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THE EFFECT OF LOGISTICS ACTIVITIES ON ORGANIZATIONAL PERFORMANCE: THE CASE OF MODJO DRY PORT

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Declaration

I, the undersigned, declare that this thesis entitled as “The effect of logistics activities on organizational performance: the case of modjo dry port” is my original work and has not been presented for the award of any degree or diploma in this or any other university. All sources of materials used in the thesis have been duly acknowledged.

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Statement of Certification

This is to certify that this thesis entitled as “The effect of logistics activities on organizational performance in the case modjo dry port, is his original work and is suitable for submission for the award of Masters of Art Degree in Logistics and Supply Chain Management, done by Girma Kumsa is an authentic work carried by his under our guidance. The theme embedded in this thesis has not been submitted earlier for the award of any degree or diploma in any other university to the best of our knowledge.

_____	_____	_____	Addis Ababa, Ethiopia
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Abstract

Logistics activities has become a potentially valuable way of securing competitive advantage through enhancing and improving organizational performances since competition is no longer between organizations, but among supply chains. The general objective of this was the effect of logistics activities on organizational performance in case of Modjo dry port .This research conceptualizes and develops on four logistics activities (Transportation management, Inventory management, Warehouse management and customer response) to test their effects on organizational performance. Descriptive and Explanatory research design was used to explain logistics activities and to examine the effect of logistics activities on performance of modjo dry port. Simple random sampling was used to select the appropriate samples of the study. All of the logistics activities were found to have positive and significant correlation with the dependent variable which is organizational performance. The ANOVA test result showed that, the value of R and R^2 obtained under the model summary was statistically significant. The data for the study was collected from 69 employees of Modjo dry port. The relationships proposed in the framework were tested using Descriptive statistics, Pearson correlation, and the causal relations were analyzed using regression analysis. From the result of the analysis it is concluded that there is strong relationship between Logistics activities and organizational performance. Therefore, in order to achieve advancement in profitability and customer satisfaction in the long-run through enhancing organizational performance, it is better for the organization to give due emphasis to the constructs of logistics activities and organizational performance.

Key words: Logistics, Logistics activities, Dry port, performance

Acronyms

CSM:-Customer response management

FTL:-Full truck load

ISO:-International standard organization

LTL:-Less truck load

IM: -Inventory management

IMF:-International monetary fund

LPI: - Logistics performance index

MDP: - Modjo dry port

OP: - Organizational performance

ROI: -Return on investment

SPSS:-Statistical package for social science

WB: -World Bank

WM: -Warehouse management

CHAPTER-ONE

Introduction

This section encompasses background of the study, statement of the problem, objective of the study, research question, limitation and scope of the study, among others.

1.1 Background of the study

Logistics is the part of a supply chain involved with the forward and reverse flow of goods, services, cash, and information. According to council of the Logistics and Supply Chain Management Professionals Logistics management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning, and management of third party logistics services providers. 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 (Stevenson, 2009).

Today, logistics management is based on the system concept and cost approach. Transportation, warehousing, handling of material, inventory management and order processing are the major logistics activities, which impact the customer cost and operation. Integrated logistics helps in taking the cost out of the supply chain and also enhance the customer service level. When looking at the macro level, a growth of a country's economy depends on the availability of excellent logistics infrastructure. The speed of the movement of goods depends to a great extent on the various modes of transportation like rail, road, air, and sea. Logistics' role is to provide time and place utilities. Time and place Utilities facilitate the creation of global scale and scope economies while enhancing organizations ability to provide high levels of seamless customer satisfaction (McGrath and Hoole, 1992).

Despite its obvious importance, logistics has not always received its fair share of attention. Historically, organization put all their effort in to making products &gave little through to the associated movement of materials. By now considerable change is coming. The main reasons for these changes are the recognition that Logistics was expensive. However, Logistics had been identified as a high cost function & one where organization can make significant savings.

The obvious ways of avoiding these problems is to consider Logistics not as a series of distinct activities, but as a single integrated function, and then all the parts together to get the best averall result for the organization (Donald Walters, 2003).

