude of the variability and the magnitude of environmental uncertainty. The variables were investigated using multivariate regression.. From the above review, researcher has found that there is a promising relationship between high performance in flexible power and firm performance, although the magnitude of flexibility. For a good performance, it was not equally vital. The findings, on the other hand, suggest that rather than flexibility, firms gain basic flexibility abilities (at the store level) (at the customer-supplier level).

Integrated flexibility skills, on the other hand, are unquestionably more linked to strong performance than basic flexibility capabilities. As a result, businesses may miss out on opportunities to increase their competitiveness by undermining the flexibility of customer and supplier. (Morash and Clinton 1998) examined customer value creation in a combination of logistics / supply chain co-operative intimacy and efficiency. They've created models that distinguish logistics as an integration of manufacturing and marketing roles within an enterprise, as well as Suppliers and customers have a symbiotic relationship.

Testing data from approximately 2,000 organizations in the USA, Australia, Japan, and in Korea, they have established that good performance implies excellent performance. (Tracey and Tan 2001) found that supplier support and integration, as well as satisfied and firm customer performance, had an impact on customer performance. The study looked into the opinions of 53 industrial companies from across the USA. As a consequence of the arts, professional suppliers of high-quality goods and on-time delivery have a direct and precise impact on consumer loyalty and productivity. (Ellinger, Daugherty, & Keller, 2000), He further confirmed in his research that, logistics performance shows significant success in strong financial performance, therefore, logistics performance appears to have a direct impact on financial performance.

In their study, (Keebler and Plank 2009) looked at the effectiveness of side effects in US businesses and discovered seven characteristics made a difference in manufacturing firms. Evidence has been found that the performance of logistics as a whole has attempted to reduce the amount of resources used compared to the results obtained (efficiency), achieving previously defined objectives (performance), gaining size compared to participants (diversification) (Fugate, et al, 2010). Ability to meet customer satisfaction (quality) ensured that the performance of the logistics management was sound. In recent days, many researchers have found that improved information exchange can have a profound effect on a company's performance and efficiency.

A study by (Hyvönen 2007), in information technology and logistics management in Finland, has confirmed that the invention of logistics/supply chain management, information technology aims to improve customer satisfaction. According to (Green Jr., et al., 2008) of their study of US firms on of the organization in terms of procurement has revealed that the success of the logistics has led to productive performance, growth in confidence and new product launches. Thus, competition in the manufacturing industry was within the range of resources that provided logistics management strategies. (Toyli, et., 2008) prepared a study of logistics performance on the financial performance of Finnish SMEs. The results were that the performance of logistics was positively related to the financial performance of the companies.

2.7. Research Gaps

The researcher is no longer isolated and talks about suppliers, manufacturers, distributors, and customers as they are managed and treated as an independent business due to the international dependence on their product partners. Companies that make good use of direct transactions direct their efforts toward customer service, profitability, and long-term performance. According to the literature review above the following research gaps have been identified for the purpose of this study:- Research conducted at a different level in supply chain management focused in manufacturing plants but limited research in service sectors & public providers like AAWSA. Therefore, this study will fill the literature gap on this issue; The very goal of any company whether it is manufacturing plant or service giving is to realize the satisfaction of customers. The process of locating, obtaining and transporting the inputs needed to do this is the core function of logistics and supply chain management. Specifically in the manufacturing industry, supply chain design requires a great deal of focus on physical product and a broader supplier base. Service

firms, on the other hand, typically have little need for physical inputs other than office supplies, and often work with a much smaller group of suppliers, but public provider like AAWSA is quite different from those service firm that need little physical inputs other than office supplies.

Clean water supply and liquid waste management sections in AAWSA require physical products and supplier base other than office supplies. The authority has its water resource from rivers and ground which require physical products and a broader supplier base, chemicals for cleansing the generated water, different sized tubes to direct the water to the customers, water meters, and different equipment for liquid waste management, huge spares, chemicals for liquid waste detection etc. also require physical product and broader supplier base.

Such public providers are not considered equally as manufacturing plant in prior research to see the effect their level of supply chain on the wellbeing of their performance. In addition what has to be in consideration is that there are five main differences between service and manufacturing organizations: the tangibility of their output; production on demand or for inventory; customer-specific production; labor-intensive or automated operations; and the need for a physical production location of course service and manufacturing organizations share many characteristics. Many manufacturers offer their own service operations and both require skilled people to create a profitable business. AAWSA is a sole nonprofit clean water and sewerage service provider which operates to satisfy the water supply and liquid waste management service needs of customers. This in turn requires the provision of essential customer service at lowest possible total cost. Logistics and supply management can help to improve the authority's performance through delivering its services in the desired time and quality at the right place and at a reasonable cost to the final consumers. Research conducted at a different level in supply chain management focused in manufacturing plants other than service sectors & public providers like AAWSA. Therefore, at least to the knowledge of the researcher there has not been a study conducted as to whether logistics management practices can affect the performance of AAWSA and this study therefore, will fill this gap by examining the effect of logistics and supply management practices on organizational performance of AAWSA.

2.8. Conceptual frame work

(Fugate et al. 2010) examined the correlation between logistics and supply management activities and organizational performance, ensuring that the functioning of the logistics performance is quantitative and is a function of the resources used in the use of the logistics, providing objectives and outcomes to participants.

In this setting, the authors assume that an investigation of the performance of an asset should be based on an assessment of the set of performance measures, especially, efficiency, efficiency and classification. According to these authors, efficiency is a factor related to the use of assigned resources, performance can be defined as achieving objectives. They have a high level of integrated human resource results, preparation and execution of customer needs solutions, minimize downtime, conflict with customer concerns, increase working standards due to transparency (short-term), enable lower levels of capital remaining and invested, and thus increase productivity and opportunities to reach the last days, according to (Fugate et al 2010). In this context, (Fugate et al 2010), in conducting a technical study to analyze the relationship between the variability of logistic and supply management practices and their effect on organizational performance, outlined the following conceptual model:

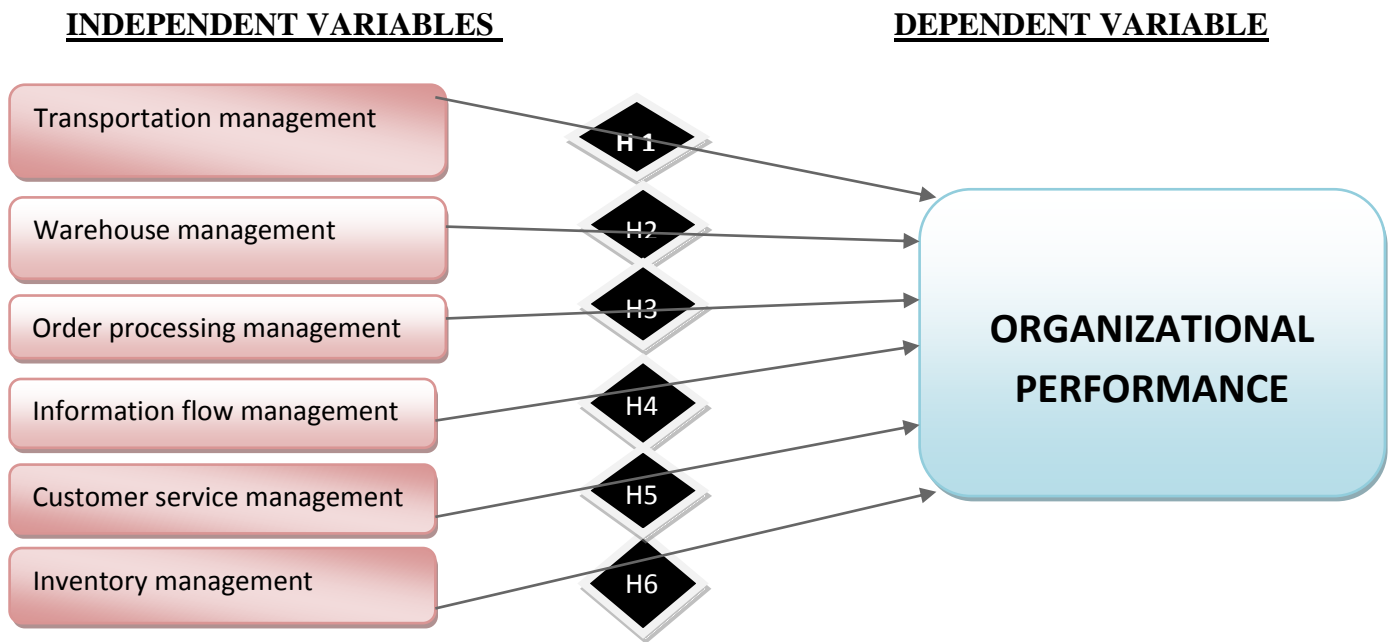


Figure 2: Conceptual Frame Work

Source: (Fugate et al 2010) & researchers own logistics and supply management model

2.9. Research Hypothesis

According to (Kothari 2004), hypothesis is a logical testable statement expressing a hypothesized relationship between two or more variables. Hypothesis testing is often used to describe variation in the independent variable or predict organizational outcomes.. Accordingly, for the purpose of this study, the following 6 (six) hypotheses were formulated based on previous research findings from literature, and tested. As a result, the following hypotheses were developed to explain the proposed overall effect of logistics and supply chain management practices on AAWSA's organizational performance.

H1:- Transport management is positively and significantly aligned with organizational performance.

H2:- Warehouse management is positively and significantly aligned with organizational performance.

H3:- Order processing is positively and significantly aligned with organizational performance.

H4:-Information flow management is positively and significantly aligned with organizational performance.

H5:- Inventory management is positively and significantly aligned with organizational performance.

H6:- Customer service management is positively and significantly aligned with organizational performance.

CHAPTER THREE

METHODOLOGY OF RESEARCH

3.1. Introduction

As to different authors a rational application of the scientific method to a problem the research approach, therefore sets out the general context of how research results can be achieved through data collection and analysis. This chapter outlines the description of the study area, research design, research approach, data source, sampling techniques, research instrument, data collection methods, data analysis method, model specification, validity, reliability and finally ethical consideration.

