FACTORS AFFECTING LOGISTICS PERFORMANCE EMPHASIS ON TRANSPORT FUNCTION: A STUDY ON EAST AFRICA BOTTLING S.C. JIMMA BRANCH

A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF JIMMA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE IN MASTERS OF LOGISTICS AND TRANSPORT MANAGEMENT

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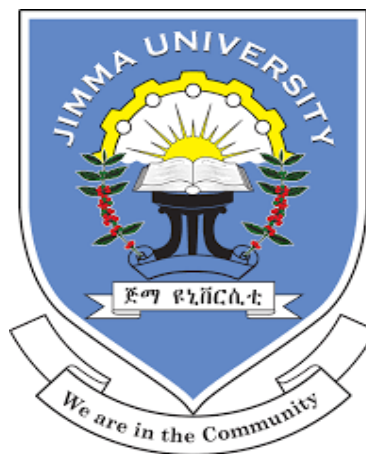
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We, the undersigned, members of the Board of Examiners of the final open defense by Zeynu Mohammed have read and evaluated his/her thesis entitled **"A Study on Factors Affecting Logistics Performance Emphasis on Transport Function a study on East Africa bottling S.C. Jimma branch"** examined. Therefore, this is to certify that the thesis has been accepted in partial fulfillment of the requirements for the degree of Masters of Business administration in logistics and transport management.

Approved by:

Name of Main Advisor   Signature   Date

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I

DECLARATION

I hereby declare that this thesis entitled ''**Factors Affecting Logistics Performance Emphasis on Transport Function: A Study on East Africa Bottling S.C. Jimma Branch''** has been Carried out by me under the guidance and supervision of Mr. Mesfin Mekonnin (PhD Scholar) and **Co-Adviser** Mr. Abera Jaleta. The thesis is original and has not been submitted for the award of degree of diploma any University or Institution.

Researcher's Name   **Signature**   **Date**

ZEYNU MOHAMMED   _____   _____

II

CERTIFICATE

*This is to certify that the thesis entitled ''**Factors Affecting Logistics Performance Emphasis on Transport Function: A Study on East Africa Bottling S.C. Jimma Branch''** Submitted to Jimma University for the award of the Degree of Master of Logistics And Transport Management (MA) and is a record of Valuable research work carried out by Mr. Zeynu Mohammed, under our guidance and supervision.*

Therefore we hereby declare that no part of this thesis has been submitted to any other university or institutions for the award of any degree of diploma.

Main Adviser's Name	*Signature*	*Date*
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ACRONYMS OR ABRIVATIONS

ANOVA-Analysis of Variance

BTRE- Bureau of Transport and Regional Economics

DV-Dependent Variable

EABSC -East Africa Bottling Share Company

IV-Independent Variable

LTL-Less than truck load

SCM- Supply Chain Management

SPSS- Statistical Packages for Social Science

TL – Truck load

TPLs- Third Party Logistics

VIF -Variance Inflation Factor

ABSTRACT

The main objective of this study was to examine the factors affecting logistics performance emphasis on transport function in a case of East Africa Bottling Share Company Jimma branch focusing on factors affecting the logistics performance and dimensions of transport function (Speed/Responsiveness and connectivity). The data were collected from 51 employees of the East Africa Bottling Share Company Jimma Branch including transportation, logistics, warehouse and distribution including officials. The type of data were collected includes both primary and secondary type of data, descriptive research design was used for this study and the data were collected with the help of closed ended and open-ended questionnaire. As per the result weakness observed in areas of flexibility, cost efficiency, improved number of orders shipped on time and timely reply to special enquiry were identified. The relationships proposed in the framework were tested using Pearson's correlation, and the causal relations were analyzed using regression analysis and Statistical Packages for Social Science (SPSS Version 20). From the result of the analysis it is concluded that there was strong relationship between factors affecting logistics performance emphasis on transport function (Speed/Responsiveness and connectivity) of East Africa Bottling S.C. Jimma branch. Hence, it is to the benefit of the company to give due emphasis on dimensions of transport function (Speed/Responsiveness and connectivity) to improving logistics performance.

Key words: Logistics Performance, Transport Function

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CHAPTER ONE

1. INTRODUCTION

This chapter addresses the introductory part of the paper. It basically includes a background of the study, Company profile, statement of the problem, objectives of the study, significance of the study, Delimitation of the study, Limitation of the Study and Organization of the Paper.

1.1. Background of the Study

Global competition is increasing tremendously and the business entities cannot be survived, if they have no the ability to adapt the environmental constant changes. More options were being provided to the consumers in buyers' market; any of organizations must have the strategies to manage well the cost, quality, quantity and timeliness to fulfil customers' requirement through excellent logistics management. (Lamber, Stock, & Ellram, 1998).

Logistics initially applied to military operations; its most significant impact is being felt through the functions of production, distribution and consumption (Slack, 2002)
According to Hesse (2016), the origin of the modern logistics goes back to the emergence of the capitalist economy, the development of specific modes of industrial production and the unfolding of a particular division of labour. To a certain extent, circulation allowed for the transition from use value to exchange value, and thus made possible the large-scale capitalization of commodities. Mass distribution and marketing became incorporated in the practice of modern management (Chandler, 1977) and have been significant factors of wealth generation. The organization and technology of modern distribution are embedded in a changing macro and microeconomic framework. This mass distribution and marketing activity of commodities is logistics function.

Logistics management is an integrating function which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions, including marketing, sales, manufacturing, finance, and information technology (Morris and Imrie, 2012). According to the Council of Logistics Management (1991), logistics is part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services, and relevant information between the point of origin and the point of consumption in order to meet customers' requirements.

Logistics encompasses entire process of materials and products moving into, within and out of firm. Inbound logistics covers the movement of material to the firm. Materials management describes the movement of materials and components within a firm. Physical distribution refers to the movement of goods from point of production to end customers. The movement of goods from the supplier to the manufacturing plant, within the compound of the plant, from the warehouse to the factory, from the factory to the warehouse, from the warehouse to the distributers and final customers all requires the service of the transportation unit at each and every of the activities involved. The role of transportation is unquestionable especially in companies like coca cola, where there exists a great deal of reverse logistics and day to day supply of finished goods to customers. Transportation plays a vital role in moving raw materials, finished goods, utilities and the manpower involved in all those activities. (Srinavas, 2005)

Logistics system can be affected by many factors. From those factors that can be affect the well-being of logistics performance; the transportation system is a lion share contribution. The deficiency of professional manpower, raw materials, high transportation cost also affects the company's benefits (Coyl *et al.,* 2010)

The purpose or function of transportation is to serve as a connecting link between the spatially separated units within a firm's own organization (such as between plants and warehouses) and between units of the firm and units of other firms and individuals (such as suppliers and customers). Good transportation has the effect of holding to a minimum the time and cost involved in the spatial relationships of the firm. In general, transportation is the base of efficiency and economy in business logistics and expands other functions of logistics system. (Coyl *et al*., 2010)

The effectiveness of the transportation service has an impact in the movement of raw materials, finished goods, utilities, ware house management, on distribution outlets also on production performance. Without well-developed transportation systems, logistics could not bring its advantages into full play. A good transport system in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality. The improvement of transportation systems needs the effort from both public and private sectors. A well-operated logistics system could increase both the competitiveness of the government and enterprises (Tracy, 2004).

Transportation plays different role in logistics as the physical link connecting the firm to its suppliers and customers, as a nodes and links scenario, transportation is the link between fixed facilities (nodes). It also adds value to the product by providing time, place & quantity utility for the firm goods. When firms engage in global competition transportation costs are becoming even more significant. Out of which, outbound transportation was clearly the largest component of total physical distribution costs. In general, transportation is the base of efficiency and economy in business logistics and expands other functions of logistics system. (Coyl*et al*.,2010). In line with facts, this study focused to investigate on factors affecting logistics performance emphasis on transport function in a case of East Africa Bottling Share Company Jimma branch.

1.2. Background of the Organization

The Coca-Cola Company was born On May 8, 1886 in Atlanta, Georgia and at present the beverages consumed in more than 200 countries with over 1.6 billion servings each day. Coca-Cola was first bottled in Ethiopian's capital Addis Ababa in 1959 by the Ethiopian Bottling Share Company and later opened a second branch in Dire Dawa in 1965.
The two plants were nationalized in 1975 and ran as public companies until 1996 when they were bought by the Ethiopian Entrepreneurs. Just prior to this, in 1995, Coca-Cola Sabco bought shares in the business and in 1999 signed a joint venture agreement with the plants and in 2001 increased its share to 61% and the company changed its name to the East Africa Bottling Share Company (Nelson, Ishikawa &Geaneotes,2009). The company has the mission to continually increase profitability, sustainable unit case sales of its

products by satisfying new and existing consumers through excellent market execution and utilizing a wide range of distribution methods.

The company was opened its main distribution branch in Jimma town since 2001 E.C. This main distributor is responsible for managing, storing and handling of products and distributing the company's product to the ultimate retailers and customers. Jimma main distribution branch covers vast area of the country, Bedele, Elu Ababor and South Nations and Nationalities, (Bonga, Mizan, Tepi) and so on. The Coca-Cola companies produces different kinds of soft drink like Coca-Cola, Sprite, Fanta, Fanta Ananas, Fanta Tonic and Crystal Water. Concerning transportation this companies were using its own transport facilities to transport and distribute the final product to local customers.