Companies that were successful worldwide had long recognized the critical role of logistics management played in creating added value. Therefore logistics is a critical contributor to the competitiveness of a country's economy. Improving efficiency of logistics operations, logistics makes on important contribution to the economy as a whole. Logistics also adds value by creating utility one of the fundamental ways that logistics adds value is by creating utility. From an economic stand point, utility represents the value or usefulness that an item or service has in fulfilling a want or need. Logistics is directly responsible for getting a product to its place of purchase or redistribution on time. Like that of other firm dry port is one organization that predominantly exercises logistics activities, in line with this to ensure the synergy and cooperation, it is important that a logistics practice play a critical function for dry port performance (Roso, 2009).

Roso(2009) dry port is an inland intermodal terminal directly connected to a seaport with high capacity traffic modes, preferably rail, where customers can leave or collect their goods in intermodal loading units, as if directly to the seaports, moreover the authors state that service such as transshipment, consolidation, storage, maintenance of containers and depot should available at dry ports. The dry ports also facilitate interchangeability through transport modes from rail to road and vice versa. In addition, they provide temporary storage for goods and containers in order to consolidate or de-bulk into smaller or larger loads for onward transit. A dry port is a logistics node which improves cost-efficiency, environmental performance and the quality of hinterland network connection.

1.2 Statement of the problem

Effective logistics practice can lead to more efficient operation performance that increase the organization competitiveness and increase customer loyalty where distances are frequently and many environmental barriers increase the complexity and uncertainty of worldwide operations. Logistics is one of major activity that has impacts on organization performance. Actually, it deals with a number of sub activities like: Inventory control, warehousing and material handling, and transportation (DonaldWalters, 2003).

World bank (2010) report on logistics performance states that a competitive network of global logistics would be the backbone of international trade and the importance of efficient logistics for trade and growth would be widely acknowledged, better logistics performance is strongly associated with trade expansion, export diversification ability to attract foreign direct investment and economic growth. The World Bank Logistics Performance Index (LPI) which is an overall LPI score measures the performance of a country's logistics based on efficiency of customs clearance process, quality of trade and transport-related infrastructure, ease of arranging competitive shipments in terms of Price, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time. According to this index Germany, Netherlands and Belgium are the most efficient and highest ranked LPI countries at positions 1, 2 and 3 in the 2014 LPI. In Africa, South Africa, Egypt and Malawi are the most consistent and highest ranked in logistics performance at positions 34, 62 and 73 respectively. East African countries have had mixed rankings with Kenya ranked the highest at position 74 while followed by Rwanda, Ethiopia, Burundi, Tanzania, and Djibouti at positions 80, 104, 107, 138 and 154, respectively. Therefore it is clear that logistics management has a great effect on economy and a critical contributor to the competitiveness of the country. All the six key dimensions of logistics performance measured suggest that Ethiopia’s trade logistics are fundamentally weak and need to be improved.

Ethiopia’s poor logistics raise costs for local industries and hamper the country’s competitiveness in the global market (IMF, 2014). On report of 2014 inefficient logistics practices not only impede Ethiopia’s export, they also increase the cost for consumers for imported goods. Improving trade logistics are thus very important for making Ethiopia’s export

sector globally competitive. This index showed how low Ethiopia's was in terms of logistics performance and a need for further research to come up with the ways on how to improve the situation.

The Ethiopian logistics system is characterized by poor logistics practices and lack of coordination of goods transport, low level of development of logistics infrastructure (Fekadu, 2013). Even though there is a study done by Fekadu on Ethiopian logistics practices he doesn't focus specifically on those logistics activities like inventory management, customer response, transportation and warehousing. At present, most of the studies of dry port focus on the determinants of dry port performance and other variables, but there are no studies on the effect of logistics activities case on dry port performance. It is evident that no known local study had been done on this phenomenon and it was against background that I, the researcher intend to clearly state the effects of logistics activities on organizational performance with specific reference to Modjo dry port .the intended purpose to conduct this is study is to narrow down the above stated problems.

1.3 Basic Research Questions

1. What are the effects of transportation management on organizational performance?
2. What are the effects of inventory management on organizational performance?
3. What are the effects of warehouse management on organizational performance?
4. What are the effects of customer response on organizational performance?

1.4 Objective of the study

General objective

The main objective of the study was to examine the effect of logistics activities on organizational performance-Case on modjo dry port.

Specific objective of study

- To analyze the effects of transport management on organizational performance.
- To explore the effects of inventory management on organizational performance.
- To examine the effects of warehouse management on organizational performance.
- To assess the effects of customer response on organizational performance.