3.2. Study Area Description

AAWSA was recognized as an independent body by order number 68/1971 issued on 26 February 1971 and proclamation 10/195 to strengthen its formation as an independent public authority under the 14th region after the formation of the regional states. The power of the authority was extended to embrace not only Addis Ababa but also the area located inside the boundaries of the water catchment of the current dams. The key purposes of AAWSA have to be the of safe and reasonable water and sludge removal services. The following are the most important types of services provided by AAWSA related to water. These are: New cable system, line transport, line maintenance, water meter testing, leakage detection and sewage connection such as Sludge and mechanical waste disposal, Pipe line assembly, broken pipe line repair, sewer line dependence and water line transmission. These tasks are assigned to various departments and are performed by professionals and operators with skills in the field (AAWSA, 2008).

Currently the main source of board provision is the essential services and body of the provincial government and the metropolitan city of Addis Ababa, the appropriate regional country (e.g., Oromia) the official body of the AAWSA trade union. Internally, it has been planned in advance to include one manager and three managing managers (technical, Resource Management and Business Development) appointed by the Board. Below the direct royal line, there are eleven departments, six services and eight branches located periodically in the capital. As the size of the city of Addis Ababa grows, so does the demand for water; building existing branches of

authority is not enough to provide effective water services in the city. In this regard, as the authority performs its functions based on the old political structure in the city, it is difficult to distinguish the number of clients who will benefit from one branch in one small town, even if the authority is part of City Administration., AAWSA has eight branch offices. They are Addis Ketema, Gulele, Akaki, Arada, GurdShola, Megenagna, Nifassilk and Mekanisa. The branch offices are accountable for water supply lines and for sludge removal by means of vacuum trucks.

3.3. Research design and approach

The study included both descriptive and explanatory research design to quantitatively assess the relationship between logistics and supply management activities namely , transportation management ,inventory management ,information flow management, order processing, warehouse management and customer service management (independent variables), and the three organizational performance dimensions namely accounting returns, growth and stock market performance (dependent variable) using a questionnaire.

Quantitative analysis is an approach to testing objective hypotheses by analyzing the relationship between variables, according to (Creswell 2014).These variables can be calculated in turn, usually on tools, according to him, such that mathematical methods can be used to evaluate numbered data . Thus to empirically test the hypotheses developed for the study the researcher employed quantitative research approach.

3.4. Data source

The researcher used both primary and secondary data to obtain an overview of the current situation in relation to the logistics and supply management system in AAWSA and its effect on organizational performance. Accordingly, basic information was collected from AAWSA employees who directly or indirectly benefit from logistics and supply management activities of the firm by using structured questionnaire. In addition, the researcher used secondary data as relevant journal articles, books and authority profiles.

3.5. Sampling Design

3.5.1. Target Population

Population is the collective term used to determine the number of cases of the type of focus of the study. It can contain objects, people and events (Walliman, 2011). The target populations for study were employees of AAWSA who are working in the head office are 1,804 and in the eight branches of the authority are 1,521. The total number of permanent employees is 3,325 which was up to date figure right on Nov, 2020.

3.5.2. Sampling Size Determination

The ever-increasing demand for research has shaped the requirement for a good way to get the sample size you need to represent the population. Therefore, the representative sample of the proposed staff was calculated based on the formula for determining the sample size and the finite population.

In determining the sample size, formula specified by (Kothari 2004) was used.

$$n = \frac{z^2 \cdot p \cdot q \cdot N}{e^2 \cdot (N-1) + z^2 \cdot p \cdot q}$$

Where, n = sample size you want

z = the value of the standard variance in a given confidence level (to be read from the table gives the locations under the standard curve)

p = the fraction of target population estimated (50%)

q = 1-k

e = acceptable error (specification)

N = population size

Therefore, the sample representing the population was determined by 95% degree of confidence.

So at 95% degree of confidence,

$Z = 1.96$ $p = 0.5$ $q = 1-p$ $e = 5\%$ (0.05); by substitution;

$n = \frac{(1.96)^2 (0.5) (0.5) (3325)}{(0.05)^2 (3325-1) + (1.96)^2 (0.5) (0.5)}$ = 344.46 which was approximately equal to 344.

In this study the researcher used the above formula recalling the process of modeling to reduce sample error and to decide on a sample size of 344 from 3325 permanent staff at AAWSA headquarters and branch offices.

3.6. Sampling Technique

According to (Sekeran (2001) a sample is a subset of the population with the same characteristics as the entire population. For this study it was assumed that all branches of AAWSA operate in the same way in terms of policies and practices despite being located in close proximity to the city, the researcher used stratified sampling technique to select the pertinent sample. Stratified proportionate random sampling technique produce population parameters with greater accuracy and ensure that the most severely affected sample is based on the heterogonous population (Denscombe, 2008). The study used a simple random sample to pick 344 respondents in each phase.. This method is the most suitable because it allowed the researcher to use mathematical methods to analyze the results of the sample.

Table 3.1 Sampling frame

AAWSA Head office and branches	Total no of employees	Sample size	Percentage
Head office	1,804	187	54.25%
Addis ketema	184	19	5.53%
Gulele	212	22	6.37%
Akaki	154	16	4.6%
Aradda	194	20	5.83%
Gurd shola	212	22	6.37%
Megenagna	175	18	5.26%
Nefas silk	179	18	5.38%
Mekanisa	211	22	6.34%
Total	3325	344	100%

Source: From HR management supportive process owner of AAWSA head office Nov, 2020.

The distribution of questionnaire was based on a lottery system that selected a certain number of branches from head office and each branch from the list of employee data.

3.7. Research Instrument

This study used primary data and observation as the key source of information. The units of analysis were employees of the AAWSA; the researcher was interested in collecting data from people and measuring the ideas of AAWSA staff. Therefore, a list of survey questions were considered the most appropriate way to quantify staff perceptions, while minimizing the potential for researcher thinking and providing greater flexibility due to direct and responsive feedback from respondents that was summarized quickly and easily.

3.8. Questionnaire Design

In this study, key data were collected using self-administered questionnaires from AAWSA permanent staff at the Addis Ababa Head Office and branch offices. Structured and unstructured questions were included in the questionnaires. Questionnaires were used by the researcher because they cover a wide number of respondents in the shortest possible time and at a low cost.. After identifying the sample respondents, a questionnaire was provided by the researcher and given sufficient time to respond to all items on the questionnaire carefully. For this thesis, the main data collection method was questionnaire. A structured questionnaire with list of questions was used with probes to elicit relevant information.

The survey questionnaire instrument consisted of four sections: questions related to demographic, logistics & supply chain management issues, organizational performance issue and major problems of the case authority issues. Before completing the questionnaire each respondents, were given a consent form to read and sign, and the principal research described the questionnaire's technique and offered written instructions. The majority of the questionnaires were adapted from prior studies of Solomon Kidane (2017) and Stewart (2011). The questions were designed to be answered in a five-point Likert scale format for the logistics & supply chain concepts and practices and multiple choice or categorical variables relating to respondent demographics. The main part of the questionnaire was designed on a 5-point Likert scale, 1 represents strongly disagree to 5 represents strongly agree.

3.9. Data Analysis Method

Data analyses for this study were both descriptive and inferential statistics. Descriptive statistics such as frequency, percentages, methods and general deviations were used to summarize and present the data. In order to see the relationship between Logistics and Supply Management practices dimensions and Organizational efficiency, inferential statistics such as correlation coefficient and regression were used.

The statistical package for social science (SPSS) version 24 was used for the analysis. The relationship between logistics and supply management systems and organizational performance was investigated using regression analysis. The multiple regression analysis was the main method that was used to examine the relationship between logistics and supply management practices and organizational performance in the AAWSA case for this study. The multiple regressions were suggested methods widely used to investigate the link between a single dependent variable and a collection of independent factors. It was a commonly used mathematical tool in which both dependent and independent objects are metric (Hair et al., 2010).

3.10. Model Specification

Model specification can be explained as the exercise of formally asserting a model i.e. the obvious translation of theory into mathematical equations and contains using all the available relevant theory research and evidence and developing a theoretical model. The following model was proposed for the purpose of running multiple linear regressions that is necessary to investigate the effect of logistics and supply management practices on organizational performance and their statistical significance.

Research Model,

$$Y_i = \alpha + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \beta_4 X_{4i} + \beta_5 X_{5i} + \beta_6 X_{6i} + \epsilon_i$$

Where: -

Y= stands for dependent variables (organizational performance)

α = represents constant

β = (beta value) slop coefficient of the model of reintegration

X1= Transport management practices

X2= Customer service management practices

X3= Inventory planning management practices

X4= Warehouse management practices

X5= Order process management practices

X6= Information flow management practices

ϵ_i = error terms

3.11 Description of Variables and Measurement

The primary goal of this study is to find out how logistics and supply management practices affect organizational performance. Accordingly, the researcher describe different variable which cause the effect. In this research the independent and dependent variables are described as the cause and effect roles of the logistics and supply management practices and organizational performance. The dependent variable in this research is organizational performance (efficiency and effectiveness) and the independent variables are logistics and supply management practices like: (transportation management, customer service management, inventory planning management, order processing management, warehouse management and information flow management).

3.12 Validity and Reliability

3.12.1 Validity

The amount to which a test measures what it promises to measure is referred to as validity (Lakshmi and Mohideen, (2013). If a measure can measure what it claims to measure, it is considered to be legitimate. Content validity, according to Kindy et al. (2016), is the amount to which an instrument's items cover the whole range of significant elements of the area being researched. It is the extent to which the measurement instrument, in this case the measuring

questions in the questionnaire, covers the research investigating inquiries sufficiently. The majority of the surveys were adapted from earlier studies to maintain the instruments' validity. In addition, questions were pilot tested to gain input from respondents on their validity, and responses were collected and the questionnaire was updated as a result.

3.12.2 Reliability

When it comes to measures, how reproducible are they? Performed by different people on different occasions under different circumstances with supposedly different instruments that calculate the same thing is referred to as reliability (Drost, 2011). Measurement accuracy or continuity over a range of conditions under which essentially the same results should be obtained is referred to as reliability.

Cronbach's coefficient alpha is the most widely used tool for determining internal accuracy in the behavioral sciences. Cronbach's alpha is a measure of how reliable something is. It usually ranges from 0 to 1. If > 0.9 = Excellent, > 0.8 = Good, > 0.7 = Acceptable, > 0.6 = Questionable, > 0.5 = Poor, and less than 0.5 = Unacceptable, According to Gliem and Gliem (2003) .