1.3. Statement of the Problem

The ultimate objective of logistics is to enhance total value offered to customers, be they are other companies in the chain or the final consumer. Among the components of business logistics, transportation is the most important economic activity. It also accounts for one third to two third of the expenses of logistics costs. A transportation system that provides a reliable service level reduces supply chain uncertainty and the amount of inventory required throughout the chain. Rapid and effective response in moving materials and information within a short time period are crucial and transportation is a key element in making this happen. (Hummels, 2001)

Effective logistics operations can lead to more efficient operations that increase the firm competitiveness and increase customer loyalty where distances are frequently greater and many environmental barriers increase the complexity and uncertainty of worldwide operations (Nagel *et al.*, 1994; Goh *et al.*,1998)

Transportation is not an economic function that stands apart from others. Instead, it is a connective role among the several steps that result in the conversion of resources into useful goods in the name of the ultimate consumer. It is the planning of all these functions

and sub-functions into a system of goods movement in order to minimize cost maximize service to the customers that constitutes the concept of business logistics. The system, once put in place, must be effectively managed. (Fair, 1981)

Liu & Yen, (2010); Luo, (2011); and Yeung& Tung (2012) studied a Hong Kong logistics service provider and found that a successful implementation of a quality management system is the key to survival and long-term prosperity for a logistics company.

The study conducted by Goh and Pinaikul (2002) on logistics practices and development in Thailand found that most of the logistics costs incurred are on transportation and warehousing. They also observed that manufacturing firms that have instituted logistics departments are making an effort in upgrading their logistics systems and are more pervasive in using technology to manage logistics as compared to firms without formalized logistics departments.

Vasco, S. and Andrew, P (2012) in their study on manufacturing sector logistics practices of South Africa found that there is a high transportation cost, unexpected road congestions, and loading and unloading delays. Related to this there is much stronger focus on responsiveness at customer side and road freight transport network made transport cost less important in the whole supply chain. The study also indicated that most of these manufacturing firms used 3PLs, and these 3PLs have 100 percent vehicle ownership and practice flexible transportation plan. For the case of customer service sometimes there are urgent customer orders and demand forecast inaccuracies. Concerning delivery tight and rigid delivery windows are observed. Lack of communication between customer and carrier, and lack of understanding between sales and logistics with in carriers are also sometimes observed.

The study by Bemnet (2004) on Ethiopian transport system explored that transport costs are very high in Ethiopia. For instance, in garment processing trade, overall transport cost cover 28 percent of the total value added. This is a high proportion compared to the world average and Africa's average which are 6.1 and between 15 and 20 percent respectively. According to the World Bank Report (1991) efficiently organized flows of goods and

information are only possible if there is a well-developed transport and communication infrastructure.

The report also described that in sub-Saharan African countries, this infrastructure is poorly managed and maintained. Until recently about half of the region's paved roads and 70 percent of its unpaved roads were only in a fair to poor condition and required substantial repair.

In Ethiopia, a study conducted by Fekadu (2013) on logistics practices of Ethiopia indicated that Ethiopian logistics system is characterized by poor logistics practices and lack of coordination of goods transport, low level of development of logistics infrastructure and inadequate fleets of freight vehicles in number and age, damage and quality deterioration of goods while handling, transporting and storage. However, his study mainly focused on the transportation and customer service practices using general attributes of infrastructure, performance, information system, human resources, business and political environments.

As per the preliminary interview conducted with the logistics and transport personnel of the East Africa Bottling Share Company Jimma branch, there exist transportation factors related problems in the day to day operation of the company from providing excellent service by disturbing in the logistics function. The problems were related with dimensions of transport function (Speed/Responsiveness and connectivity) as well. The Speed/Responsiveness factor is related with poor performance of some of the employees in logistics area as a result of customer orders on time, fast and Speed in delivery of services. The connectivity factors were lack of flexibility, efficiency of cost, overall quality of our transportation, providing dependable delivery and better tracing and tracking practice were the problems extracted from the interview. This preliminary interview gives a clue that a need for depth investigation regarding this issue. Therefore, this study intended to conduct an investigation on factors affecting logistics performance focusing on transportation function in East Africa Bottling Share Company Jimma branch.

1.4. Basic Research Questions

In line with the statement of the problem, the study was addressed the following:

1. What logistics functions is practicing in East Africa Bottling Share Company

   Jimma Branch?

2. What is factors affecting the logistics performance of the company?

3. How the transport function is performing in the company?

4. Which dimensions of transport function is contributing more to logistics performance of the company?

5. What are the functions played by dimensions transportation towards logistics performance?

1.5.   Objectives of the Study

1.5.1.   General Objective

The General objective of the study was to examine factors affecting logistics performance emphasis on transport function in the case of East Africa Bottling Share Company, Jimma branch.

1.5.2.   Specific Objectives

1. To assess logistics functions that is practicing in East Africa Bottling Share Company Jimma Branch.

2. To identify factors that affecting the logistics performance of the company.

3. To show transport function that are performing in the company.

4. To indicate dimensions of transport function that are contributing more to logistics performance of the company

5. To identify functions played by transportation towards logistics performance

1.6. Significance of the Study

This research will be enabling the East Africa Bottling share company Jimma Branch to know its problem on logistics performance by the transport function and take correction measures. In this competitive world and growing market demand, up grading every aspect of operation is must to win the market. In companies like East Africa Bottling share company, where transportation effectiveness have a great deal of impact on distribution as well as customer satisfaction, it is essential to identify areas of operation like transportation as many activity are related with transport function in order to identify the effect of transport function have on logistics performance of the company in order to give some solution to problems faced by the company. The study will also benefit the customers of the company as the findings will indicate solutions for problems in the transportation section which in turn results in reduced cost and customer satisfaction by minimizing factors affecting logistics performance on transport functions especially in the area of speed/responsiveness and connecting factors. Distributers of product of the company will be also benefit from the improved transport service also affected by the transportation service. The study will also help as an indication for further area of research by incorporating other factors to the study in order to see transport function not only in logistics performance but also other operation.

The company will be benefited since the outcome of the study helps them to easily understand the gap on their factors affecting logistics performance and take corrective actions that will be enhance their capacity to compete with best companies. It will also help this company to identify, evaluate and monitor the key areas which will help them to maintain their pace and speed of their transportation.

Supply Chain Management side will be also benefit from this study. Through the activities will be undertaken to promote effective and efficient management of supply chains. Effective supply chain management has become a potentially valuable way of securing competitive advantage through enhancing Supply chain and improving

organizational performances since competition is no longer between organizations, but among supply chains. These include supplier partnership, physical movement of goods, meeting customer demands and information sharing throughout the supply chain.

The government policy makers will benefit also from the outcome since it will be assist them in examining the current policies towards the factors affecting logistics performance emphasis on transportation. The findings of this study will be also provide prospective investors with a realistic idea and informational base of what will be expect when operating in the company like East Africa Bottling S.C Jimma branch.

More specifically, these studies will be endeavours to limited within East Africa Bottling Share Company Jimma branch. This study, which will be undertaken in the area of the factors affecting logistics performance emphasis on transport function of East Africa Bottling share company Jimma branch, will be contribute by identifying factors affecting logistics performance and effective implementation of transport function management by East Africa Bottling share company Jimma branch,also underline the importance of sufficient and relevant information for planning and making successful decisions about factors affecting logistics performance emphasis on transport function. Additionally, this study will be serving as a point of starting for further research by academicians.

1.7.   Delimitation

Logistics and transport encompass vast areas of managerial practices. However, it is difficult and unmanageable to conduct the study in all areas in terms of time, finance, and research manageability. Therefore, the scope of this study was delimited to the factors affecting logistics performance emphasis on transport function in East Africa Bottling Share Company Jimma branch (Jimma town).

The subject scope of this study was delimited to the company's point of reference towards logistics functions, speed/responsiveness and connectivity of logistics performance emphasis on transport function.

The area of the study was also delimited to the case company i.e., East Africa Bottling Share Company Jimma branch. And with the help of closed ended questionnaire and open ended questionnaire were conducted from all employees who are working at East Africa Bottling Share Company Jimma Branch.

1.8.   Limitation of the Study

The limitation of the study was the accessibility to the required data as employees were too busy to provide the necessary information in filling the questionnaire and conducting interview within a planned schedule.

The study was carried out limited to one geographic location (Jimma town) the researcher couldn't get the overall information regarding the company at the country level. The method applied in gathering data was also cost and time consuming.

1.9.   Organization of the Paper

The research report was organized into five chapters. The first chapter focused on the general introduction, highlighting the issues of factors affecting logistics performance emphasis on transport function. Problem formulation and research questions also form part of this chapter followed by the scope of the research work. The second chapter presents the recently emerged knowledge products presented through extensive review of relevant literatures from different sources. The third chapter presented the research methodology used to gather and analyze the data. The fourth chapter is making an in-depth presentation and discuss of results of generated from this research. The last section of the report presents a summary, findings, conclusion and recommendations.

CHAPTER TWO

2.REVIEW OF RELATED LITERATURE

2.1. Introduction

This chapter will emphasize on the theoretical aspect of the study. It takes into consideration what various professionals have written on the topic in respect to the factors affecting logistics performance emphasis on transport function in East Africa Bottling Share Company Jimma Branch. The discussions will be based on what goes on in the transportation function and how those activities can affect the logistics performance.

2.2. Theoretical framework

In this study, logistics activities, the critical factors like transport function, factors affects logistics activities, were identified in order to support the upgrading of logistics activities of firms.

2.2.1. Overview of logistics
2.2.2. Definitions

Logistics can be defined in different ways. Even if the definition varies, the definitions all are almost the same. To see some of the definitions;

According to the Council of Logistics Management (1991) logistics is part of the supply chain process that plans, implements, and controls the efficient, effective forward and reverses flow and storage of goods, services, and related information between the point of origin and the point of consumption in order to meet customers requirements'.