1.5 Significance of the study

The significances of this study can be seen from different dimension.

The primary merits of this study was practical importance to government, port authorities and other concerned body by providing information on logistics activities to support their decision regarding performance of organization. The study will also benefit the academic community as it may contribute to the increasing body of literature on logistics and it present avenues for continuing particularly on effect of logistics of activities. Finally for future studies on such areas, it gives a comprehensive starting point for further research on the effect of logistics activities.

1.6 Scope of the study

Logistics activities encompass vast areas of managerial practices. However, it is difficult and unmanageable to conduct the study in all areas, particularly in terms of research manageability. Logistics activities are defined in different ways depending on the understanding of explanation of different scholars, but the subject scope of this study is delimited to the certain major logistics activities can be identified with respect to major and the organization can predominantly exercise it. Logistics is a composition of the following five activities: customer responses, inventory management, supply (sourcing), transportation and warehousing (Ensarmu, 2015).

The study considered only four aspects of logistics activities which included: Transportation management, inventory management, warehousing management, and customer response because the area of the study is delimited to dry port due to this the study doesn't considers sourcing. The study considers only modjo dry ports; because modjo dry is the main and the biggest dry port in Ethiopia where 80% of national import and export is accommodated at this port. To manage the sample size and other methodological part, it considers only modjo dry port. However some micro level of generalization for similar organization in the same service requirement might be possible (krauth.et, al, 2005).

1.7 Limitations of the Study

Since the research is focused on the selected frame work of logistics activities it is difficult to generalize the finding of the study to all other logistics activities that are described by different researchers and authors. So to improve generalizibility the study can be replicated for other logistics activities.

1.8 Operational Definition of Terms

Inventory Management: It is the process of consistently having the optimal amount of row materials for transformation and finished products available in order to deliver them rapidly to meet a customer‘s inventory requirement in a competitive manner (Bowersox, et al., 2010).

Logistics: Logistics encompasses all the information and material flows throughout an organization, it is the process of strategically managing the parts and finished inventory (and related information flow) through the organization at cost effective fulfillment of orders (Christopher, 2010)

Transportation: Transportation is defined as the activities involved in shipping any goods or finished products from suppliers to a facility or to warehouses and sales locations.

Dry port: A dry port is also known as an inland intermodal terminal directly connected to seaports with high capacity transports means, where customers can leave and pick up their standardized units as if dealing directly with a seaport (Roso, 2009).

1.9 Organization of the Research Report

This study is organized into five chapters,

Chapter one: contains background of the study, statement of the problem, basic research questions, objective of the study, significance of the study, delimitation/scope of the study limitation of the study, definition of terms and organization of the study

The second chapter: deal with the literatures relevant to the study and conceptual frame work adapted from previous and modified.

Third chapter, the type and design of the research, the subjects/participants of the study, the sources of data, the data collection tools, the procedures of data collection, and the methods of data analysis used are described.

Chapter four: summarizes the results/findings of the study and interprets and/or discusses the findings

Chapter five summarizes the results/findings of the study and interprets and/or discusses the findings. Finally chapter five comprises four sections, which includes summary of findings, conclusions, recommendations and suggestions

CHAPTER TWO: LITERATURE REVIEW

INTRODUCTION

The chapter went on to develop, theoretical framework, empirical review and conceptual framework that was to be used in the study in regard to each variable in the study

2.1Theoretical Framework

Theory is a systematically organized knowledge applicable in a relatively wide variety, especially a system of assumptions, accepted principles and rules of procedure devised to analyze, predict, or otherwise explain the nature or behavior of a specified set of phenomena (American Heritage Dictionary, 2012).

A key determinant of business performance nowadays is the role of logistics management functions in ensuring the smooth flow of materials, products and information throughout the company‘s supply chain. Theories are analytical tools for understanding, explaining, and making predictions about a given subject matter (Zima, 2007)

2.1.1 Definitions of Logistics

Logistics can be defined as the flow of materials, information, and money between consumers and suppliers (Frazelle, 2002). Similarly, (DonaldWaters, 2003) describes logistics as ‘the function responsible for the flow of materials from suppliers into an organization, through operations within an organization, and then out to customers’.