Cronbach's alpha was calculated and compared to a 0.7 threshold. An overall value of 0.929 was attained, indicating that the research instruments had a high level of internal consistency.

Table 3.2 Reliability Analysis

Variables	Crombachs alpha	The alpha of Crombach On the basis of standardized items	no of items
Transport management	.831	.835	6
Customer service management	.893	.892	6
Inventory planning management	.903	.905	8
Warehouse management	.896	.896	5
Order processing management	.886	.888	9
Information flow management	.908	.911	9
Organizational performance	.832	.832	6
Over all	.929		

Source: Researcher, 2021

Cronbach's alpha coefficients as shown in table 3. 2 accounted for information flow management and inventory management which are 0.908 and 0.903, respectively, demonstrate excellent reliability. Cronbach's alpha coefficients for warehouse management, customer service management, order process management, organizational performance, and transportation management, on the other hand, are all above 0.8, indicating that the variables of measurement are good. As a result, the overall reliability of the metrics utilized in this study is acceptable.

3.13. Ethical Consideration

As far as possible, attempts were made to consider some ethical issues. Out of which soliciting explicit consent from the respondents the first so as to ensure their participation to the study was not out of their own volitions. The researcher was ensured that the respondents were aware of the objectives of the research and their contribution to its completion. Furthermore, treating the respondents with respect and courtesy was another ethical issue which was considered during the survey. Maximum effort was exerted to make respondents feel at ease and more likely to give honest responses to the questionnaire. Various ethical issues were also carefully followed in the data analysis process.

CHAPTER FOUR

RESEARCH RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides an overview of the data analysis, research findings, and discussions respectively based on the study in the first chapter, the research objectives and research questions were mentioned.

4.2 Response Percentage

By dividing the number of completed questionnaires by the number of eligible sample participants, the response percentage is calculated (Frohlich, 2001). The most usually compared statistic for evaluating the quality of surveys is the response rate (Johnson and Owens, 2008). There is no simple response rate that assures a sample of the population that is representative. Most reviewers seek for a response rate as a general rule of thumb of 70% or higher (Rubinfeld, 2004).

A total of 344 questionnaires were distributed to permanent employees of AAWSA at head office and eight branches who engaged in warehouse, procurement, facilities and inventory as well as to employees who have indirect exposure but having enough knowledge about the logistics and supply management activities of the authority. A total of 320 questionnaires were returned to the researcher, representing a response rate of 93.02 percent whereas, 24 (6.98) percent questionnaires were not returned from respondents. Therefore, 320 questionnaires were considered to be sufficient for the study as it is higher than the rule of thumb for the general response rate.

4.3 Background Information on Respondents

The back ground information about respondents is presented in this section. The background information collected included age, gender, educational level, and work experience. To understand the male and female participation in the sample, gender was assessed. The respondents' level of education was deemed significant because it implied that they were well-educated and could understand and react to the study's issues. Work experience was essential to

ensure familiarity and experience, as well as exposure to logistics and supply management activities, among the respondents.

Table 4.1 Demographics of respondents

	ITEM	FREQUENCY	PERCENT	CUMMULATIVE PERCENT
SEX	Male	196	61.3	61.3
	Female	124	38.7	100.0
	Total	320	100.0	
	ITEM	FREQUENCY	PERCENT	CUMMULATIVE PERCENT
AGE	18-25 years	8	2.5	2.5
	26-35 years	151	47.2	49.7
	36-45 years	91	28.4	78.1
	> 45 years	70	21.9	100.0
	Total	320	100.0	
	ITEM	FREQUENCY	PERCENT	CUMMULATIVE PERCENT
EDUCATIONAL BACKGROUND	<diploma	2	.6	.6
	College diploma	7	2.2	2.8
	Bachelor's degree	229	71.6	74.4
	Masters	82	25.6	100.0
	Total	320	100.0	
	ITEM	FREQUENCY	PERCENT	CUMMULATIVE PERCENT
WORK EXPERIENCE	1-5 years	84	26.3	26.3
	6-10 years	131	40.9	67.2
	11-15 years	75	23.4	23.4
	>15 years	30	9.4	100.0
	Total	320	100.0	

Source: Researcher, 2021

As it was revealed in the table 4.1 above, the Researcher discovered that males accounted for 61.3 percent of the respondents, while females accounted for 38.7%. This shows that both men and women were fairly involved in the study.

Regarding the age distribution of the respondents, the large number of respondents dominated by the age group of 26-35 were 151 (47.2%), respondents whose age fall in the age group of 18-25 years were 8 (2.5%), those in the age group of 36-45 years were 91 (28.4%) and those above

45 years were 70 (21.9%). This could show that nearly half of the sampled respondents in the authority were young employees.

According to the findings, the majority of respondents (71.6%) had a first-degree level of education, followed by 25.6 percent with a second-degree or higher level of education, 2.2 percent with a diploma, and 0.6 percent with a level of education below diploma. This suggests that the respondents had adequate educational levels to comprehend and react to the study's issues.

The researcher found out the years of service the respondents have directly or indirectly with the logistics and supply management functions in the case authority. The responses were analyzed, and the findings are summarized in table 4.1 above. According to the results, the majority of respondents (40.9%) had 6 to 10 years of work experience, while (26.3%) had 1 to 5 years of work experience, (23.4%) had 11 to 15 years of work experience, while just(9.4%) had more than 15 years. This indicated that the majority of the respondents (73.7%) had worked for a long time, implying that they were in a position to provide reliable information about the report.

4.4. The current state of logistics and supply management practices parameters of AAWSA

The first main objective of the study was to assess the current status of logistics and supply management practices of AAWSA. The logistics and supply management practices included in the study which were Customer service management, warehouse management, inventory management, transportation management, information flow management, and order process management were all examined. The Likert scale of a five-point scale with 1 = Strongly disagree; 2 = Dis agree; 3 = Neither agree nor disagree; 4 = Agree; 5 = Strongly agree was used to rate the state of logistics and supply management practices . Means and standard deviations were used to analyze the data for aspects of the independent and dependent variables. The means recorded were interpreted as follows: 1-1.79 = strongly disagree/ very low; 1.80-2.59 = Disagree/ Low Extent 2.60-3.49 = neither agree nor disagree or moderate Extent; 3.40-4.19 = Agree/ Great Extent; 4.20-5.0 = strongly agree/ Very great extent. *(ADAPTED FROM: Educational planning and Research Division – (EPRD),MOE,2006)*

4.4.1 A summary of mean and standard deviation about transport Management Practices

A Summary result of mean and standard deviation about the current state of AAWSA's transportation management practices:

Table 4.2: Transport management practices

Transport management practices	N	Mean	Std. Deviation
The current transportation performance provides efficiency in logistics	320	2.69	1.101
The transportation system of the company like timely delivery and safely satisfy your customer	320	2.60	.974
Transportation and distribution of by using other transportation company reduce cost of logistics	320	2.60	1.084
Is the company reach or applied economies of scale and economies of distance to minimize transportation cost per unit	320	2.65	1.049
The uses of information flow to plan the logistics activities	320	2.90	1.136
Smooth information flow to all logistics functions	320	2.78	1.122
Over all	320	2.7016	0.79493

Source: researcher 2021

As revealed from the table 4.2 above, the use of information flow to plan Logistics operations had the highest mean (M= 2.90, SD= 1.136), followed by a smooth information flow to all logistics functions (M= 2.78, SD= 1.122).The current transportation performance provides efficiency in logistics (M= 2.69, SD= 1.101), Economies of scale and distance are achieved or applied by the company minimizes trans partition cost per unit (M=2.65, SD= 1.049), The assertion trans partition system of the authority like timely delivery and safely satisfy customers scored (M= 2.60, SD= 0.974) ,Transportation and distribution by using other transportation company reduce Logistics costs (M=2.60, SD=1.084) are all moderately used. The investigation also revealed a wide standard deviation range of 0.974 to 1.136, implying that respondents' opinions on transportation management activities were more varied.

The table above shows that transportation management was modestly practiced, as measured by the total mean and standard deviation (M=2.702, SD= 0.79493). in the authority. Therefore, as to the individual and cumulative results of the parameters the study's findings in the table above

contradict the conclusions of the literature review. Sabry (2015) claimed that among the components of commercial logistics systems, transportation is the most essential economic activity. It provides a physical link by moving and storing resources for production, as well as an outbound logistical link by moving and storing finished items to customers.

4.4.2 Customer Service Practices

A summary mean and standard deviation about how AAWSA's customer service activities were doing are as follows:

Table 4.3: Customer service practices

Practice conditions for customer service	N	Mean	Std. Deviation
Customer satisfaction in logistics activities	320	2.48	1.071
Customer service policy of the company results lowest cost of lost sales	320	2.94	.942
Impact analysis of service in logistics on cost incurred and profit earned Done on regular basis	320	2.57	.977
The employees in customer Service area has enough Knowledge to serve customers	320	2.95	1.103
Customer satisfaction is evaluated and measured on a regular basis.	320	2.68	1.050
Proper customer compliant handling	320	3.11	1.007
Over all	320	2.7880	0.82779

Source: researcher 2021

Proper customer compliant handling was somewhat practiced, as shown in table 4.3, with the highest mean (M= 3.11, SD= 1.007), followed by the employees in customer service area has enough knowledge to serve customers (M= 2.95 , SD= 1.103). Customer policy of the company results lowest cost of lost sales (M= 2.94, SD= 1.071), Implementation of regular customer satisfaction evaluation and measurement (M=2.68, SD= 1.050), (M= 2.57, SD= 0.977) application of well-developed tool to check customer satisfaction in logistics activities (M=2.48, SD= 1.071) were moderately practiced respectively.

The standard deviation ranged from 0.94 to 1.103, according to the report, indicating that respondents' perspectives on customer service practices were more varied.

The overall mean and standard deviation result (M=2.788, SD=0.82779) in the table above indicated that customer service was moderately practiced in the authority. Therefore; In terms of

individual and combined criteria, the findings in (table 4.3) contradict with the literature review provided in the second chapter of the study in terms of customer service activities.. The primary value of logistics, according to Bowersox, (2002), is to satisfy consumer needs in the most cost-effective way possible. Basic customer service programs typically focus on logistics operations and guaranteeing that the business can supply its consumers with the right quantity, right commodity, right details, right time, right location, in the right condition, and at the right price.