On the other hand Johnson and Wood's definition (cited in Tilanus, 1997) uses five important key terms', which are logistics ,inbound logistics, materials management, physical distribution, and supply-chain management, to interpret. Logistics describes the entire process of materials and products moving into, through, and out of firm. Inbound logistics covers the movement of material received from suppliers. Materials management describes the movement of materials and components within a firm. Physical distribution refers to the movement of goods out ward from the end of the assembly line to the customer. Finally, supply-chain management is somewhat larger than logistics, and it links logistics more directly with the user's total communications network and with the firm's engineering staff.

Logistics is generally the detailed organization and implementation of a complex operation. In a general business sense, logistics is the management of the flow of things between the point of origin and the point of consumption in order to meet requirements of customers or corporations. The resources managed in logistics can include physical items, such as food, materials, animals, equipment and liquids, as well as abstract items, such as time and information. The logistics of physical items usually involves the integration of information flow, material handling, production, packaging, inventory, transportation, warehousing, and often security.

2.3.   Logistics management

Logistics management is widely accepted in every business organization, private or public, profit or non-profit organization. It is defined as part of the supply chain process that plan, implement and control the efficient, effective flow and storage of goods, services and related information from the point of origin to the point of consumption to meet customer requirements. To satisfy customer requirements, logistics aims to ensure the availability of the right product with the right quantity and the right condition, to the right place, at the right time for the right customer and at the right cost (Ballou, 1999). Particularly, logistics management is concerned with the efficient flow and storage of goods (raw materials, in process inventory and finished goods) from the point of origin to

the point of consumption. It starts with the initial shipment of raw materials and accessories from a supplier, products are then manufactured or processed and finally delivered to the end customer (Bowersox et al.,2002).

Logistics can be viewed as inbound and outbound logistics. Inbound logistics in the movement of materials from suppliers or vendors into production process or storage facilities while outbound logistics is the process related to the movement and storage of products from the end of the production line to the end user. Coyle and coauthors suggest that the manufacturing industry should focus on the activities both inbound logistics and outbound logistics. Inbound logistics systems can vary depending on the plant location in the supply chain, the nature of the product and the market situation in which the product is sold. Inbound logistics includes the activities of procurement or purchasing, inbound transportation, receiving, warehousing, material handling, inventory management and control, packaging and communication and information management. Outbound logistics consists of the finished goods inventory, order processing activities under the areas of order management, outbound transportation, customer services, demand management and the distribution of finished goods.

2.4.   Logistics Activities and Fields

A basic distinction in the nature of logistics activities is between inbound and outbound logistics.

2.4.1. Inbound Logistics

Inbound Logistics is one of the primary processes of logistics, concentrating on purchasing and arranging the inbound movement of materials, parts, and/or finished inventory from suppliers to manufacturing or assembly plants, warehouses, or retail stores (Tracy, 2004).

Inbound logistics is to transport, storage and delivery of goods/products coming into a company/organization.

Inbound logistics is an integral element of business operations for manufacturing companies/organization, involving the processes of receiving, storing and distributing raw materials for use in the production.

2.4.2. Outbound Logistics

Outbound Logistics is the process related to the storage and movement of the final product and the related information flows from the end of the production line to the end user (Tracy, 2004). Generally, the following are some of the activities of logistics:

A) Order processing - the Logistics activities start from the order processing which might be the work of the commercial department in an organization. The commercial department is the one who ensures that the payment terms and the delivery terms have been met and then processes the order from within the company. This is an important step in logistics activities because any mistake in this step (wrong entries of quantity, delivery address etc) can affect the whole logistics process. Basically, the commercial team accepts the order from the customer and places the order to the warehouse and the warehouse accepts the order and does it according to the order.

Order processing are sequential process involving: processing withdrawal list, picking (selective removal of items from loading units), sorting (assembling items based on destination), package formation (weighting, labeling and packing), and also includes order consolidation (gathering packages into loading units for transportation, control and bill of lading).

B) Materials handling - is the movement of goods within the warehouse. It involves handling the material in such a way that the warehouse is able to process orders efficiently. Although it may sound a mundane task, it is an important one and an ongoing activity in any warehouse.

Materials handling is the movement, protection, storage and control of materials and products throughout manufacturing, warehousing, distribution, consumption and disposals.

Materials handling can be used to create time and place utility through the handling, storage, and control of materials, as distinct from manufacturing, which creates form utilities by changing the form, shape and makeup of the products.

C) Warehousing - warehousing plays a huge role and is one of the important Logistics activities. The important point in warehousing is that the warehouse should be nearby to the dealer or the distributors' place and it should facilitate the easy delivery of goods. The location of warehouses also reduces the pressure on mother warehouse (large warehouses which stock most of the products). When there is a peak in demand or if there is a drop in production, these warehouses can take the pressure of deliveries and they can become interdependent to ensure delivery of goods/products to consumers.

Warehousing is key components of logistics management and how a company/organization manages the transportation and storage of their inventories. Warehousing is the act of storing goods/products that will be sold or distributed later.

D) Inventory control - Inventory management is one of the most important functions of logistics especially after the adoption of various production techniques such as Just in time manufacturing, lean manufacturing or other manufacturing processes where the cost of inventory management is brought down.
Inventory control, also known as stock control, involves regulating and maximizing the company's/organization's inventory. The objective of inventory control is to maximize profits with minimum inventory investment, without impacting customer satisfaction levels. Inventory control is also about knowing where all your stock is and ensuring everything is accounted for at any given time.

E) Transportation - now we come to one of the major logistics activities which are one of the most resources heavy and revenue heavy segment of logistics. Transportation

involves the physical delivery of goods from the company to the distributor or dealer and from the dealer to the end customer. Generally, companies/organizations are involved only till the point delivery happens to the distributor or the dealer. The distributor is then responsible for the delivery to the end customer. The better the warehousing and the inventory management of a company, the lower is the transportation cost for the company. Economies of scale play a major role in the cost-effectiveness of transportation.

Transport or transportation is the movement of humans, goods/products and animals from one place to another.

Transportation is defined as a particular movement of an organism or things from one point to another point by using different types of modes of transportation.

F) Packaging – the packaging refers to all those activities related to designing, evaluating and producing the container for the product. Packaging the product is a responsibility of the logistics team because otherwise the product will reach damaged to the end customer and this is a huge cost to the company.

Packaging also refers to the process of designing, evaluating, and producing packages. Packaging can be described as coordinated systems of preparing goods/products for warehousing, transport, sales, logistics and end use.

2.4.3. Logistics Activities

The factors that affect the logistics activities in each of the six areas, namely order processing, procurement, inventory management, production, packaging and transportation activities

Generally, logistics activities are activities relating to procurement, inventory management, material handling, packaging, transportation and order processing that supports their manufacturing system through supply chain. It includes a series of related activities from procurement at the beginning of operations to physical distribution at the

end. These logistics activities vary from firm to firm depending on a firm's particular organizational constitutes logistics and the importance of individual activities to its operations (Ballou, 1999).

2.4.4. Logistics fields

Given the services performed by logisticians, the main fields of logistics can be broken down into: Procurement logistics, Distribution logistics, disposal logistics, reverse logistics, green logistics, asset control logistics, emergency logistics (Humanitarian logistics), production logistics and business logistics.

2.5. Achieving Logistics Efficiency and Effectiveness Requires

- Improved efficiency of each mode of transport;
- Coordination and seamless interchange of different transport modes;
- Effective integration of all supply chain management functions (including demand management, supply management, manufacturing, storage, transport, distribution, and value-added services); and
- Enhanced collaboration among supply chain partners (e.g., suppliers, manufacturers, distributors, and end users).

2.6. Logistics Service Value

As (Swartz, 2010) stated in his article, there are different conceptualizations of the process by which logistics service creates value. The traditional conceptualizations are based on the creation of time and place utilities. (Mentzer *et al*., 1989) The often quoted Seven Rs‖ definition of logistics describe the attributes of a company's product offering that leads to value creation through logistics service. In other words, part of the value that a company creates for its customer is its ability to deliver the right product in the right amount at the right place at the right time for the right customer in the right condition at the right price (Shapiro and Heskett, 1985).

Factors that determine savings in material can be reduced to the following major groups: physical, technological, engineering and design, organizational and economic. The first group of factors - the material determines the choice of best materials, which would reduce their consumption, particularly to reduce the consumption of scarce materials and to reduce the amount of material costs in the cost of production. Using technology factors is the choice of materials saving options such processes, which reduce the waste, produced during the production. Completion of the analysis is to develop practical measures to improve the use of material resources, based on them to establish new, progressive norms, reflecting the advanced production experience and scientific and technological achievements, to be implemented in the upcoming planning period. (Makarenko, 2003)

More recent definitions of logistics service value focus on the relationship of logistics service to customer service, capabilities, and competitive advantage of a firm. Logistics service is an important component of customer service and helps a company maintain its current competitive position in the marketplace (Langley and Holcomb, 1992). When traditional attributes of logistics service are modified to create value-added services or are configured in unique bundles, they take the shape of logistics capabilities that can be a source of competitive advantage (Morash *et al*., 1996; Lynch *et al*., 2000). Thus, in their quest for new ways to establish a competitive edge, managers are recognizing that unique types of customer value can be created through logistics service (Langley and Holcomb, 1992).

Creating customer value and sustaining competitive advantage through the delivery of unique or value-added logistics services can be a challenging process because they involve changing the way logistics managers and organizations work. To do so, it is necessary to understand how logistics creates value. Fundamentally, logistics creates customer value through three generic ways: efficiency, effectiveness, and differentiation or relevancy (Langley and Holcomb, 1992). How logistics creates value. Fundamentally, logistics creates customer value through three generic ways: efficiency, effectiveness, and differentiation or relevancy (Langley and Holcomb, 1992).