Logistics can also be defined as the process of strategically managing the procurement, movement and storage of materials, parts and finished inventory through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost effective fulfillment of orders (Christopher, 2005).

1.2.1 Logistics activities

This study provided a model that allowed organization to see which logistics activities were most important to them, and then how much value the organization were gaining from these activities relative to their costs, growth and customer satisfaction. It intended to identify the major aspects of logistics activities since due to the enormity of logistics operations, not all

aspects were being covered in this research, but rather those that were determined to be of the most importance and significance to a organization success.

Elements of logistic activities, such as customer services, sales forecasting, distribution communications, stock control, materials handling and ordering, amongst others, may give companies competitive advantages, especially when based on the exchange of reliable information between the links in the chain. On other hand there are fourteen key logistics activities that are involved in the flow of products, from point of origin to point of consumption: these are customer service, demand forecasting, inventory management, logistics communications, material handling, order processing, packaging, parts and service support, plant and warehouse site selection, procurement, reverse logistics, traffic and transportation, warehousing and storage (Lambert & Stock, 2001).

Frazelle (2002) and Kent (2001) states that logistics is comprised of five interdependent activities; these are customer response, inventory management, supply, transportation, and warehousing

2.1.2.1 Transportation Management

Transportation was defined as the activities involved in shipping any goods or finished products from suppliers to a facility or to warehouses and sales locations (Kenyon & Meixell, 2011). Transportation was required in the whole production procedures, from manufacturing to delivery to the final consumers and returns. Only a good coordination between each component would bring the benefits to a maximum (Laird, 2012). As the flow of goods was a part of the definition, transportation seemed a natural piece of logistics and therefore a vital factoring influencing organizational performance.

Transportation occupied one-third to two thirds of the amount in the logistics costs hence transport management influenced the performance of logistics system immensely. Only a good management and coordination between each component would bring the benefits of logistics to a maximum. A good transport management in logistics activities could provide better logistics efficiency, reduce operation cost, and promote service quality on firms (Bowersox, *et al*., 2010)

Transport, being the main component of logistics, plays an important part in all management decisions within the organization, from strategic decisions to everyday operations. Day to day management decisions also relies on transport, as “Just in Time” methods for distribution have become the standard. The speed of transportation was the time required to complete a specific movement. Speed and cost of transportation were related in two ways. First, transport organization capable of offering faster delivery typically charged higher rates for their services. Second, the faster the transportation service was, the shorter the time interval during which inventory were on transit and the higher the charges (Bowersox, *et al*., 2010). Thus, a critical aspect of selecting the most desirable method of transportation to the organization is to balance speed and cost of service. Transportation cost is a larger fraction of the total delivery cost. Basically, transportation serves two main purposes**:**

Product movement: The primary function of transportation is the forward and backward movement of the goods in the value chain. It is necessary that goods be moved only when they are necessary and there is an enhancement in the goods value. This is because transportation utilizes the financial resources for expenditure like driver’s labor, operation cost of the vehicle, and other administrative expenditure. The environmental resources are utilized both directly and indirectly. An example of direct usage can be the fuel and oil costs and an indirect usage can be the environmental expense caused by air, noise pollution in the environment.

Product Storage: Temporary storage for in transit goods is expensive. But in circumstances where the warehouse space is limited, utilizing the transportation vehicles may be a better option. One option is where the product is loaded on the vehicle and then it takes around about or indirect route to its destination. The vehicle can be used as a temporary storage option where the origin or destination warehouse has limited storage capacity. Another option is to take a diversion. This is done when there is an alteration in the shipment destination while the delivery is in transit. While, telephone was used for diversion strategies originally, today satellite communication handles this task efficiently.

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

Participants in the Transportation Decisions

Primarily there are five key parties in transportation decisions. Each of these parties has a role in the transportation environment.

Shipper: The party, which requires the movement of the product between the two points in the chain. The shipper's objective is to fulfill the customer order with responsiveness but at the minimum cost.

Consignee: The destination party or receiver. The consignee also has the similar objective of receiving the goods at a lowest cost and with maximum responsiveness.

Carrier: The party, which moves or transports the product with an objective of maximizing the revenue at the least cost. Carriers have a tendency charge a higher rate and reduce their costs by trying to consolidate various individual loads into economical loads and thus would seek flexibility in pickup and delivery with the client. This motive is in conflict with the manufacturer's objective of reducing total transportation costs.