4.4.3 Results of Measure of inventory management practices

A summary of individual questions and overall mean and standard deviation result about the current state of inventory management practices in AAWSA.

Table 4.4: Inventory management parameters

Practice criteria for inventory management	N	Mean	Std. Deviation
The inventory is used to determine the quantity ordered is based on real demand analysis	320	3.07	1.073
The inventory model used target to minimize overall total inventory costs like holding, ordering, and stock out	320	2.75	1.008
The supply and demand analysis of inventory ordering has a positive impact on customer satisfaction	320	3.07	1.069
The current inventory management and planning system of the company assist the company's competitive strategy	320	2.74	1.007
Application of warehouse safety standards level	320	2.77	1.032
Periodic inventory counting	320	3.24	1.169
Inventory management keeps the authority's costs to a minimum.	320	3.01	1.125
Automated inventory recording	320	2.83	1.150
Over all	320	2.9352	0.83451

Source: Researcher 2021

According to the table 4.4 above, the assertion that periodic inventory counting has a positive impact on customer satisfaction received the highest rating (M= 3.24, SD= 1.169), the statement that supply and demand analysis of inventory ordering has a positive effect on consumer satisfaction (M= 3.07, SD= 1.069) followed, indicating that it was moderately practiced. The quantity ordered is calculated using an inventory model based on actual demand analysis. (M= 3.07, SD= 1.073), Acost-cutting inventory control method (M= 3.01, SD= 1.125), and automated

inventory recording (M= 2.83, SD= 1.150). The implementation of warehouse safety guidelines was moderately used at (M=2.77, SD=1.032). The inventory model (M=2.75, SD= 1.008) was used to measure the quantity ordered based on actual demand and the authority's new inventory management and planning method assisting the authority's competitive strategy (M=2.74, SD=1.007) received the lowest ratings, indicating that both were moderately practiced.

The study also revealed a large standard deviation ranging from 1.169 to 1.007, implying that respondents' opinions on inventory management activities were more diverse. According to the above table, inventory management was moderately exercised in the authority, with an average mean and standard deviation of (M=2.9352, SD= 0.83451).

The findings from the above table disagree with the study of (Bowersox, et al., 2010).who concluded that the degree to which a company was committed to delivering goods quickly in order for it was a crucial competitive component was to meet a customer's inventory need .

4.4.4 Warehouse Management Practices

The goal of the research was to learn more about the warehouse management activities of AAWSA. The results are shown in Table 4.5.

Table 4. 5: Warehouse management practices

Warehouse management	N	Mean	Std. Deviation Practices
The design of the warehouse is easy to access items, free from damage of items and convenient to load and unload	320	2.80	1.166
The design of the warehouse system is properly done to improve customer service and eliminate errors in warehouse operation	320	2.90	1.132
Warehouse operators are skilled to use computer and other technologies to perform warehouse activities	320	3.00	1.037
Application of warehouse safety standards	320	2.86	1.047
Planning and optimizing warehouse Layout	320	2.86	.996
Over all	320	2.8844	0.90530

Source: Researcher 2021

As revealed from the table 4.5 above, Warehouse employees are adapted in using computers and other technologies to conduct warehouse tasks, according to the statement (M= 3.00, SD= 1.037) indicating that it was moderately practiced followed by the design of the warehouse system is properly done to improve customer service and eliminate errors in warehouse operation (M=

2.90 SD= 1.132). The assertion Planning and optimizing warehouse layout (M= 2.86, SD= 0.996), the assertion the use of warehouse safety requirements (M=2.86, SD=1.047) was moderately practiced. The least rated statement the design of the warehouse is easy to access items, free from damage of items and convenient to load and unload (M= 2.80, SD= 1.166) showing it was moderately practiced.

The result at the same time indicated having a large standard deviation, ranging from .996 to 1.166, indicated that respondents' opinions on warehouse management procedures were more variable. Warehouse management was fairly practiced, as evidenced by the total mean and standard deviation of (M=2.88, SD=0.07746). Therefore, from the cumulative and individual results the findings in the above table are consistent with the literature review in the study's second chapter. According to (Alberto 2000), location to production facilities for consumers and suppliers is a factor in time and reliability.

4.4.5 Order processing Management practices

The goal of the study was to learn more about AAWSA's order processing management processes. Table 4.6 shows the results of the respondents' responses.

Table 4.6: Order processing Management practices

Order processing management Practices	N	Mean	St deviation
Electronic order processing is Applicable	320	2.54	1.114
There is delivery of right quality of products at first order	320	2.78	.913
On time order processing is applicable	320	2.44	1.140
There is a use of order processing system	320	2.75	1.083
Achieves timely delivery	320	2.63	1.054
Ensures internal satisfaction	320	2.75	.929
Ensures zero double payments	320	3.08	1.057
uses order tracking systems	320	3.00	1.026
Achieves minimum order processing costs	320	3.09	1.068
Over all	320	2.7844	0.75636

Resource: Researcher:2021

As revealed from the table 4.6 above, the statement that the order process management achieves minimum order processing costs (M= 3.09, SD= 1.068) followed by Ensuring zero double

payment (M= 3.08, SD= 1.057). using order tracking systems (M= 3.00, SD= 1.026), delivery of right quality of products at first order (M=2.78, SD= 0.913), Using order processing system (M=2.75, SD= 1.083),Ensuring internal satisfaction (M=2.75,SD=0.9290),achieving timely delivery (M= 2.63, SD= 1.054),Application of electronic order processing(M=2.54,SD=1.114), were occasionally practiced respectively and the statement that orders are processed on time (M=2.44,SD=1.140) Is practiced at small extent.

The analysis also revealed a large standard deviation ranging from 0.929 to 1.140, implying that respondents' opinions on the responses delivered under order processing management procedures were more variable. According to the preceding table, order processing management was fairly practiced, with an overall mean and standard deviation of (M=2.784, SD= 0.75636). As a result, the findings contradict with the literature review presented in the study's second chapter, which is according to (Croxtton, Garcia-Dastugue , Lambert,& Rogers 2001). Order processing is often a key component of automation, with an order cycle providing a key customer and organizational connection.

4.4.6 Information Flow Management Practices

The aim of the study was to determine the current state of AAWSA's information flow management practices. Table 4.7 shows the results of the respondents' responses.

Table 4. 7: Information flow management practices

Information flow management practices	N	Mean	Std. Deviation Practice
There is Smooth information flow to all logistics functions	320	2.91	1.116
There is a Practice of internal information sharing	320	3.02	1.143
The firm Invested on information communication systems	320	2.96	.997
The firm Achieves accurate demand forecasting	320	2.90	.976
The firm Achieves timely respond to customer references	320	2.82	.987
The firm Achieves optimal Inventory	320	2.88	1.016
The firm Achieves smooth flow of materials and products	320	2.75	1.056
The firm Use electronic order Processing	320	2.68	1.177
Use electronic customer feedback	320	2.32	1.016
Over all	320	2.8035	0.80192

Source: Research, 2021

As revealed from the table 4.7 above, a practice of internal information sharing was moderately practiced with relatively highest mean ($M= 3.02$, $SD= 1.143$) followed by the firm investment on systems of information and communication ($M= 2.96$, $SD= 0.997$). All logistical functions have a seamless flow of information ($M= 2.91$, $SD= 1.116$).The firm achieves accurate demand for casting ($M=2.90$, $SD= 0.976$), The firm achieves timely respond to customer references ($M= 2.88$, $SD= 1.016$),The firm achieves optimal inventory ($M=2.82$, $SD= 0.986$),The firm achieves smooth flow of materials and products($M=2.75$, $SD=1.056$),Application of electronic order processing in the authority ($M=2.68$, $SD=1.177$) were moderately practiced respectively. On the other hand the use of electronic customer feedback ($M=2.32$, $SD=1.016$) was used to a limited extent. The analysis also revealed a large standard deviation ranging from 0.976 to 1.177, implying that respondents' opinions on the responses offered under information flow management procedures were more variable.

According to the above table, information flow management was modestly performed, with an overall mean and standard deviation of ($M=2.803$, $SD= 0.20976$). As a result of the total and individual outcomes in the table above, the conclusions of AAWSA's information flow management practices contradict the literature review offered in the study's second chapter. Grunt and Nowa kowska(2007),claim that, Effective logistics management in the enterprise is based largely on the flow of information, that should occur as smoothly and quickly as much as possible, in order to provide administrators with a comprehensive understanding. Computers, the internet, and information communication systems are used in almost every aspect of logistics, including shipping, warehousing, order processing, materials management, and procurement. It can help companies to achieve competitive advantages by providing customers with superior services (Adebambo and Toyin, 2011).

4.5 Contribution of logistics and supply management practices on organizational performance

The study needed to determine the extent to which logistics were involved in this section of data analysis and supply management practice contributes to the organizational performance of AAWSA. Organizational performance was measured using a variety of parameters.

Table 4.8: organizational performance of AAWSA (**Efficiency and effectiveness**)

Organizational performance Parameters	N	Mean	Std. Deviation
Services offered in the authority are good(Effectiveness)	320	3.18	1.045
Decision making in the authority is efficient(effectiveness)	320	2.84	1.090
There is avoidance of product rejection(Effectiveness)	320	2.80	.959
There is improved levels of professionalism in the authority (Efficiency)	320	3.04	1.094
There is real time delivery of goods and services in the authority (Efficiency)	320	2.66	1.041
An overall reduction in costs has been incurred in the authority(Efficiency)	320	3.08	.941
Over all	320	2.933	0.75952

Source Researcher: 2021

As seen in the table 4.8 above, the assertion that the authority's services are good received the highest rating (M= 3.18, SD= 1.045), followed by avoidance of product reject/return (M= 3.08, SD= 0.941), increased levels of professionalism in the authority (M=3.04, SD= 1.094), and effective decision making in the authority (M=2.84, SD=1.090). An overall reduction in costs incurred in the authority (M=2.80, SD=0.959) and the assertion real time delivery of goods as well as services in the authority received (M=2.66, SD=1.041) were practiced to a moderate extent respectively.