2.7.   Transportation

Transportation is one of the most visible element of logistics operation it provides two services product movement and storage. It is the movement of people, animals and goods from one location to another. Modes of transport include air, rail, road, water, cable, pipe line and space. The field can be divided into infrastructure, vehicles and operations. Transport is important because it enables trade between persons, which is essential for the development of civilizations (Coyl *et al*., 2011).

As per (Coyl *et al.,* 2011) transportation service is very frequently important for the selection of a particular mode operating between two points. The dimensions of transportation service would include reliability, accessibility, and security. These factors are looked at in terms of their cost impact as well as the actual transportation cost itself in selecting a particular model.

Transport is part of the economic activity, which is associated with an increase in the degree of satisfaction of people and businesses by changing the geographical location of goods and people. Transport - means of satisfying needs through transportation of goods and passengers. Transportation - one of the key logistics functions associated with moving goods vehicle on a particular technology in the supply chain, consisting of logistics operations and functions, including forwarding, cargo handling, packaging, and transfer of ownership of the goods, risk insurance, customs procedures, and so on. From an economic point of view, transport is one of the defining elements of the production process. The production and use of goods, there are two limiting factors - the time factor and the spatial factor. (Sarkisov, 2001)

The development of an exchange or market economy, one in which goods are transferred from points of production to points of sale and consumption, depends upon the ability to move goods, that is, on the availability of transportation service. (Fair & Williams 1981, p. 22)

2.7.1.   Modes of Transportation

There are different modes of transportation. The common modes of transportation include Truck, Rail, Air, water, pipeline, multimodal, and package carriers.

Air- can transport both passengers and cargo. Have a fixed cost in infrastructure and equipment. Labor and fuel costs are largely trip related and independent of the number of passengers or amount of cargo carried on a flight.

Truck- have the advantage of door to door shipment and a short delivery time and it consists of two major shipments in the industry TL(Truck load) whereby charges for full truck independent of the quantity shipped and LTL(Less than truck load) in which charge is based on the quantity loaded and distance travelled

Rail-incurs a higher fixed cost in terms of rails, locomotives cars, and yards. It is convenient for large shipments over large distance.

Water- Is ideally suited for carrying very large loads at a lower cost.

Pipeline-used for transportation of crude petroleum, refined petroleum and natural gas products and requires significant initial fixed costs.

Multimodal- uses more than one mode of transport to move a shipment to its destination.

Package Carriers- carry small packages ranging from letters to shipments weighing about 150 pounds by using air, truck or rail to transport time critical smaller packages.

2.8.   Transportation and Logistics

Transport is a central ingredient in the time and spatial economic utility of products and services.

Multimodal transport, which combines the advantages of each mode, can be a particularly efficient and effective approach.

Logistics is a process of planning, implementing, and controlling the efficient flow of products, information, and funds to conform to the client's requirements. Transport is a core component of logistics, moving goods between different points in the supply chain. Logistics encompasses the storage of raw materials, work-in-process parts, and finished products, as well as a variety of value-added services.

2.9.   The Effects of Transportation on Logistics Activities

According to (Sreenivas and Sirinivas, 2001) transportation plays a connective role among the several steps that result in the conversion of resources into useful goods in the name of the ultimate consumer. It is the planning of all these functions and sub-functions into a system of goods movement in order to minimize cost maximize service to the customers that constitutes the concept of business logistics. The system, once put in place, must be effectively managed.

Traditionally these steps involved separate companies for production, storage, transportation, wholesaling, and retail sale, however basically, production/manufacturing plants, warehousing services, merchandising establishments are all about doing transportation. Production or manufacturing plants required the assembly of materials, components, and supplies, with or without storage, processing and material handling within the plant and plant inventory. Warehousing services between plants and marketing outlets involved separate transport. Merchandising establishments completed the chain with delivery to the consumers. The manufacturers limited themselves to the production of goods, leaving marketing and distribution to other firms. Warehousing and storage can be considered in terms of services for the production process and for product distribution. There have been major changes in the number and location of facilities with the closure of many single user warehouses and an expansion of consolidation facilities and distribution centers. These developments reflect factors such as better transport services and pressures to improve logistics performance.

2.9.1   The Role of Transportation in Service Quality

Sreenivas and Sirinivas (2001) the role that transportation plays in logistics system is not simple as carrying goods for the proprietors but complex. Its complexity could take effect only through highly quality management. By means of well-handled transport system, goods could be sent to the right place at right time in order to satisfy customers' demands.

It brings timely, regional and even formal efficacy, and also it builds a bridge between producers and consumers. Therefore, transportation is the base of efficiency and economy in business logistics and expands other functions of logistics system. In addition, a well transport system performing in logistics activities brings benefits not only to service quality but also the company competitiveness.

Fair & Williams (1981, pp. 22-23) Government plays an important role in development of national transport systems. Create a beneficial environment for enterprises through advanced infrastructures and good controls, and hence promote a countries' competitiveness.

2.10.   Empirical Findings

Michael Tracy (2004) his work entitled transportation effectiveness and manufacturing firm performance stated that rapid and effective response in moving materials and information within short period are crucial, and transportation is a key element in making this happens. Transportation system that provides a reliable service level reduces supply chain uncertainty and the amount of inventory required throughout the chain which in turn reduces holding cost which finally reduces the overall cost of ownership of a product and the certainty of supply chain will build customer loyalty.

On the other hand, poor transportation performance causes excessive freight cost and increased inventory holding cost and is a major obstacle in implementing and realizing gains from competitive manufacturing strategies such as lean production.
Empirical findings supports the notion that superior delivery service has a positive impact on a manufacturers performance in terms of sales growth, return on assets, market share gain and overall competitive position.

Sreevinas and srivani, (2001) stated that logistics system has a more and more important position in the society activities and transportation and logistics systems have interdependent relationships that logistics management needs transportation to perform its activities and meanwhile, a successful logistics system could help to improve traffic

environment and transportation development since transportation contributes the highest cost among the related elements in logistics systems, the improvement of transport efficiency could change the overall performance of a logistics system. It is also stated that transportation plays an important role in logistics system and its activities appear in various sections of logistics processes. Without the linking of transportation, a powerful logistics strategy cannot bring its capacity into full play. The review of transport systems provides a clearer notion on transport applications in logistics activities.

As more frequent and flourishing world commerce, the development of logistics affects the advancement of economy more and more. Ruijgrok (Brewer *et. al.,* 2001) stated that 'when the economy is growing, both production and consumption will grow, hence leading to an increase in the demand for transport, and vice versa'. Well-managed logistics system improves efficiency and benefits of business while decreasing logistics costs increases profits of products. In order to reduce the cost of logistics, good management of transportation is the key issue due to that it occupies a big part in the logistics activities.

It is also stated that transportation is fast becoming a key factor in determining the difference between profit and loss. It is the essential link between the extraction of natural resources; the fabrication of industrial, commercial, and consumer products; and the final distribution of goods to wholesalers, retailers, and end users.

In all of the empirical findings problems that hinders transportation from playing its function is not mentioned. Therefore the findings of this study might will give explanation on the factors affecting logistics performance emphasis on transport function in the case of East Africa Bottling Share Company Jimma Branch along with the solutions that will be recommended.

2.11. Conceptual frame work

From the above literatures gathered, the following research framework can be drawn.

Independent Variable   **Dependent Variable**

Speed/responsiveness

Logistics Performance

Connectivity
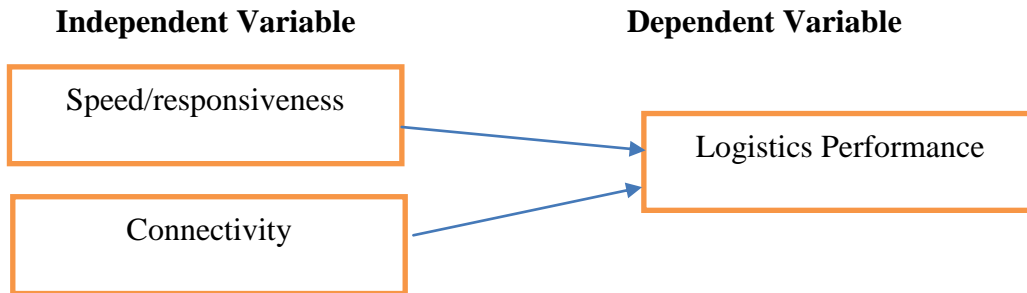
Figure 1 conceptual framework

Source: Self depicted based on literature review.

The responsiveness function of transportation is the speed at which a transport provides products to the customer. The speed of the ability of transport to respond to customers' requirements in ever-shorter time-frames has become critical.

The connecting function of transportation is that the flow of inputs to the company (the inbound logistics), materials movement within the company and the distribution of products to customer (the outbound logistics).

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CHAPTER THREE

3. Research Design and Methodology

3.1.   Introduction

Research methodology provides a means to systematically solve a research problem. This chapter explains the methodological approach adopted when conducting the research. This includes the research design; population and sampling technique, tool of data collection and method of data analysis were briefly explained

3.1.1   Research Design

Descriptive research design was used for this study. With such a study, information was obtained to meet the underlying purposes and objectives of the study.

Descriptive research design was useful in investigating the existing relationships among the variables that was captured in this study. According to Cooper& Emory (1995), a survey is feasible when the population is small and variable hence the researcher was able to cover all the elements of the population. Hence the survey was considered to be more efficient and economical.

The rationale for combining both quantitative and qualitative data is to better understand a research problem by combining both numeric values from quantitative research and the details of qualitative research in order to neutralize limitations of applying any of a single approach. Hence, the convenient research design considered suitable for this study was descriptive research.

3.1.2. Source and type of data

The type of data collected includes both primary and secondary type of data. The instrument includes for the primary data: questionnaire, open and closed ended questionnaire are the main one while for the secondary data, review of different manuals, reports and journal with regard to the factors affecting logistics performance emphasis on

transport function of an East Africa Bottling Share Company Jimma branch was studied in more detail.