Government: The Government has a high interest level in the transactions because a Stable and efficient transportation environment is necessary to sustain economic growth. To facilitate this, carriers must offer competitive services while operating profitably.

Public: The ultimate determinant of transportation by desiring goods at reasonable prices. Their concerns are related with the accessibility, expenditure, effectiveness as well as the safety and environmental standards.

Modes of transportation

Air**:** It is the least hazardous in nature when compared to all other modes of transport. Air transport is expensive, and is very suitable for products having high value or extreme perish ability. The prohibitive aspect of this mode is its high cost. From the operator's point of view, though the fixed cost is low compared to other modes like rail, water and pipeline, variable costs are very high as a result of fuel, maintenance, and the labour for crew. Though the cargo handled by air is growing at a fast pace, it is still not important when compared to the cargo handled by other modes of transportation. Air, by whatever type of airline, is generally considered a premium means of transportation. The best justification for the high cost can be

an emergency situation, which necessitates the service of air transport. Technological developments like new cargo-handling equipment at air terminals and the use of larger containers have been beneficial.

Sea / Water: The oldest mode of transportation. Water transport, due to its nature, is limited to certain areas. It is the slowest modes of all the modes and a lot of delays also occur at ports and terminals. Water transport is generally suited for carrying very large loads at low cost. Usually the shipping fleet across the globe comprises of tankers, dry bulk carriers, container ships and special vessels. Some of the problems encountered with this mode are rough weather characterized by storms, ice, high waves etc in – transit. Also there is a disadvantage of a limited range of operation and speed

Railway: capable of transporting large quantities of freight over long distances very economically. These are the principal carriers of men and material, and play a major role in the country's trade and commerce activities. It is the main source of supply of essential commodities, which are transported across the length and breadth of the country. Road traffic is relieved to a certain extent and also air pollution caused by trucks can be eliminated. The railways also charge competitive freight rates.

Roadways: A roadway is most popular mode of transport. With the manifold growth in industrial and agricultural activities, this mode has achieved a lot of importance. The various advantages of this mode are flexibility, faster turnaround, lesser risk of delays or strikes, door-to-door service, reach to remote places and through movement from consignor to consignee.

Pipeline: They are also utilized for transporting manufacturing chemicals, dry bulk materials like cement and flour by hydraulic suspension, and also sewage and water within cities and municipalities. This mode is unique in comparison with the other modes in the sense that they operate throughout the day, with limited time for changeover and maintenance. The basic advantage here is that they reduce the operational costs, though the initial investment is high. Also these are eco-friendly. The disadvantage of this being its lack of flexibility where only limited commodities in the form of gas, liquid or slurry can be transported.

Transportation modes that ship small quantities with lower inventory levels are more expensive. Firms decision on inventory aggregation must consider trade-offs among transportation, inventory, and facility costs. Inventory aggregation will be good if inventory

and facility costs are large enough in total costs of supply channel. The transportation cost incurs in a supply link to responsiveness. High responsiveness to customer, high transportation cost. If responsiveness decreases and aggregates orders arranged in a longer time horizon before delivery date ends, it is possible to take advantage of economies of scale and incur a lower transportation cost as a result of large shipments. Under certain circumstance it is necessary combining order to decreases a firm's responsiveness because of shipping delay. And, also it decreases transportation costs because of economies of scale that result from larger shipments. Firm should consider the trade-off between responsiveness and transportation cost at the time of designing transportation network (Chopra and Meindl 2007, PP.395-396).

The design of a transportation network affects the performance of inbound logistics. A well designed transportation network allows logistics to achieve responsiveness at a low cost. Actually, there are different types of design will be applicable depending on the situation at hand. The most used types are direct shipment network, direct shipping with milk runs, all shipments via central distribution center, shipping via distribution centers using milk runs and tailored network. All shipments come directly from each supplier to each buyer location, in the case of direct shipment network option. In this case, the routing of each shipment is specified together with the quantity to ship. So, the decision requires a trade-off between transportation and inventory costs. In the case of milk run, product delivers from single supplier to multiple retailers or from multiple suppliers to a single buyer location. In direct shipping with milk runs, a supplier delivers directly to multiple buyer locations or a truck delivers for the buyer from many suppliers. In order to use this option, it is necessary to decide on the routing of each milk run. Shipping directly to buyer benefits eliminating intermediate warehouses. On the other hand, milk runs lower transportation cost by consolidating shipments to multiple locations using a single truck. In this case, buyer will be responsible to divides locations by geographic region and build a distribution centers for each region and shipments buyer will be made from the distribution centers (Frantisek, 2002).