The study also revealed a large standard deviation ranging from 0.941 to 1.094, implying that respondents' perspectives on the magnitude of AAWSA's organizational success were more diverse. The overall mean and standard deviation of (M=2.933, SD=0.19493) were reported in the above table, showing that AAWSA's performance was moderate. The data in the preceding table contradict the finding that SCMP is a key determinant in company performance in a prior study by (Tan, Wisner & Leong, 2005).

4.6 Relationship between Logistics and supply Management Practices and AAWSA Organizational Performance

INFERENCEAL STATISTICAL ANALYSIS

The study's second goal was to investigate the link between logistics and supply management practices and organizational performance in AAWSA (correlation) and the impact of logistics and supply management practices on organizational performance of AAWSA for the latter (multiple linear regression) analysis was used to examine the nature of relationship between the independent variable (logistics and supply management practices) and dependent variable (organizational performance).

4.6.1 Correlation Analysis

In the study, correlation analysis has been run to examine the relationship between the variables under consideration. The correlation coefficient's magnitude is used to determine the sign of the correlation coefficient determines the strength of the relationships and whether they are positive or negative. Evans (1996) proposes guidance for the absolute value of r that can be used to describe the strength of correlation (Beldjazia and Alatou, 2016). If $r = 0.00-0.19$, the relationship is extremely weak; if $r = 0.20-0.39$, the relationship is weak; if $r = 0.40-0.59$, the relationship is moderate; if $r = 0.60-0.79$, the relationship is strong; and if $r = 0.80-1.0$, the relationship is very strong.

As shown in table 4.9 below, Pearson correlation coefficients were calculated with the goal of obtaining information about the links between the dependent and independent variables.

Table 4.9: Correlation results

Correlations

		TMP	CSM	IPM	WM	OPM	IFM	OP
Transport Management Performance	Pearson Correlation	1	.742**	.624**	.533**	.600**	.726**	.698**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	320	320	320	320	320	320	320
Customer Service Management	Pearson Correlation	.742**	1	.760**	.561**	.685**	.710**	.632**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	320	320	320	320	320	320	320
Inventory Planning Management	Pearson Correlation	.624**	.760**	1	.772**	.755**	.701**	.529**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000
	N	320	320	320	320	320	320	320
Warehouse Management	Pearson Correlation	.533**	.561**	.772**	1	.688**	.624**	.492**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000
	N	320	320	320	320	320	320	320
Order Processing Management	Pearson Correlation	.600**	.685**	.755**	.688**	1	.859**	.569**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000
	N	320	320	320	320	320	320	320
Information Flow Management	Pearson Correlation	.726**	.710**	.701**	.624**	.859**	1	.707**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	320	320	320	320	320	320	320
Organizational Performance	Pearson Correlation	.698**	.632**	.529**	.492**	.569**	.707**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	
	N	320	320	320	320	320	320	320

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

Source: - Researcher, 2021

The findings revealed a favorable relationship between transportation management practice and organizational performance ($r=0.698$, $p<0.01$). The association between the two variables is strong, according to Evans (1996) magnitude of correlation. Furthermore, customer service management practice was found to be favorably connected with organizational performance ($r=0.632$, $p<0.01$). As a result, the two factors have a significant link. Inventory management technique was also shown to be positively connected with organizational performance ($r=0.529$, $p<0.01$), indicating a moderate link between the two variables. Furthermore, the findings revealed

that warehouse management practice had a moderately good link with organizational performance ($r=0.492$, $p0.01$).

According to the findings, there is a positive correlation between information flow management practice and organizational performance ($r=0.707$, $p0.01$), indicating a strong association between the two variables based on Evans' correlation magnitude (1996). According to the findings, order processing management methods and organizational performance have a moderate and favorable association ($r=0.569$, $p0.01$). As a consequence, the data in table 4.9 confirms theories (H1- H6). i.e all independent variables(Transport management, customer service management, inventory planning management, warehouse management ,order process management, and information flow management) are positively correlated with (Organizational performance) which is a dependent variable.

In general, the correlation analysis revealed that there is a positive link between AAWSA's logistics and supply management techniques and its organizational performance. These findings are consistent with the findings of (Srivastava, 2006) that Logistics and SCM practices are a series of activities carried out to promote successful and productive supply chain management.

4.7 Preliminary Test

A preliminary analysis was performed to validate the assumptions of regressions such as multicollinearity, linearity, normality, and homoscedasticity tests before using regression analysis to test the study hypothesis.

4.7.1 Multicollinearity assumption

Multicollinearity is a statistical phenomenon where predictor variables exhibit perfect or exact relationship between them. In multicollinearity it is difficult to estimate individual coefficients accurately. As a result, conclusions about the relationship between the outcome and predictor variables will be incorrect (Alibuhtto and Peiris, 2015).. Multicollinearity can be detected by the most commonly used methods such as Collinearity diagnostics which were calculated by not in tolerance values and variance inflation factor (VIF).

According to Sekaran and Bougie (2016), Field (2013), and Pallant (2010), appropriate tolerance and variance inflation factor (VIF) values If below 0.10 and above 10 respectively then

multicollinearity would be a problem which would underestimate the regression coefficients. As a result, collinearity diagnostics were carried out using SPSS via VIF values, and an appropriate value of tolerance was The values were found to be within the rule of thumb's limits, showing that multicollinearity was not a concern.

Table 4.10: Collinearity Diagnosis

Model	Collinearity	Statistics
	Tolerance	VIF
1 Transport management	.349	2.866
2 customer service management	.287	3.487
3 Inventory planning management	.232	4.314
4 warehouse management	.366	2.735
5 Order processing management	.199	5.014
6 Information flow management	.192	5.201

Source:-Researcher’s survey data output (2021)

Table 4.13 shows that the tolerance values ranged from 0.192 to 0.366, which is within the threshold of above 0.10. The VIF value also ranges from 2.735 to 5.201, which is below the ten-point threshold; As a result, the above result suggested that there is no multicollinearity problem that would prevent the study's regression coefficients from being estimated.

4.7.2. Normality assumption:

Variables of normal distributions are assumed in multiple regressions. This means that errors are typically distributed, and a plot of residual values will look like a regular curve. Two common approaches for verifying the normality assumption are the use of a histogram (with overlay normal curve) and a Normal P-P Plot. The histogram generated below was normal, and the P-P plot below followed the diagonal reference line, meaning that the following values were normal.

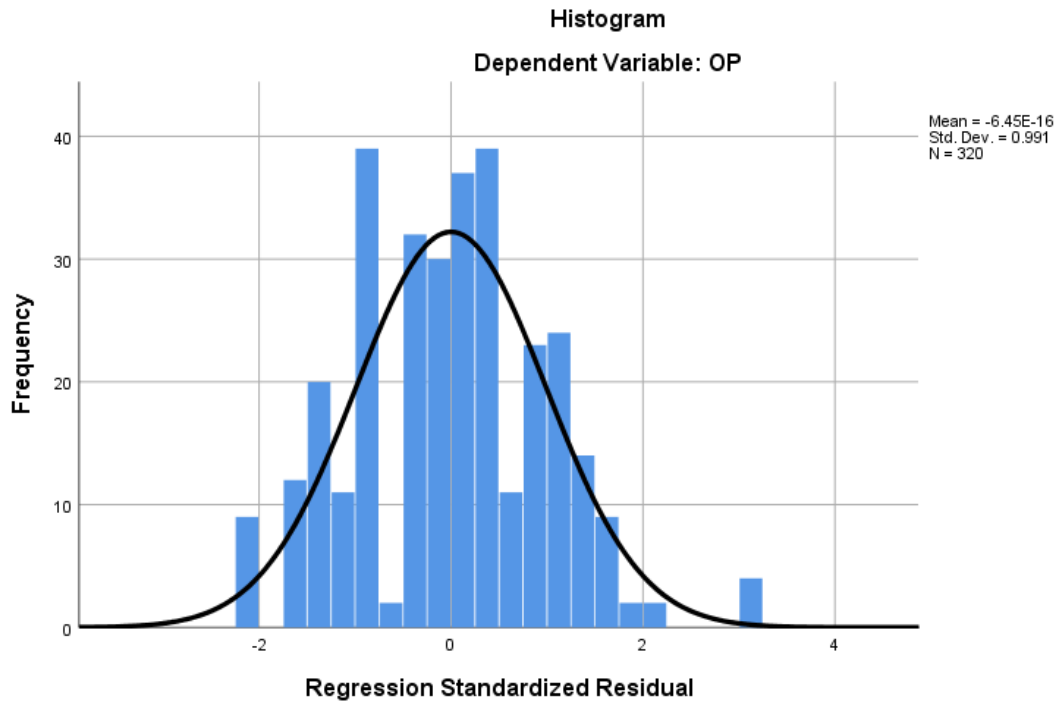


Figure 3: Normality Assumption

4.7.3 Linearity Assumption

The degree to which changes in the dependent variable are related to changes in the independent variables is referred to as linearity. Scatter plots of the regression residuals for each model using SPSS version 24 software were used to decide if the relationship between the dependent variables and the independent variables was linear. The points in the scatter plot of residuals (shown below) are in a fairly straight line from bottom left to top right. As a result, it was shown that the linearity assumption was not violated as it is seen in the figure below.