The primary data was collected from all employees of an East Africa Bottling Share Company Jimma branch.

3.2.   Sampling design

3.2.1. Study area and target population

The study was conducted on factors affecting logistics performance emphasis on transport function in a case of East Africa Bottling Share Company Jimma branch. The target populations are all employees of the East Africa Bottling Share Company Jimma Branch including transportation, logistics, warehouse and distribution including officials.

3.2.2. Sample size and sampling techniques

The population of the study was encompasses all employees of the East Africa Bottling Share Company Jimma branch including transportation, logistics, warehouse and distribution including officials. The total populations are 54 (Male 48 Female 6). Census was used. The questionnaire was distributed to all employees. Because the data that was gathered from those people, it was helpful to get firsthand information about factors affecting logistics performance emphasis on transport function of East Africa Bottling Share Company Jimma branch.

Because the total population was finite and small in number, the study was cover all the total population of the study and sampling technique is not applied.

3.3. Methods of Data Collection, Design and Administration

3.3.1. Methods of Data Collection

The data was collected with the help of questionnaire and open ended questionnaire were conducted from all employees who are working at East Africa Bottling Share Company Jimma branch.

3.3.2. Questionnaire design

The questionnaire that was going to ask is one which was help directly to achieve the research objectives, provides complete and accurate information; it was easy for respondents to complete, it was designed as to make sound analysis and interpretation possible.

3.3.3. Methods of Administration/ Quality Criteria

Concerning methods of administration, paper-and-pencil administration were used to gather the information. This type was served as primary methods for such kind of assessment. Paper-and-pencil remains a widely used methods of administration, with its primary advantage being cost-effectiveness in a situations in which face few mailing and follow-up costs.

3.3.3.1. Content validity

As it known, Content validity refers to the extent to which the items on a test are fairly representative of the entire domain the test seeks to measure. So, the items on a test were fairly representative for all domains the test seeks to measure.

3.3.3.2. Construct validity

Construct validity is a process of that you work through, involving a number of procedures to assess the validity of the measurement procedure that was in the dissertation to measure a given construct. So, it was try to test measure the concept that it's intended to measure.

3.3.3.3. Pilot test

A small scale preliminary study conducted (by taking five employees) in order to evaluate feasibility, duration, adverse events, and improve upon the study design.

As per the interview conducted with logistic sub unit head, transport heads, warehouse keepers the role that transportation plays is very important. Almost every activity in logistics operation is dependent up on transportation.

3.4. Method of Data Analysis

The paper employed regression analysis method since it used to capture a cause and result relationship model. That means well-organized logistics system will positively contribute to transport function. Those factors that affect logistics system were organized and calculate their regression on logistics performance and transport function as well. In order to see logistics practice of the company, descriptive statistics was employed. Also, inferential analysis such as: correlation and regression analysis were used to measure the degree of association and magnitude to be held in between independent and dependent variables. In additions to the above mentioned analysis method, linear regression was used and also Statistical Package for Social Sciences (SPSS Version, 20) software was used to analyze the data from the questionnaires.

3.5.   Validity and Reliability

According to (Broman and Bell, 2007), reliability analysis was concerned with the internal consistency of the research instrument. As multiple items in all constructs was used, the internal consistency/reliabilities of Logistics functions, Factors that affecting the logistics function , Transportation function, Dimension of Transportation function and Challenges of transportation activities were assessed with Cronbach's Alpha and the reliability values for all constructs are confirmed as greater than 0.7, which are considered acceptable (Nunnally, 1978). The following table shows the summary of reliabilities of all constructs.

Table 1: Reliability test

Measurement	Number of items	Cronbach's alpha
Speed/Responsiveness	5	.702
Connectivity	7	.774
Logistics Performance indicators	6	.795
Reliability of items	18	.757

Source: SPSS Version, 2020

Table1 indicated that the reliability of 18 items that are Factors Affecting Logistics Performance Emphasis on Transport Function was tested by using Cronbach's alpha. According to Hair *et al*. (2005), the reliability coefficient for which more than or equal to 70 % (A>0.7) is acceptable.

Therefore, based up on Cronbach's alpha value the reliability of the questions was evaluated and the result was used to test the reliability of the questions related with Factors Affecting Logistics Performance Emphasis on Transport Function. Hence, the reliability coefficient of the above items is 0.7 or Reliability of all items used under this study is 75.7% and alpha reliability of the variables ranges between 0.702-0.795. Therefore, this indicates that the items used in this study were reliable and understandable to the respondents.

3.6.   Ethical consideration

The study was done by respecting the respondent's dignity and maintaining their privacy. It values objective and researcher establish a strong rapport with the participants on research rapport formation under taken through clarification of the purpose of the study telling them that provision of the information were totally depending on their willingness, guarantying every response which came from them will be highly respected and by telling them no need of writing their names. This strong rapport helped the researcher to get the consent and willingness of the participants, which was very crucial to get the necessary and reliable information data which in turn highly contributed the validity of the research and also the purpose of these study were explained to the respondents before data collection and provisions of the questionnaire, focus group investigation, close ended questionnaire and open ended questionnaire were taken after insuring their willingness to give their responses

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

4.1. Introduction

As mentioned in the third chapter the next step after data collection were the analysis and interpretation of data in order to come up with meaning full explanations about the research problem and recommendations to solve the problems. The objective of this thesis was to assess the factors affecting logistics performance emphasis on transport function: A study on East Africa Bottling S.C. Jimma branch.

Data was the main resource which enables researchers to investigate the problems and reach in conclusions and recommendations. In this research primary and secondary source of data were used.

An open questionnaire and close ended questionnaire were used to obtain data from primary sources. Different proclamations, reports, standards, regulations, researches, journals and related literatures were the secondary sources as revised on the literature review part.

A questionnaire was distributed to 54 (Male=48 and female=6) employees of the company who were working in logistics, warehouse, transportation and head of departments like logistics, transportation, warehousing and distribution including officials to achieve the research objectives and answer the research questions.

Hence, out of 54 questionnaires, 51 respondents (Male=45 and Female=6) were filled and returned questionnaire, which demonstrates 94.44% respondents. Furthermore, in-depth information through primary data was gathered from top management, senior members of staff at East Africa Bottling S.C. Jimma Branch. By using Statistical Package for Social Science (SPSS) Soft ware frequency descriptive statistics analysis was made to come across the findings of the research questions.

4.2. General Information

As per indicated in Table 1 below demographic results of the respondents, 45 (88.24%) Male and 6 (11.76%) were female. The Marital Status showed that Married 34 (66.67%) and Unmarried were 17 (33.33%).

The educational background of the respondents showed that 15 (29.41%) of the respondents were 10 complete, 8 (15.69%) were 12 complete, a college diploma were 16(31.37%) and a degree BA/BSC were 12(23.53%). Overall in assessing the human capital of an organization, educational background of the respondents indicated more of the employee had a diploma. According to the response, the respondents provide relevant and reliable information needed for the study and they are fit in line with the response of the questionnaire.

With regard to Experience working in the company, respondents who had an experience from 1-5 years were 15 (29.41%), from 6-10 years 18 (35.29%) , from 11-15 years were 8(15.69%) and respondents who had an experience of greater than 15 years were 10 (19.61%). This shows the company has very young and energetic employees who can contribute in the company success and It is possible to state that majority of the respondents were with the company for a long period of time, which means they know the company very well from which it is possible to get the required information for the study. This implies the fact that most of the respondents have sufficient knowledge and experience about their firm and the subject matter of the study.

When we see the income of the respondents per month, from 1000 - 2,000 birr were 14 (27.46%), from 2001-5000 birr were 21 (41.18%), from 5001-8000 birr 12 (23.52%) and those respondents their monthly income greater than 8,000 birr were 4 (7.84%). Hence, more of the respondent's income per month was 2001-5000 birr.

Table 2: Profile of Respondents

	Frequencies	Percent
Sex		
Male	45	88.24
Female	6	11.76
Total	**51**	**100**
Marital Status		
Married	34	66.67
Unmarried	17	33.33
Divorced	-	-
Total	**51**	**100**
Education		
10complete	15	29.41
12complete	8	15.69
Diploma	16	31.37
Degree	12	23.53
Others	-	
Total	**51**	**100**
Experience		
1-5	15	29.41
6-10	18	35.29
11-15	8	15.69
>15	10	19.61
Total	**51**	**100.0**
Income		
100-2000	14	27.46
2001-5000	21	41.18
5001-8000	12	23.52
>8000	4	7.84
Total	**51**	**100**

Source: Own survey, 2020

4.3. Descriptive Statistics

Table 3: Dimensions of transport function (Speed/responsiveness)

No	Question items	N	Mean	Std Dev.
1	There is a fast service delivery by the company	51	1.61	.255
2	The company deliver customer orders on time	51	2.17	.344
3	The company creating time, place and possession utility	51	2.59	.411
4	Our transportation service delivers products to the right place needed	51	4.11	.651
5	The company transportation is efficient in moving products	51	4.43	.693

Source: Survey, 2020

In table 3, it is sought to see what transportation practice of the company looks like in order to do that , the respondents were requested to respond to the statements on a 5 point Likert scale and indicate the extent they agree with the statements that is: 5-Strongly agree, 4-Agree, 3-Nutral, 2-Disagree, 1-Strongly disagree. A mean (M) score of 0-1.5 means that the respondents strongly disagreed, between 1.51 to 2.50 means they disagreed, 2.51 to 3.50 means the respondents were neutral, 3.51-4.50 means they agreed, and a mean above 4.51 means the respondents strongly agreed.