2.1.2.2 Inventory Management

The inventories are materials / resources of any kind having some economic value, awaiting conversion or use in future. Inventory is the key issue to supply chain management success. Customers demand that their orders be shipped complete, accurate and on time. That means

having the right inventory at the right place at the right time. Today the focus is on retailers and their distribution services. Inventory aims to reduce costs and simultaneously improve service. Thus the need to reduce costs as against improving service becomes the key issue and the role played by successful inventory management is becoming more apparent. Inventory is critical to supply chain management because it directly impacts both cost and service. Certain amount of inventory is inevitably required somewhere in the chain to provide adequate service to the end customer, as demand is mostly uncertain and it takes time to produce and transport product. Increasing supply chain inventories typically increases customer service and consequently revenue, but it comes at a higher cost. Today, inventory investment is viewed as a supply chain cost driver rather than a material asset. Holding stock for inventory requires investment of large capital. Any decisions about stock have direct relation to support the business and logistics strategies. Logistics strategy focuses on low costs to make stock holdings as efficient as possible. Stocks have a clear strategic effect on a organization influencing long-term options. But the strategic effect on of stocks has a clear effect on the organization's profit, margins, return on assets, and other financial measures of performance, such as lead time, availability, and reliability (Waters, 2003).

Inventory is a key determinant of profitability. Inventory velocity turns assets into profits. The faster inventory turns, the greater the profitability. Inventory is the key issue to supply chain management success. Customers demand that their orders be shipped complete, accurate and on time. That means having the right inventory at the right place at the right time. Excess of inventory within the pipeline increases the overall working capital requirements of the pipeline and places a large cost burden on the agents of the chain. The levels of inventory need to be reduced throughout the logistics pipeline, which will lead to an effective operation. Today the focus is on retailers and their distribution services. Inventory aims to reduce costs and simultaneously improve service. Thus the need to reduce costs as against improving service becomes the key issue and the role played by successful inventory management is becoming more apparent.

The study by Sahay and Ramneesh (2003) found that some of the major reasons for holding inventories by Indian organizations include: improving customer service; hedging against price changes and contingencies; achieving production, purchase and transportation economies; protecting against demand and lead time uncertainties; and balancing supply and demand.

Inventory management involves trading off the levels of inventory held to achieve high customer service levels with the cost of holding inventory, including capital tied up in inventory, variable storage costs, and obsolescence. The two cost items are traded often determining the optimal warehouse inventory quantity to maintain for each product the economic order quantity point the total cost is minimize. To make proper decisions on optimal replenishment system for disruptions that depends on cost structure and demand. Inventory is one of strategies organization use to mitigate disruptions. By maintaining product inventory as closes to the economic order quantity point as possible small business owners minimize their inventory costs. Logistics involves in trading off the level of involves inventory held to achieve high customers services level with the cost of holding inventory and management of inventory is a powerful driver of financial performance. Improper management of inventory leads to slow growth (Bemnet, 2004).

Functions of inventory

Inventory management is an area which has strategic importance in logistics operation and thus impacts the efficiency and effectiveness of the overall supply chain system. In order to get over the uncertainties in demand and supply, goods need to be kept in stock. This is because the cycle of production and consumption never matches. However, higher inventory levels will affect the bottom line of the company. It is important to strike a balance between the two extreme goals of lower cost and higher levels of customer service, as it is a high risk and high impact area. Companies block sizeable funds in inventories, which would otherwise have been invested in other important and productive areas. Inventories are held in the categories like Raw material and components, work in progress, finished goods, maintenance, repairs and Operating supplies, in-transit inventory.

Striking a balance between supply and demand:- whenever there is a sudden requirement of product, in large quantities it is not possible to produce such quantities immediately. Thus, products are manufactured in advance, and kept in stock during the peak period to avoid any shortage.

Minimize costs at acceptable inventory levels: When inventories are replaced in extremely small quantities, they result in low investments but high ordering costs. There has to be a point where, the total carrying cost of inventory is minimum but the level of inventory is such that it doesn’t affect production.