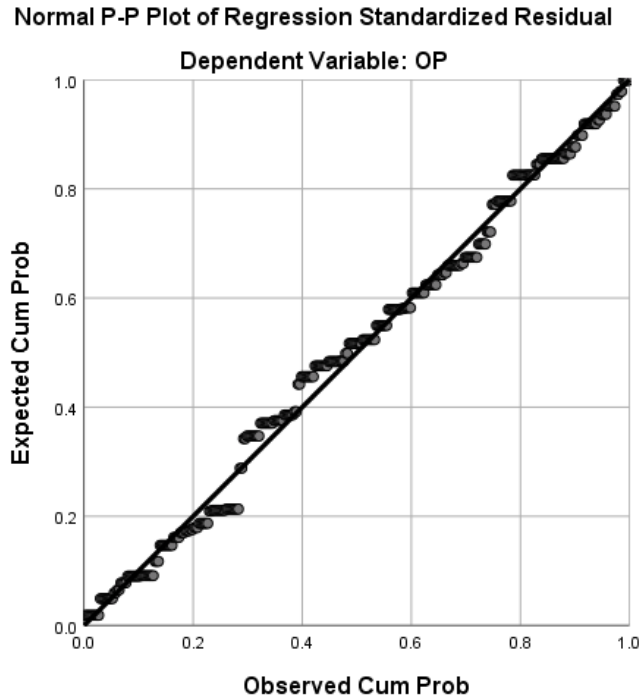


Figure 4: Linearity Assumption

4.7.4 Homoscedasticity assumption:

The homoscedasticity assumption states that at all stages of the independent variables, errors have the same variance. This suggests that the errors are evenly spread throughout the variables. This is visible when all values of the predictor variable have the same variance along the regression line. A plot of the standardized residuals by the regression standardized expected value is analyzed visually can be used to search for homoscedasticity. In an ideal world, residuals would be evenly distributed around zero (the horizontal line). Heteroscedasticity refers to when the scatter isn't even; common patterns of infringement include fan and butterfly shapes.

The researcher used SPSS version 24 to construct a scatterplot of standardized residuals versus standardized predicted values to determine homoscedasticity and discovered that heteroscedasticity was not a major issue in the analysis.as in the figure below.

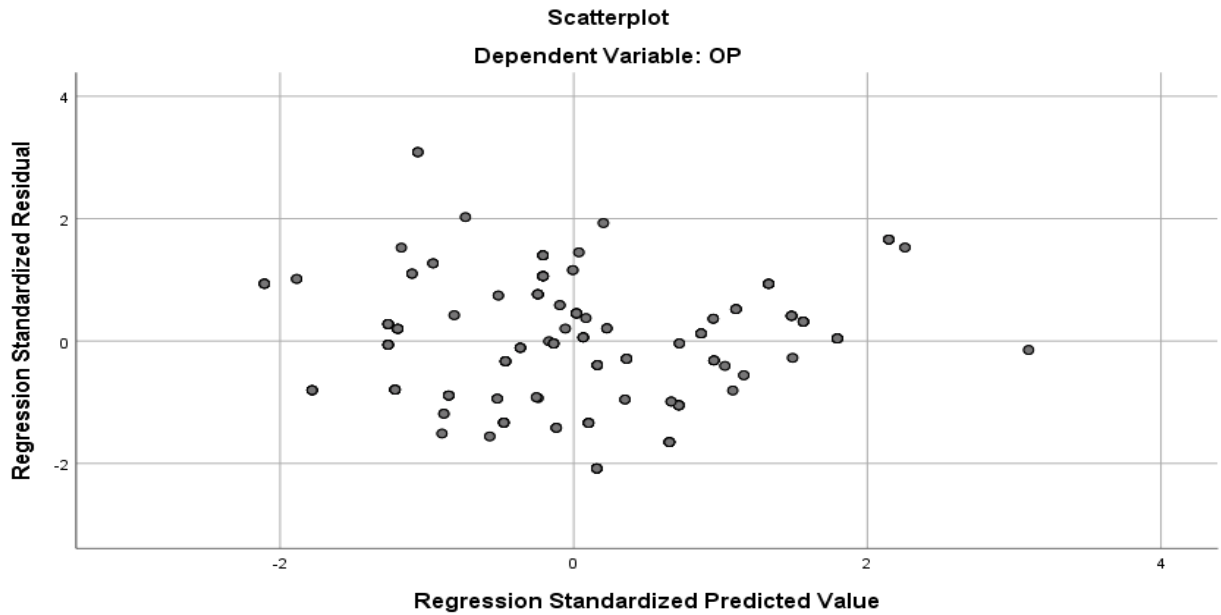


Figure 5 Homoscedasticity Assumption

4.8 Model Summary

After checking the data for the above-mentioned multiple regression assumptions and confirming that it met all of them, The regression model was tested using multiple regression analysis to assess how well it fitted the data in the study (model summary) . If the independent variables predicted the dependent variable statistically significantly (ANOVA) was tested, and how statistically significant each of the independent variables (regression coefficients) were tested as follows:-

Table 4.11: Model Summary

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.767a	.588	.580	2.952
a. Predictors: (Constant), Information flow management, warehouse management, customer service management, Transport management, Inventory planning management, Order processing management b. Dependent Variable: Organizational performance				

The "R" column represents the value of R, the multiple correlation coefficients, as seen in the preceding model summary table (table 4.11). With R value of 0.767, there was strong correlation between organizational performance and the six independent variables, indicating a high level of

predictability. As shown in the "R Square" column, the R² value (also known as the coefficient of determination) indicates the proportion of variance in the dependent variable that can be explained by the independent variables. As shown in the table, the R² value of .588 suggests that logistics and supply management methods account for 58.8% of the variation in AAWSA's organizational performance (independent variables included in the model).

4.9 ANOVA Model Fit

The F-ratio (table 4.12) in the ANOVA table below shows whether the overall regression model fits the data effectively. As seen in the table, the independent factors statistically significantly predict the dependent variable, $F = 74.534$, $p.001$ (i.e., the regression model is a good fit of the data).

Table 4.12: ANOVA Model Fit

ANOVAa

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3897.156	6	649.526	74.534	.000b
	Residual	2727.644	313	8.715		
	Total	6624.800	319			

a. Predictors: (Constant), Information flow management, warehouse management, customer service management, Transport management, Inventory planning management, Order processing management

b. Dependent Variable: Organizational performance

Table 4.13: Regression coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	4.983	.689		7.236	.000	3.628	6.338		
	TMP	.288	.059	.302	4.914	.000	.173	.404	.349	2.866
	CSM	.173	.062	.188	2.783	.006	.051	.295	.287	3.487
	IPM	-.085	.051	-.125	-1.654	.099	-.186	.016	.232	4.314
	WM	.118	.060	.117	1.949	.052	-.001	.237	.366	2.735
	OPM	-.112	.054	-.168	-2.068	.040	-.219	-.005	.199	5.014
	IFM	.324	.052	.513	6.199	.000	.221	.426	.192	5.201

a. Dependent Variable: OP

SOURCE: - RESEARCHER 2021

Standardized Coefficients

The study's third goal is to look into the (effect) impact of AAWSA's logistics and supply management practices on the organization's performance.

The standardized coefficients helped to figure out which of the independent variables is more important. They're used to compare the effects of different independent variables on the dependent variable. Information flow management had the highest standardized coefficient (.513), followed by transportation management (.302), as shown in regression coefficients in table 4.13. This showed that information flow management had a greater effect on the effectiveness of the organization Customer service, warehouse management, inventory management, and order processing management practices were graded three to six in terms of their effect on organizational performance.

The predictor variables of information flow management, transportation management, customer service management, and order processing management practices are statistically significant in predicting organizational performance, as shown in the regression coefficient table, since all of their p-values are smaller than the 0.05 alpha levels.

The p-values for warehouse management techniques (0.052) and inventory planning procedures (0.099), on the other hand, are both higher than the alpha level of 0.05, indicating that they were not statistically significant (insignificant) Changes in both variables are unrelated to changes in the dependent variable, according to the findings (organizational performance). This may be due to the emphasis given to the other variables much more than warehouse and inventory by AAWSA to increase the performance of the logistics and supply function. However, literature showed in the second chapter of the study found that warehouse management and inventory planning management techniques were critical determinants in predicting organizational effectiveness in logistics and supply management practices.

Unstandardized Coefficients

The unstandardized coefficient is the change in the dependent variable caused by a unit change in the independent variable. However, they are not comparable in terms of impact on the dependent variable.

As indicated in chapter three, the research employed the following multiple regression model to establish the statistical significance of the independent factors on the dependent variable.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

Where; Y = Organizational performance

α = constant

β = (beta value) slope coefficient of the model of reintegration

X1 = Transport management practices

X2 = Customer service management practices

X3 = Inventory planning management practices

X4 = Warehouse management practices

X5 = Order process management practices

X6 = Information flow management practices

ε = error terms

In the model, α = constant, β_1 to β_6 = The mean change in the dependent variable for one unit of change in the independent variable while retaining other constants is represented by regression coefficients. The model's independent variables are stable and ε = Error term that captures the model's unknown variance.

$$Y = 4.983 + .288X_1 + .173X_2 + .118X_4 + .324X_6 + \varepsilon_i$$

The constant value ($\alpha = 4.983$) indicates that if all other variables in the model were zero, AAWSA's organizational performance would equal 4.983. Similarly, a beta value of .288 implies that a unit change in Transportation management practice results in a change in organizational performance of AAWSA by .288. A beta value of .173 shows that a unit change in customer service improves customer satisfaction. Management practices leads to a change in organizational performance of AAWSA by .173, a beta value of .118 suggests that a single change in warehouse management practice results in a change in organizational performance of .118. AAWSA by .118 and beta coefficient of .324 indicates a unit change in information flow management practice leads to a change in organizational performance of AAWSA by .324 the

same is true for the rest variables based on the figures in the model . Furthermore, the estimate the value of the Error term was assumed to be zero. The regression coefficients revealed that all six variables are predictive of AAWSA's organizational performance. However, just four variables, as indicated by their P-values (P0.05), have significant effect on organizational performance: transportation management techniques, information flow management practices, customer service management practices, and order process management practices. This suggests that increasing these variables leads to improved organizational performance and inventory planning management and warehouse management had both statistically in significant effect on organizational performance because of this they were excluded from the model.

4.10. Hypothesis Testing

Hypothesis is simply an educated and testable guess about the answer to your research question. A hypothesis is often described as an attempt by the researcher to explain the phenomenon of interest. Those hypotheses are the researcher’s attempt to explain the phenomenon being studied, and that explanation should involve a prediction about the variables being studied. These predictions are then tested by gathering and analyzing data, and the hypotheses can either be supported or refuted (falsified) on the basis of the data. Accordingly, the six hypotheses which were developed earlier in chapter two were tested based on the regression coefficient data.