As per the response from respondents, the result shows that Dimensions of transport function (Speed/responsiveness) of the company like transportation provides logistics efficiency, The company transportation is efficient in moving products and transportation service delivers products to the right place needed have a mean square value of 4.43 (Std. Dev. .693) and 4.11 (Std. Dev. .652) respectively showing that transportation is providing logistics efficiency by playing the roles of Speed/responsiveness of transport function.

The company creating time, place and possession utility with a mean square value of 2.59 (Std. Dev. .411). This shows that the respondents responded neutral for the company creating time, place and possession utility

Whereas the respondents disagreed on the company deliver customer orders on time, fast service delivery by the company with a mean square value of 2.17(Std. Dev. .344), and 1.61 (Std. Dev. .255) respectively.

Table 4: Dimensions of transport function (Connectivity)

No	Question items	N	Mean	Std Dev.
1	The company provide dependable delivery	51	2.21	.951
2	Transportation service of our company is flexible	51	2.25	.98
3	Our transportation service is cost efficient	51	2.37	.94
4	The overall quality of our transportation is very high	51	2.39	.818
5	There a better tracing and tracking practice	51	2.43	.971
6	The company outlets are well connected	51	2.63	1.11
7	The company reach economies of scale and economies of distance to reduce cost	51	4.05	.605

Source: Survey, 2020

As per the response from respondents, the result shows that Dimensions of transport function (Connectivity) of the company like transportation provides logistics efficiency, The company transportation is efficient in reaching economies of scale and economies of distance to reduce cost with a mean square value of 4.05(Std. Dev. .605). And also become neutral in company's outlets connected with a mean square value of 2.63(Std. Dev 1.11).

Unlike the above five practices, Transportation service flexible, efficiency of cost, overall quality of our transportation, providing dependable delivery and better tracing and tracking practice in the company with mean value of 2.25(Std. Dev. .98), 2.37(Std. Dev. .94), 2.39(Std. Dev. .818), 2.21(Std. Dev. .951) and 2.43(Std. Dev. .971) respectively, the respondents disagreed with the Connectivity of the company. This shows that, the company lacks in the above five dimensions of transport function (Connectivity).

Table 5: logistics performance indicators

No	Question items	N	Mean	Std Dev.
1	Improved number of orders shipped on time	51	2.18	.871
2	Customers complains are decreased	51	2.33	.931
3	The service delivery is improved	51	2.52	1.093
4	Lead times improved	51	3.41	1.363
5	Branches sales improved	51	4.53	1.811
6	Damage free deliveries	51	4.57	1.823

Source: Survey, 2020

As per the response from respondents in table 4, the result shows that damage free deliveries and branches sales improved was strongly agreed with mean value of 4.57(Std. Dev. 1.823) and 4.53(Std. Dev. 1.811) respectively. This shows that, the company was good in damage free deliveries and branches sales improved. By the other side, lead times and service delivery is improved were responded neutral with mean value of

3.41(Std. Dev. 1.363)   and 2.52 (Std. Dev. 1.093) respectively. Whereas, number of orders shipped on time and customers complains are decreased were disagreed with mean value of 2.18 (Std. Dev .871) and 2.33(Std. Dev .931) respectively. This shows that the company's should give especial attention on number of orders shipped on time and customers complain.

4.4. Inferential Statistics for Factors Affecting Logistics Performance And Transport Function

4.4.1. Correlation Analysis

This section includes the analysis of data related to the relationship between Factors Affecting Logistics Performance and Transport Function, correlation analysis is employed. Transport function is taken as the independent variable and logistics Performance was considered as the dependent variable.

Correlations are the measure of the linear relationship between two variables. The Pearson product moment correlation coefficient is a statistic that indicates the degree to which two variables are related to one another. The sign of correlation coefficient (+ or -) indicates the direction of the relationship between -1 and +1.

A correlation coefficient has a value ranging from -1 to 1. Values that are closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated whereas values closer to 0 indicates that there is little or no linear relationship.

Variables may be positively or negatively correlated. A positive correlation indicates a direct and positive relationship between two variables. A negative correlation, on the other hand, indicates an inverse, negative relationship between two variables (Leary, 2004). Measuring the strength and the direction of a linear relationship that occurred between variables is, therefore, important for further statistical significance.

In this section, correlation analysis conducted in the light of each research Objectives and questions developed. The relationship between factors affecting logistics performance and transport function was investigated using correlation analysis. This provides correlation coefficients which indicate the strength and direction of relationship. The p-value also indicates the probability of this relationship's significance.

Table 6: Correlation Analysis between factors affecting logistics performance and transport functions (dimensions)

	Efficiency in moving products	Creating time, place and possession utility	Deliver customer orders on time	Delivery to the right place	Fast service delivery by the company	Speed/responsi veness	Connectivity
Efficiency in moving products Pearson Correlation	1	.307	.139	.095	.004	.161	.223
Sig. (2-tailed)		.000	.050	.120	.463	.125	.25
N	51	51	51	51	51	51	51
Creating time, place and possession utility Pearson Correlation	.307	1	.561	.490	.379	.701	.746
Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
N	51	51	51	51	51	51	51
Deliver customer orders on time Pearson Correlation	.139	.561	1	.676	.513	.825	.808
Sig. (2-tailed)	.050	.000		.000	.000	.000	.000
N	51	51	51	51	51	51	51
Delivery to the right place Pearson Correlation	.095	.490	.676	1	.580	.710	.599
Sig. (2-tailed)	.120	.000	.000		.000	.000	000
N	51	51	51	51	51	51	51
Fast service delivery by the company Pearson Correlation	.004	.379	.513	.580	1	.566	.587
Sig. (2-tailed)	.463	.000	.000	.000		.000	.000
N	51	51	51	51	51	51	51
Speed/responsiveness Pearson Correlation	.161	.701	.825	.710	.566	1	.733
Sig. (2-tailed)	.125	.000	.000	.000	.000		.000
N	51	51	51	51	51	51	51
Connectivity Pearson Correlation	.223	.746	.808	.599	.587	.733	1
Sig. (2-tailed)	.25	.000	.000	.000	.000	.000	
N	51	51	51	51	51	51	51

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

*. Correlation is significant at the 0.05 level (2-tailed).

The correlation between dimensions of logistics performance and transport function (dimensions) indicators was run as seen in the above table. The result of correlation matrix between logistics performance and transport function (dimensions) are analyzed as follow:

As it is shown in the table 6 above, Creating time, place and possession utility is positively related to indicators of transport function (dimensions) of Speed/responsiveness with a Pearson correlation coefficient of .701 (r=0.701) and significance value is less than 0.001 and Connectivity with a Pearson correlation coefficient of .746 and significance value of less than 0.001. This significance tells that there is strong relationship between Creating time, place and possession utility of logistics performance and transport function (dimensions) of Speed/responsiveness and Connectivity.

It is also shown in the table above; the other logistics performance Deliver customer orders on time is positively related with transport function (dimensions) of Speed/responsiveness with Pearson coefficient of .825 and with Connectivity with Pearson coefficient of .808 with significance of less than .001 in all the two cases. This significance tells that there is a strong and genuine relationship between logistics performance of Deliver customer orders on time and transport function (dimensions) of Speed/responsiveness and Connectivity.

The other utility that logistics performance is place utility by delivering products to the right place .In this regard, logistics performance of creating place utility is positively related with transport function (dimensions) of Speed/responsiveness and Connectivity with Pearson coefficient of .710 and .599 respectively with significance level of less than.001 in all the two correlations.

Lastly, the others logistics performance were fast service delivery by the company, In this regard, logistics performance of creating fast service, is positively related with transport function (dimensions) of Speed/responsiveness with Pearson coefficient of .566, also connectivity with Pearson coefficient .587, respectively with significance level of less than .001.

4.4.1.2. Correlation between transport function and factors affecting Logistics Performance

Table 7: Correlation between transport function and factors affecting logistics performance

Correlations

	Transport Function	Factors Affecting Logistics Performance
Transport Function Pearson Correlation Sig. (2-tailed) N	1 51	.901** .000 51
Factors affecting logistics performance Pearson Correlation Sig. (2-tailed) N	.901** .000 51	1 51

**. Correlation is significant at the 0.01 level (2-tailed).
Source: SPSS Version, 2020

Table 7 shows the result of correlation run between transport function and factors affecting Logistics Performance. As a result of the correlation run, there is a very strong positive relationship between transport function and factors affecting Logistics Performance with Pearson coefficient of correlation of .901 with significance of .000 which is less than .001

4.4.2. Regression Analysis

Multiple regression analysis was conducted to find out the independent effects of each factors affecting logistics performance emphasis on transport function. Multiple regression technique gave a more detailed analysis as it enabled the examination of the factors affecting logistics performance emphasis on transport function. As it is explained earlier in this paper, transport plays a great role in the logistics performance and to have an efficient logistics performance, and it is must to have a strong transport function in the company. To prove this and determine the variation in logistics performance as a result of transport function, a regression analysis is conducted.

4.4.2.1. Regression analysis between logistics performance and transport   function
Table 8: Model summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.901 a	.811	.802	2.62985	1.825

Source: SPSS Version, 2020

a. Predictors: (Constant), transport function

b. Dependent Variable: logistics performance

From table 8 R-Square which is the coefficient of determination is a commonly used statistics to evaluate model fitness. The adjusted R square also called the coefficient of multiple determination, is the percentage of the variation in the dependent variable explained uniquely or jointly by the independent variable. As per the adjusted R square result in the table 8 above, 80.2 percent of variation in Logistics performance of East Africa Bottling Share Company Jimma branch can be attributed to effect of predictor variable which is transport function. This means, 19.8 percent changes in logistics performance can be attributed to other factors while 80.2 percent of the variation in logistics performance was as a result of the functions that transportation plays in the logistics performance.