Provide the desired customer service levels: Customer demands are satisfied through inventory. The location of inventory determines time in which customer will be served, the company's policies concerning the economic order quantity, safety stocks, etc will determine the cost at which customer is getting served.

Protecting the operating system:- Inventory ensures that the operating system does not have any disruption. For example, if a worker in one work center falls sick or if there is a machine breakdown, the work need not be affected if the inventory is available and others can continue the work.

The need for inventory

Inventories of materials are necessary by all manufacturing organizations. Materials and inventories serve some social purpose in industries, which stems from some economic motives. The motive behind inventory is the following:

Meeting the production requirement: manufacturing organization needs to keep stock of raw materials, components and parts required for producing finished goods to meet the continuous production requirements.

Support in operational requirement: Inventories are required for repairs, maintenance as well as operational support. Inventory for this purpose include production machinery spare parts, chemicals, lubricating oils, welding rods etc.

Customer Service: Customer satisfaction is used as a tool for competitive advantage. To ensure customer satisfaction, it is necessary for suppliers to maintain parts in order to extend after sales service to their clients.

Speculation: Provides ample scope for holding large amount of inventories, but this inventory is not important for industrial purpose.

Precaution: Arises out of the inability to predict future demands precisely and getting the materials in time, without incurring extra costs.

2.1.2.3 Warehouse management

Merriam-Webster defines a warehouse as "a structure or room for the storage of merchandise or commodities. Kenyon and Meixell define warehousing as "the storage of components, raw materials and finished goods." Just like every other part of the supply chain, a warehouse is

used to add value to some good, as the good is stored for some purpose or passed through the warehouse for some purpose. Warehouse management has been defined as the combination of planning, decision-making and controlling inbound, storage and outbound flows). The online

Reference for Business has defined Warehouse as a storage facility that receives goods and products for the eventual distribution to consumers or other businesses". Warehouses are usually large plain buildings used for commercial purposes for storage of goods and are commonly used by exporters, importers, wholesalers, manufacturers (Blanchard, 2007). Warehouses or distribution center are usually equipped with loading docks to load and unload trucks and they have cranes and forklifts for moving goods, and are placed on ISO standard pallets loaded into pallet racks warehousing is a support function for logistics and plays an important role in attaining the overall objectives of an organization's supply chain system. Warehouse is a place where inventory is stored. It is basically an area of interface for production, market, customers as well as suppliers. The performance of warehouse is often judged by its productivity and its cost performance. In today's highly interconnected and interdependent supply chain networks, successful warehouse management involves a thorough understanding of how the basic warehouse management functions impact the supply chain. The warehouse, being a critical link in the supply chain, serves as the source of order status information for the customers, provides inventory visibility for the supply chain partners and for the enterprise as a whole. Warehouses that operate in more turbulent markets are likely to have to continually modify their products and services in order to satisfy customers' changing preferences (Faber 2013).

Functions within the warehouse

Receiving: Collection of activities involved in proper receipt of all materials coming into the warehouse, providing the assurance that the quantity as well as quality is as per ordered, and distributing the materials to storage or to the other organizational functions which require them.

Pre packing: This is done in the case when products are received in bulk from a supplier and repacked into single consignments. The entire merchandise, which is received, may be processed at once, or a portion may be held in bulk for processing later.

Storage: Putting away the inventory received to complement order picking. It can be explained as the physical holding of merchandise while it awaits demand. Method of storage depends on the size and the quantity of the items in inventory and the handling characteristics of the product or its container.

Order picking: Physical selection of the products from their locations after receiving the customer orders. In other words, process by which items are removed from storage in order to cater to a specific demand.

Packaging: This is basically optional which may be done after the picking process.

Sortation: When a warehouse stores multiple products, this activity is done.

Packing and shipping: Performance of tasks related to dispatching an order. This includes the following tasks like checking whether order is complete or not, packing material in an appropriate shipping container, preparation of shipping documents, including packing list, address label, and the bill of lading, weighing the shipments to determine shipping charges, accumulate orders by outbound carrier, loading trucks etc.

Traffic management: Choosing the best mode of transportation for inflow and outflow.