Table 4.14: Summary Result of Regression Analysis

Model		Beta	Statistical significance
1	(Constant)	4.983	.000
	TMP	.288	.000
	CSM	.173	.006
	IPM	-.085	.099
	WM	.118	.052
	OPM	-.112	.040
	IFM	.324	.000
a. Dependent Variable: Organizational performance			

SOURCE: - RESEARCHER 2021

Based on the table 4.15 above regression analyses result the hypothesis of the study are tested and presented as follows:

Hypothesis 1:

H1: Transport management is positively and significantly aligned with organizational performance

The transport management regression coefficient defined with ($\beta = 0.288$, and p-value of 0.000 less than 0.05), which indicates that 28.8% of increase in organizational performance is explained or justified due to the changes in transport management of AAWSA, assumed all other independent variables are being constant, which implies that transport management have significant and positive relationship and effect on organizational performance, therefore, the the study result supports Hypothesis(**1**). The result of this study is therefore, in agreement with the literature which explained by Sabry (2015).

Hypothesis 2:

H1: Warehouse management is positively and significantly aligned with organizational performance.

Based on the above coefficient of regression the results show that warehouse management have a beta coefficient (unstandardized β coefficient) of 0.118 and p-value of 0.052 greater than 0.05), which infers that 11.8% of increase in organizational performance is explained or justified due to the changes in warehouse management assumed all other explanatory variables are being constant, which entails that warehouse management has insignificant relationship on organizational performance. Hence, the study result does not support Hypothesis (**2**) .This implies that warehouse management does not influence the organizational performance of AAWSA .Therefore, the study disagree with the literature explained by(Alberto,2000).

Hypothesis 3:

H1: Order processing is positively and significantly aligned with organizational performance

The order processing regression coefficient result was defined with ($\beta = -0.112$, and p-value of 0.040 less than 0.05), which indicates that -11.2% of decrease in organizational performance is explained or justified due to the changes in order process AAWSA, assumed all other independent variables are being constant, which implies that order processing have significant

relationship and effect on organizational performance. Thus, the study result supports the Hypothesis (3). The result of this study is therefore in agreement with the literature which explained by (Croxtton, Garcia-Dastugue , Lambert,& Rogers 2001).

Hypothesis 4:

H1: Information flow management is positively and significantly aligned with organizational performance

The information flow management regression coefficient defined with ($\beta= 0.324$, and p-value of 0.000 less than 0.05), which indicates that 32.4% of increase in organizational performance is explained or justified due to the changes in information flow management of AAWSA , assumed all other independent variables are being constant, which implies that information flow management have significant relationship and effect on organizational performance, Thus the study result supports the Hypothesis (4). **The result of this study is therefore in agreement with the literature which explained by Grunt and Nowa kowska(2007) .**

Hypothesis 5:

H1: Inventory management is positively and significantly aligned with organizational performance.

Inventory management regression coefficient result with ($\beta= -0.085$, and p-value of 0.099 greater than 0.05), which infers that 8.5% of decrease in organizational performance is explained or justified due to the changes in inventory management of AAWSA, assumed all other explanatory variables are being constant, which shows that inventory management have insignificant relationship and effect on organizational performance. Thus, the study result does not support Hypothesis(5) . Therefore, this implies that warehouse management does not influence the organizational performance of AAWSA.

Hypothesis 6:

H1: Customer service management is positively and significantly aligned with organizational performance

The customer service management regression coefficient defined with ($\beta= 0.173$, and p-value of 0.006 less than 0.05), which indicates that 17.3% of increase in organizational performance is

explained or justified due to the changes in customer service management of AAWSA , assumed all other independent variables are being constant, which shows that customer service management have significant relationship and effect on organizational performance. thus, the study result supports Hypothesis(6). The result of this study is therefore in agreement with the literature which explained by Bowersox, (2002).

Table 4. 15: Summary of Tested Hypothesis

Hypothesis	Results
Ho: Transport management is not positively and significantly aligned with organizational performance H1: Transport management is positively and significantly aligned with organizational performance	Ho: Not supported H1: supported
Ho: Warehouse management is not positively and significantly aligned with organizational performance H1: Warehouse management is positively and significantly aligned with organizational performance	Ho: supported H1: Not supported
Ho: Order processing is not positively and significantly aligned with organizational performance H1: Order processing is positively and significantly aligned with organizational performance	Ho: Not supported H1: Supported
Ho: Information flow management is not positively and significantly aligned with organizational performance H1: Information flow management is positively and significantly aligned with organizational performance	Ho: Not supported H1: Supported
Ho: Inventory management is not positively and significantly aligned with organizational performance H1: Inventory management is positively and significantly aligned with organizational performance	Ho: Supported H1: Not supported
Ho: Customer service management is not positively and significantly aligned with organizational performance H1: Customer service management is positively and significantly aligned with organizational performance	Ho: Not supported H1: Supported

Source: - Researcher 2021

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

Introduction

This chapter outlines brief summary of the study, conclusions of the study in accordance with the study results and forward recommendations based on the overall results of the study.

5.1 Summary and discussion

The goal of this study was to determine the effect of AAWSA's logistics and supply management practices on the organization's performance.

The following three research questions guided this study: (a) what is the current state of logistics and supply management practices in AAWSA? (b) What is the relationship between logistics and supply management practices and organizational performance of AAWSA? (c) What is the effect of logistics and supply management practices on the organizational performance of AAWSA?

Based on the objective of the study, research questions and hypotheses, the questionnaire (survey instruments) for measuring the research variables were selected and organized. As a result the effect of logistics and supply management on organizational performance was measured using (The five, likert scale). Of 344 distributed questionnaires 320 (93.02%) questionnaires were collected and used for analysis. The collected data was analyzed using statistical package for social science software (SPSS) version 24. Regression analyses were employed for testing the hypotheses.

In the descriptive statistics the overall mean and standard deviation of ($M=2.702$, $SD= 0.79493$) was recorded indicating that transportation management was moderately practiced in the authority. Therefore; as to the individual and cumulative results of the parameters the findings of the study in chapter four disagree with the literature review that was conducted. According to Sabry, (2015) transport system is the most important economic activity among the components of business logistics systems. It provides the physical link through the movement and storage of materials for production, and outbound logistic through the movement and storage of finished goods to the customer.

The literature review provided in the second chapter of the study in terms of customer service activities the primary value of logistics, according to Bowersox (2002), is to satisfy consumer needs in the most cost-effective way possible. Basic customer service programs typically focus on logistics operations and ensuring that the organization can provide the right quantity, the right commodity, the right details, the right time, the right location, in the right condition, and at the right price to its customers disagree with the study finding that customer service management is moderately practiced in the authority.

Inventory management was moderately exercised in the authority, with an average mean and standard deviation of ($M=2.9352$, $SD= 0.83451$). This finding encounters with the analysis of (Bowersox, et al., 2010). Who came to the conclusion that how dedicated an organization was to producing products quickly to meet a customer's inventory demand was a major competitive factor.

The overall mean and standard deviation of ($M=2.88$, $SD= 0.07746$) indicated that warehouse management was moderately practiced. Therefore the cumulative and individual results in the findings agree with the literature review that was conducted in the second chapter of the study. According to (Alberto 2000) attention related to time and reliability includes proximity to production facilities for customers and suppliers.

An overall mean and standard deviation of ($M=2.784$, $SD= 0.75636$) was recorded indicating that order processing management was moderately practiced. Therefore, the cumulative and individual results in the findings disagree with the literature review showed in the second chapter of the study. According to (Croxtton, Garcia-Dastugue, Lambert, & Rogers 2001). Order processing is often a key component of automation, with an order cycle providing a key customer and organizational connection.

The findings about information flow management practice in AAWSA disagree with the literature review that was presented in the second chapter of the study. According to Grunt and Nowa kowska (2007), Effective logistics management in the enterprise is based largely on the flow of information, that should occur as smoothly and quickly as much as possible, in order to provide administrators with a comprehensive understanding. Computers, the internet, and information communication systems are used in almost every aspect of logistics, including

shipping, warehousing, order processing, materials management, and procurement. It can help companies to achieve competitive advantages by providing customers with superior services (Adebambo and Toyin, 2011). Because the study revealed that information flow management is moderately practiced in AAWSA.

Generally, the correlation analysis showed that there is a positive relationship between logistics and supply management practices and organizational performance of AAWSA. These findings are consistent with the findings of Srivastava, (2006) that Logistics and SCM practices are a series of activities carried out to promote successful and productive supply chain management.

Prior to applying regression analysis for testing the research hypothesis, reliability, correlation analysis and other preliminary tests (like multicollinearity, linearity, normality and homoscedasticity tests) were performed. With regard to the reliability, the results showed that all measures used in this study had an acceptable level of reliability above 0.70. Pearson correlation also indicated no problem with multicollinearity. With regard to other preliminary tests the results revealed that there were no severe data issues that would cause regression analysis assumptions to be substantially broken. The overall results of hypotheses testing indicated that transport management, order processing management, Information flow management, and Customer service management have positive and significant relationship with organizational performance. However inventory management and warehouse management have insignificant relationship with organizational performance, because their P value is greater than 0.05, Therefore, the results reported in this study supports hypotheses H1, H3, H4, and H6 which were proposed in the study.

5.2 Conclusions

The following conclusions were drawn from the study's findings and description of findings:

- The current status of logistics and supply management practices in AAWSA.

For each independent variable,(logistics and supply management practices) an average mean score was computed using descriptive statistical analysis.

The respondents replies on logistics and Supply management and organizational performance imply that the authority actually practice logistics and supply management. The majority of

respondents believed that the company's supply chain is somewhat liquid, and the authority's current performance is likewise good.

- The relationship between logistics and supply management practices and organizational performance of AAWSA

According to Pearson correlation test conducted it was proved that there was significant positive alignment between logistics and supply management activities and organizational performance in AAWSA as was proposed in the study proposal. Furthermore, logistics and supply management activities such as information flow management, transportation management, and customer service management have a positive, strong, and significant alignment with the AAWSA's organizational performance. However, logistics and supply management practices like order processing management, Inventory planning management and warehouse management practices have positive, moderate and significant relationship with organizational performance of AAWSA. The findings from correlation test show that there is positive and significant correlation between logistics and supply management activities and organizational performance of AAWSA. This significance tells that there is genuine relationship between logistics and Supply management and organizational performance in the authority.