4.4.2.2. Independent of observation test

Independent of observation may also be tested by the Durbin- Watson coefficient, which uses standardized residuals. The Durbin – Watson statistics should be between1.5–2.5 for independent observations. In this study, the value of Durbin – Watson from the above table is 1.825. This value is within the acceptable range of the assumption and it implies that the observations are independent.

4.4.2.3. Test of linearity

According to Darlington (1968), Linearity defines the dependent variable as a linear function of the predictor (independent) variables. Multiple regressions can accurately estimate the relationship between dependent and independent variables when the relationship is linear in nature (Osborne & Waters, 2002).

This diagnostic test of linear regression assumes that the residuals should follow a straight-line in the Normal Probability Plot indicating that the relationship between the independent and dependent variable of the study was linear. As shown in figure below, the points lie in a reasonably straight diagonal line from bottom left to top right; it seems the linear regression fit the data on a straight line which confirmed existence of linearity.

Normal P-P Plot of Regression Standardized Residual

Dependent Variable: D
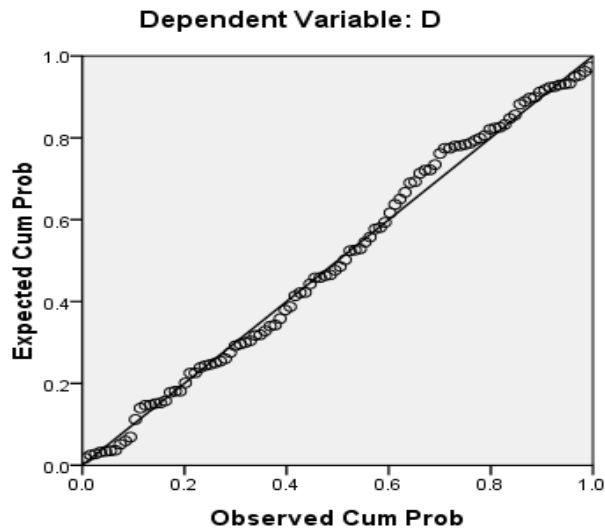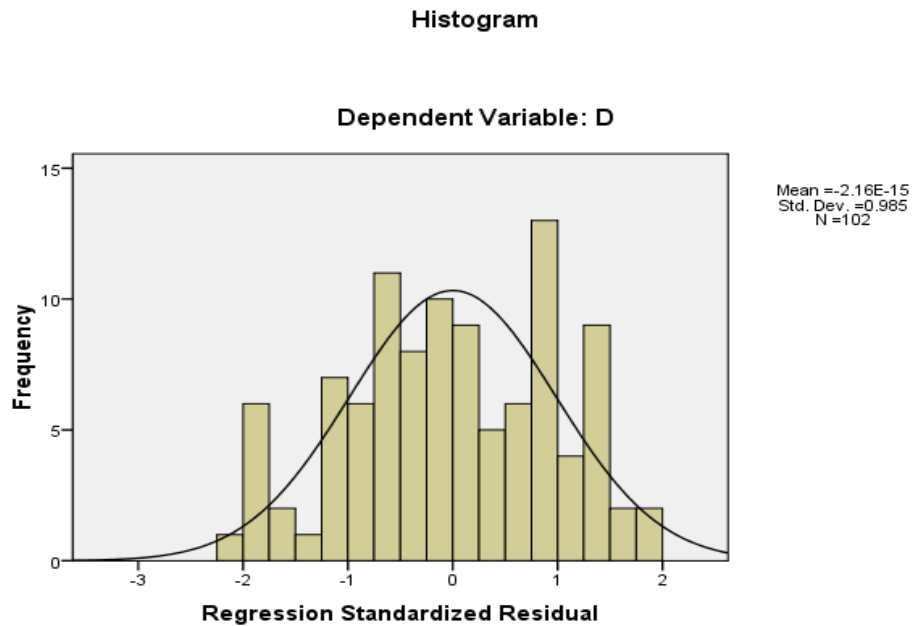

Source: SPSS Version, 2020

Figure 1: Regression Standardized Residual

4.4.2.4. Normality of Residuals (Normality Test)

To be sure that the model is a good one, it is important to examine the residuals. According to Darlington, (1968) the differences between the values of the outcome predicted by the model and the values of the outcome observed in the sample are known as residuals. Normality can further be checked through histograms of the standardized residuals (Stevens, 2009). Histograms are bar graphs of the residuals with a super imposed normal curve that show distribution.

The residuals should follow a normal distribution about the predicted dependent variable with a mean score of 0 and standard deviation of 1. A mean of 0 indicates the line is in the middle of the points. Once again, some are above and some are below. The normal distribution was shaped like a bell—it is symmetric, and most points were in the middle, with fewer and fewer farther from the mean. And the bell shape means that most points were close to the line, and there were fewer points farther from the line.

The histogram and p-p plot depicted in figure below shows that, the residuals seem normally distributed and the residuals were distributed with the approximate mean value of 0 and standard deviation of 0.985 which was approximately 1. Thus, the model fulfilled the assumption of normally test.

Source: SPSS Version, 2020

Figure 2: Regression Standardized Residual

Table 9: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.270	8	.034	2.898	.027[b]
	Residual	.012	1	.012		
	Total	.282	9			

Source: SPSS Version, 2020

a. Predictors: (Constant), transport function, Speed/responsiveness, Connectivity

b. Dependent Variable: logistics performance

From table 9, it is obvious that the regression model was significant using between the independent variable and dependent variable. An F statistic of 2.898 and a probability value of 0.027 clearly indicate that the model was significant.

4.4.2.5.   Multi co linearity Test

Co linearity occurs when two or more independent variables contain strongly redundant information. If variables are collinear, there is not enough distinct information in these variables for the multiple regressions to operate correctly. A multiple regression with two or more independent variables that measure essentially the same thing can produce errant results and this is called a problem of multi co linearity.

Different scholars recommend different levels of correlation coefficients of independent variables to predict the presence of multi co linearity problem in a certain research; among those, Malhotra (2007) suggested that the problem of multi co linearity may exist when the coefficient of correlation among independent variables is greater than 0.75 whereas Cooper & Schindler (2009), revealed that if the correlation coefficient is above 0.8, there was a problem of multi co linearity in the research.

In this study the correlation matrix for the independent variables, as indicated in the above correlation table, there is no correlation above 0.75 or 0.8; it can be concluded that there was no multi co linearity problem in this research. Ideally, independent variables

are more highly correlated with the dependent variables than with other independent variables.

Table 10: Co linearity Statistics

Model		Tolerance	VIF
1	(Constant)		
	A	.66	1.9
	B	.21	2.3

Source: SPSS Version, 2020

Further to the reliability tests a multi co linearity test was done at the pilot stage to ensure that the accepted independent variables did not exhibit co linearity amongst themselves. A situation in which there is a high degree of association between independent variables is said to be a problem of multi co linearity which results into large standard errors of the coefficients associated with the affected variables. According to Mugenda and Mugenda (2012), multi-co linearity can occur in multiple regression models in which some of the independent variables are significantly correlated among themselves.

In a regression model that best fits the data, independent variables correlate highly with dependent variables but correlate, at most, minimally with each other. This problem was solved by ensuring that there was a large enough sample as multi co linearity is not known to exist in large samples. Multi co linearity can also be solved by deleting one of the highly correlated variables and re-computing the regression equation. From table 10, the tolerances are all above 0.2. If a variable has co linearity tolerance below 0.2, it implies that 80% of its variance is shared with some other independent variables.

Myers (1990) also postulates that a VIF (Variance Inflation Factor) value greater than 10 calls for concern. As indicated in table 13, there is no existence of multi co linearity problem among the explanatory variables as tolerance values are greater than 0.2 and VIF values less than 10.

4.4.2.7. Regression analysis between Logistics performance and

Factors affecting logistics performance

Table 11: Regression coefficients for Logistics performance and for predictor

Variable

Model Summary

Model		Un standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.577	.369		1.565	.120
	Speed/responsiveness	.213	.071	.271	2.987	.003*
	Connectivity	.100	.050	.143	1.993	.001*

a. Dependent Variable: logistics performance

Source: SPSS Version, 2020

Table 11 shows that there exists significant association between the independent variables Speed/responsiveness and Connectivity and the dependent variable logistics performance of East Africa bottling Share Company Jimma branch, since the p-value of those logistics performance dimensions are less than 0.05

The unstandardized coefficient of an independent variable (also called B or slope) measures the strength of its relationship with the dependent variable (CSR practice); this means, the variation in the logistics performance corresponds to the variation in the independent variables. A coefficient of 0 means that, the dependent variable do not consistently vary as the independent variables varies. In this research model, the coefficient for the Speed/responsiveness is 0.213 and the coefficient for the Connectivity is 0.100. So, for a certain variation in each independent variable as stated above, there was a consistent variation in the logistics performance.

The standardized beta (β) coefficient column also showed that the contribution that an individual variable makes to the model. The beta weight is the average variation the dependent variable logistics performance increases when the independent variables (Speed/responsiveness and Connectivity) increases by one standard deviation (all other independent variables are held constant). Thus, the largest influence on logistics performance is from the Speed/responsiveness (.213) and Connectivity .100). The above table further shows that all the explanatory (independent) variables included in this study can significantly explain to the variation on the dependent variable (logistics performance) at 95% confidence level.

Table 12: **Model Summary for dependent variable logistics performance**

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.977a	.954	.943	1.08231	1.779

a. Predictors: (Constant), transport function

b. Dependent Variable: logistics performance

Source: SPSS Version, 2020

The findings from table 12, the adjusted R Square, implies that 94.3 percent of the variation in transport function of the East Africa bottling share company Jimma branch can be attributed to the combined effect of predictor variable (Speed/responsiveness and Connectivity). That means 5.7 percent of changes in the transport function is attributed to other factors.