- The effect of logistics and supply management practices on organizational performance of AAWSA

To see if the independent variables had an effect on the dependent variable, the researcher employed multiple regression analysis. As shown in the table of regression coefficients (table 4.13) the greatest standardized coefficient (.513) was in information flow management, which was followed by transport management with a standard coefficient of (.302). This found that information flow management has the greatest impact on organizational performance relative to other factors. Practices in customer service with a standard coefficient (.188), The relative effect on organizational performance of warehouse management practices (.177), inventory management practices (-.125), and order processing management techniques (-.168) was ranked from three to six. The ANOVA test result ($F = 74.534$, at $p = (0.001) < 0.05$) indicated that independent variables predict the dependent variable statistically and significantly and R square value from the regression model summary ($R^2 = 0.588$) According to the study's logistics and

supply management techniques, 58.8% of the variation in AAWSA's organizational performance can be explained. The predictor variables of information flow management, transportation management, customer service practices, and order processing management practices are statistically significant in predicting organizational performance, as shown in the regression coefficient table, which means changes in the four variables has significant effect on the change in the dependent variable (organizational performance) of AAWSA because their p-values are all less than 0.05. The p-values for warehouse management techniques (0.52) and inventory planning procedures (0.99), on the other hand, are both higher than the alpha level of 0.05, indicating that they are statistically in significant predictor which means changes in both variables has insignificant effect on the change in the dependent variable (organizational performance) of AAWSA..

5.3 Recommendations

The study recommends the following based on the findings:-The findings of the study showed that AAWSA implemented logistics management practices intermittently. Moreover, the study confirmed that logistics and supply management practices had strong and positive relationship with organizational performance of AAWSA. Therefore, the study recommends the authority to give priority and enhance the logistics management practices because if properly practiced, they can significantly improve its organizational performance from the current position. In addition, the study confirmed that logistics management practices namely customer service practice, order processing management practices, transport management practices and information flow management practices significantly influence the organizational performance of AAWSA. The study therefore recommends the authority to

- Exercise anticipates and becomes more sensitive to consumer wants through engagement with customers and an easier customer ordering system in order to benefit from the positive impact of customer service practices on organizational performance.
- Operate the authority's transportation system in a timely and safe manner to meet the needs of its customers.
- Pay special attention to order processing management via computerized order processing, because the faster an order is submitted, entered, and processed, the more time (lead time) management has to plan transportation and inventory operations while still reaching customer service levels.

- To improve the authority's electronic data interchange by investing in computers, the internet, and an information communication infrastructure.

Furthermore, as to the key informants and observation of the researcher the study established that the key logistics and supply management challenges of AAWSA were lack of top management support, in sufficient logistics and supply management capacity, difficulty in the implementation of the public procurement and disposal act , and lack of modern management technologies ;

Therefore the study recommends AAWSA that:-

- Top managers should give much attention to logistics and supply issue and modern management technologies in facilitating consistent and updated training to enhance the logistics and supply management capacity of employees at different levels.
- To alleviate the current problem of the authority due to the short comings of procurement and disposal activities through introduction and, implementation of Public procurement and disposal act.
- TO enhance its inventory management strategy through accurate inventory recording, periodic inventory counting, stock planning and optimal inventory utilization.

5.4 Limitations and research ideas for the future

5.4.1 Limitations

1. Customer service, warehouse management, inventory management, transportation management, information flow management, and order process management were the only six logistics management methods examined in the study. However, the research did not address all aspects of logistics management.
2. The research was limited to AAWSA's logistics and supply management activities in Addis Ababa area only.
3. The analysis of implementation of logistics and supply management is limited to internal process and downstream supply chain distribution network
4. The study looked at the problems that AAWSA faces in terms of logistics and supply management activities. However, the study did not consider potential solutions.

5.4.2 Future Research points

A side from correcting the limitations indicated in the preceding section, the following are future research opportunities based on the findings of this study:-

1. More research should be done on other forms of logistics management practices, such as demand forecasting as the study didn't cover all logistics management activities of AAWSA.
2. Future studies should consider expanding the scope to include the whole public providers in Ethiopia because this study is limited to Addis Ababa.
3. Further studies should be made on external factors of logistics and supply management of AAWS as the study is limited to internal processes.
4. Based on the results of this study, more research should be done on how to address the solutions for the various challenges of logistics management practices in AAWSA.
5. As to the result of the study the logistics and supply management activities namely inventory planning management and warehouse management practices are implemented at moderate level however their effect on the organizational performance of the authority is in significant ; so this issue requires further investigation

POTENTIAL LUCK

It was potential luck for the researcher to get filled the questioners in February 2021 during the time people don't hesitate to touch papers due to the fear of pandemic covid 19 as they were used to be in the hot season the time when everybody was under locked down. February 2021 was the time when almost people were careless and thought covid 19 was fake, so the researcher never faced any problem as a result of the disease.

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Appendix

QUESTIONNAIRE

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF MANAGEMENT

MBA PROGRAM

Dear Respondents:

I am a graduate student at Addis Ababa University College of Business and Economics, Department of Management. Currently, I am conducting a research titled “**The Effect of Logistics and Supply management system on Organizational Performance**”: In the case of Addis Ababa water and sewerage authority as a partial fulfillment of requirements for the award of Masters of Business Administration. The aim of this questionnaire is to collect data for the proposed study, and therefore you are kindly requested to provide the necessary information to facilitate the successful completion of the study. Your involvement is entirely voluntary and the questionnaire is totally anonymous. I confirm you that the information you share will stay confidential and only used for the aforementioned academic purpose only. So, for the success of the report, your genuine, frank and timely response is crucial. I want to thank you in advance for your kind cooperation and your precious time devoted to completing this questionnaire.

Sincerely Yours;

Daniel Edo

Note:

1. No need of writing your name.
2. Put this '√' or 'X' mark on the appropriate block/cell both for multiple choice and Likert scale questions.
3. You can email me or call and discuss the matter openly if you need more clarity at:-

(Telephone NO 09 13048066, E-mail daniedo0480@gmail.com)

PART ONE

Personal Information

1. Age:

A, 18-25 years [] B, 26-35 years [] C, 36-45 years [] D, over 45 years []

2. Sex:

A, Male [] B, Female []

3. Educational Requirement:

A, Below college diploma [] B, College diploma [] C, Undergraduate (BSc, BA) []
D, Second Degree (MSc, MA) [] E, PHD []

4. Year of service at AAWSA:

A, 1 to 5 years [] B, 6 to 10 years [] C, 11 to 15 years [] D, above 15 years []

PART TWO

Logistics and supply management

Please indicate the degree of your agreement/disagreement with the following statements associated with the logistics and supply management systems parameters; transportation management, ware house management, order processing, information flow management, inventory management and customer service management in AAWASA by putting “√” on your choice.

NO.	logistics and supply management systems parameters	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
1.	Transportation Management Parameters					
1.1.	The current transportation performance provides efficiency in logistics					
1.2.	The transportation system of the company like timely delivery and safely satisfy your customer					
1.3.	Transportation and distribution of by using other transportation company reduce cost of logistics					
1.4.	Is the company reach or applied economies of scale and economies of distance to minimize transportation cost per unit					
1.5.	Information flow uses to plan the logistics activities					
1.6.	Smooth information flow to all logistics functions					
2.	Customer Service Performance Parameters	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
2.1.	There is a well-develop tool to check customer satisfaction in logistics activities					
2.2.	Customer service policy of the company results lowest cost of lost sales					
2.3.	Impact analysis of service in logistics on cost incurred and profit earned done on regular basis					
2.4.	The employees in customer service area has enough knowledge to serve customers					
2.5.	Regular customer satisfaction evaluation and measurement					
2.6.	Proper customer compliant handling					

3.	Inventory Planning Performance Parameters	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
3.1.	The inventory model used to determine the quantity ordered is based on real demand analysis					
3.2.	The inventory model used target to minimize overall total inventory costs like holding, ordering, and stock out					
3.3.	The supply and demand analysis of inventory ordering has a positive impact on customer satisfaction					
3.4.	The current inventory management and planning system of the company assist the company's competitive strategy					
3.5.	Applying warehouse safety standards					
3.6.	Periodic inventory counting					
3.7.	Inventory management system keeps cost at a minimum					
3.8.	Automated inventory recording					
4.	Warehouse Management Performance Parameters	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
4.1.	The design of the warehouse is easy to access items, free from damage of items and convenient to load and unload					
4.2.	The design of the warehouse system is properly done to improve customer service and eliminate errors in warehouse operation					
4.3.	Warehouse operators are skilled to use computer and other technologies to perform warehouse activities					
4.4.	Applying warehouse safety standards					
4.5.	Planning and optimizing warehouse layout					
5.	Order processing management parameters	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
5.1.	Electronic order processing is applicable					
5.2.	There is delivery of right quality of products at first order					
5.3.	Orders are processed on time					
5.4.	There is a use of order processing system					
5.5.	Achieves timely delivery					
5.6.	Ensures internal satisfaction					

5.7.	Ensures zero double payments					
5.8.	uses order tracking systems					
5.9.	Achieves minimum order processing costs					
6.	Information flow management Parameters	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
6.1.	There is Smooth information flow to all logistics functions					
6.2.	There is a Practice of internal information sharing					
6.3.	The firm Invested on information communication systems					
6.4.	The firm Achieves accurate demand forecasting					
6.5.	The firm Achieves timely respond to customer references					
6.6.	The firm Achieves optimal inventory					
6.7.	The firm Achieves smooth flow of materials and products					
6.8.	The firm Use electronic order processing					
6.9.	Use electronic customer feedback					

PART THREE

ORGANIZATIONAL PERFORMANCE

The following questions are about organizational performance. Please indicate the magnitude of your agreement/disagreement by putting ‘√’ mark on the number that best describes your view.

NO	7. Organizational performance	Strongly Disagree (1)	Disagree (2)	Neither Agree nor Disagree (3)	Agree (4)	Strongly Agree (5)
1.1.	Services offered in the authority are good					
1.2.	Decision making in the authority is efficient					
1.3.	There has been an overall reduction in costs incurred in the authority					
1.4.	There is improved levels of professionalism in the authority					
1.5.	There is real time delivery of goods and services in the authority					
1.6.	There is avoidance of product reject/return					

Do you believe efficient logistics & supply management contributes to business growth?

Yes

No

If your answer is Yes/No explain it why

Please add any additional comments here.. _____

Thank you very much for filling the questionnaire!!!!