Table 13: Regression coefficient for transport function of East Africa bottling Share Company Jimma branch

Coefficients

Model		Un standardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	Constant	31.044	5.074		6.003	.000
	Logistics performance.	.807	.173	.471	4.801	.000

a. Dependent Variable: Logistics Performance.

Source: SPSS version, 2020

The result in table 13 shows that there is significant association between the independent variable transport function and logistics performance as p-value for transportation function is less than 0.05

Table 14: Model summary for Factors Affecting Logistics Performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.44	.194	.190	6.98474	1.586

a. Predictors: (Constant), Transport function

b. Dependent Variable: Logistics performance

Source: SPSS Version, 2020

The adjusted R Square table 14 shows that 19% of variation in Transport function is related with the factors affecting logistics performance with the remaining of 81% resulting from other factors.

CHAPTER FIVE

5.SUMMARY, FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1. INTRODUCTION

This chapter has four parts: summary, findings, conclusion and recommendation. The conclusion is based on the data that are analyzed in chapter four while recommendation is based on the conclusion. The main purpose of this study was to identify the Factors Affecting Logistics Performance Emphasis on Transport Function: A Study on East Africa Bottling S.C. Jimma Branch

5.2. Summary

This research aimed at investigating the Factors Affecting Logistics Performance Emphasis on Transport Function: A Study on East Africa Bottling S.C. Jimma Branch. The dependent variable is Logistics Performance whereas the independent variable includes: Transport function (Speed/Responsiveness, Connectivity). Accordingly, there is an association between dependent variable and independent variables, in which the magnitude of association ranges from medium to strongest. As per the output of regression analysis made to for Transport Function, it is Speed/responsiveness and Connectivity factors related to operation of transport function which could determine logistics performance of East Africa Bottling S.C. Jimma Branch.

5.3.   FINDINGS

As per the discussion and data interpretation under taken in the previous chapters, the findings derived.

The objective of the study is to examine the Factors Affecting Logistics Performance Emphasis on Transport Function on East Africa Bottling S.C. Jimma branch.

Literature has suggested that Logistics Performance is dependent up on Transport Function at each and every stage of operation. The study will contribute by exploring the relationship between the Factors Affecting Logistics Performance and Transport Function.

The company transportation is efficient in moving products and transportation service delivers products to the right place needed have a mean square value of 4.43 (Std. Dev. .693) and 4.11 (Std. Dev. .652) respectively showing that transportation is providing logistics efficiency by playing the roles of Speed/responsiveness of transport function.

The company creating time, place and possession utility with a mean square value of 2.59 (Std. Dev. .411).This shows that the respondents responded neutral for the company creating time, place and possession utility. Whereas the respondents disagreed on the company deliver customer orders on time, fast service delivery by the company and with a mean square value of 2.17(Std. Dev. .344), and 1.61 (Std. Dev. .255)

The company transportation is efficient in reaching economies of scale and economies of distance to reduce cost with a mean square value of 4.05(Std. Dev. .605). And also become neutral in company's outlets connected with a mean square value of 2.63(Std. Dev 1.11).

Unlike the above five practices, Transportation service flexible, efficiency of cost, overall quality of our transportation, providing dependable delivery and better tracing and tracking practice in the company with mean value of 2.25(Std. Dev. .98), 2.37(Std. Dev. .94), 2.39(Std. Dev. .818), 2.21(Std. Dev. .951) and 2.43(Std. Dev. .971) respectively, the respondents disagreed with the Connectivity of the company. This shows that, the company lacks in the above five dimensions of transport function (Connectivity).

Damage free deliveries and branches sales improved was strongly agreed with mean value of 4.57(Std. Dev. 1.823) and 4.53(Std. Dev. 1.811) respectively.

Lead times and service delivery is improved were responded neutral with mean value of 3.41(Std. Dev. 1.363) and 2.52 (Std. Dev. 1.093) respectively.

Whereas, number of orders shipped on time and customers complains are decreased were disagreed with mean value of 2.18 (Std. Dev .871) and 2.33(Std. Dev .931) respectively.

5.4.   CONCLUSIONS

This research covers broadly Factors Affecting Logistics Performance Emphasis on Transport Function Jimma branch through extensive review. Based on the result of summary findings,

The company is using economies of scale and distance in order to reduce transportation cost that leads to reduced logistics cost. Transportation service of East Africa Bottling Share Company Jimma branch is providing speed/responsiveness and connectivity. Transportation of the company is not flexible as supported by majority of respondents which shows lack of flexibility in transportation operation of East Africa Bottling share Company Jimma branch.

The transportation practice is also not cost efficient as per respondents' response. The transportation service is also not giving timely reply to special enquiry from customers. The improved number of orders shipped on time had also a problem.There is a strong and positive relationship between factors affecting logistics performance and transport function on East Africa Bottling S.C. Jimma branch.

5.5.   RECOMMENDATIONS

The following suggestion and recommendation are brought forward based on the conclusion made earlier so as to allow the management of the company to take appropriate actions to set the problem identified in the study right. This includes:

- ✓ In order to minimize factors affecting logistics performance and enhance transport function, the company has to work on transportation flexibility in order to serve different parts of the customers.
- ✓ Transportation cost has to be controlled in order to minimize factors affecting logistics performance on transport functions.
- ✓ The company gives special attention to giving timely reply to special enquiry from customers.
- ✓ To grow the benefits of transport functions, the company has to give due emphasis to factors affecting logistics performance as transportation accounts for about one third

to two third of logistics costs which will support the company's objective of benefiting from economies of scale.

✓ The company should give attention in improving number of orders shipped on time.

✓ To enhance organizational performance, it is better for the organization to give due attention to transport functions as more and more of their operation is dependent on this activities.

5.6   IMLICATION FOR FURTHER STUDY

- Logistics is not only affected by transportation but logistics performance is just ranking the rating in relation to the other factors affecting to logistics performance is not greater than the transportation. Below are cost ratio of logistics items(Chang,1998).

- It should be noted that transportation is not the only factor that influence logistics performance but there are other elements of activities like Order Processing, Inventory control, procurement, warehousing, distribution,... all have a say on the performance of logistics operation even if the major one is transportation.

- Logistics performance is not dependent only on transportation function. Therefore, the implication for further study is to include all other dimensions including the influence from other departments in the company in order to have a full picture of factors having significant role on logistics performance .

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APPENDIX I

JIMMA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF LOGISTICS AND TRANSPORT

MANAGEMENT

JUNE, 2020 G.C

Questionnaire

Dear respondent,

This research will be conducted as a partial fulfillment of Master of Arts (MA) graduate
student of Jimma University, College of Business and Economics department, Logistics
and Transport Management. This paper will be designed to gather primary data on

Factors Affecting Logistics Performance Emphasis on Transport Function, in A Case Of East Africa Bottling Share Company Jimma Branch.

No reference will be made to any individual and the information will be reported in an aggregated form. I will like to forward my heartfelt thanks in advance for your cooperation being sacrificing your time. It takes approximately 30 to 40 minutes on average to complete it.

Finally the researcher will like to ask you to be realistic and objective in assessing your organization. The researcher will be assured complete anonymity of the gathered data. These will be represented on aggregate level alone. Please provide answers on all questions even though you feel that they repeat themselves occasionally. This is the only way that the researcher can assure statistical validity of the questionnaire.

Email: zenumohammed8@gmail.com or mobile phone 0911051963/0967007270

Thank you in advance for your cooperation

N.B. Tick √ or **X** mark for close ended questions and use the space for open ended questions

Part One: Demographic Characteristics of Respondents

1. Gender: Male ☐   Female ☐

2. Age ☐   below 25 ☐   25-35 ☐   35-45 ☐   above 45

3. Your Experience:

A. Less than 3 years   ☐. 4-10 years   ☐C. 11-15 years   ☐D. Above 15 years

4. Your current ☐ position in the Banking.

A Transportation Officer ☐   B. Logistics manager ☐   C. Warehouse Manager ☐

D. Recovery/monitoring officer E. Distribution officer F. None Managerial Employee
☐

Part Two: Questions related to the Logistics and Transport function

1. What is/are district/branch specific logistics activities? Please specify your answer

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2. What are the challenges of transportation activities that resulted in poor logistics performance of the company? Please specify your answer

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3. Please indicate your degree of agreement or disagreement to the selected transport functions (dimensions) that affect the logistics performance.

	Factors	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
4.1	**Speed/responsiveness**					
4.1.1	The company transportation is efficient in moving products					
4.1.2	The company creating time, place and possession utility					
4.1.3	The company deliver customer orders on time					

		Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1)
4.1.4	Our transportation service delivers products to the right place needed					
4.1.5	There is a fast service delivery by the company					
4.2	**Connectivity**					
4.2.1	The company outlets are well connected					
4.2.2	Transpiration service of our company is flexible					
4.2.3	The company reach economies of scale and economies of distance to reduce cost					
4.2.4	Our transportation service is cost efficient					
4.2.5	The overall quality of our transportation is very high					
4.2.6	The company provide dependable delivery					
4.2.7	There a better tracing and tracking practice					

4. Please indicate your degree of agreement or disagreement to the following logistics performance indicators particular to transport function.

	Indicators	Strongly Agree (5)	Agree (4)	Neutral (3)	Disagree (2)	Strongly Disagree (1
5.1	Lead times improved					
5.2	The service delivery is improved					

5.3	Improved number of orders shipped on time					
5.4	Damage free deliveries					
5.5	Customers complains are decreased					
5.6	Branches sales improved					

THANK YOU !!!