According to the study made by Hilmola and Lorentz (2011) warehouses and distribution centers have an important role in international logistics practices. They argued that these may simply serve markets or hold inventory, and therefore, provide means for achieving appropriate customer service in the international environment, prone to long lead times and disruptions. Market volatility, unpredictable demand, and impulse purchasing approaches make the fashion shoe business turbulent and dynamic. The two issues raise in warehousing management is space and time. Space is a scarce resource's investment should be maximized. Time also is an important resource that should be managed to deliver the product on time. Both have cost implication that incurs the organization. The stored inventory, intend for either for replenishment or used as a buffer against the uncertainty of demand; requires space until it will ship. In the meantime, the stock improves customer service enabling to respond the demand on time. Several sources imply that keeping good control over a corporation's warehouses is of great importance. As an example, the competitive power of an entire company as well as the complete supply chain may be derived from outstanding performance within the warehouse or distribution center. In a broader context, a company's warehouse operations can influence the

organization corporate performance in manners such as logistics costs, customer service and business alignment. Similarly, when shipments are consolidated, then it is easier to receive downstream. Trucks can be scheduled into a limited number of dock doors and so drivers do not have to wait. The results are savings for everyone. Consider, for example, Home Depot, where more than a thousand stores are supplied by several thousands of vendors. Because shipments are frequent, no one vendor ships very much volume to any one store. If shipments were sent direct, each vendor would have to send hundreds of trailers, each one mostly empty; or else the freight would have to travel by less-than-truckload (LTL) carrier, which is relatively expensive but there is enough volume leaving each vendor to fill trailers to an intermediate cross dock. And each cross dock receives goods from many vendors, sorts it, and prepares loads for each store, so that the total freight bound for each store is typically sufficient to fill a trailer. The result is that vendors send fewer shipments and stores receive fewer shipments. Moreover, the freight is more likely to travel by full truck-load (FTL) and so pay significantly less transportation costs. The more expanded concept inventory control aimed to maximize profits while providing good customer service. The objective of present warehouse management is to efficiently and effectively organize the processes in a warehouse (Faber, 2013).The warehouse, being a critical link in the supply chain, serves as the source of order status information for the customers, provides inventory visibility for the supply chain partners and for the enterprise as a whole (Bowersox and Closs,2000).

2.1.2.4 Customer Response

Organization should manage customer's satisfaction and customer response properly. Planning on the satisfaction and response for customers should be organizations day to day business scenarios. If the organizations want to assure the continuity of business, it should give great deal of concern on how to manage customer response and satisfaction (Martin, 2011). Customer service has been defined as customer oriented philosophy which integrates and manages all element of the customer interface which is determined optimum cost-service mix". Customer services are the output of the logistics system. It involves getting the right service to the right customer at the right place, in the right condition and at the right time at the lowest total cost possible. Good customer service supports customer satisfaction. Industry and customer; defective or broken merchandise can be exchanged and only with a receipt and

within a specified time frame. Retail stores often have a desk or counter devoted to dealing with return exchanges and complaints or will perform related function at the point of sale the perceived success of such interaction being depended on employees. It is out of logistics system which involves delivering of right product, to the right customer, at the right place, at the right condition, at the right time, and at the right lowest cost (Doglas.M.lambert,et al, 1998).

Organizational performance

Organizational performance refers to how well an organization achieves its market oriented goals as well as its financial goals. Performance is one of the most widespread dependent variable used by academics to assess the impact of an organization. In the opinion of some scholars performance is nothing but a reflection of strategic management. Performance could be defined as nature and quality of action that an organization takes to accomplish its principal mission and functions for generation of profit (Sink, 1991). From a quantitative perspective performance is related to a generalized scale and can be quantified in different manners. For example, it can be expressed as an absolute number, which managers can understand. In commercial organization performance measures usually have financial connotation such as costs and profits. A number of prior studies have measured organizational performance using both financial and market criteria, including return on investment (ROI), market share, a profit margin, and customer satisfaction.

2.2 Empirical review

A key determinant of business performance nowadays is the role of logistics management functions in ensuring the smooth flow of materials, products and information throughout the company‘s supply chain.

Liu andLuo, (2008) examine the effect of logistics capabilities on the manufacturing firm‘s performance in China. They classified logistics capabilities as customer-focused capabilities and information-focused capabilities. The study indicated that customer-focused capabilities and information-focused capabilities respectively significantly affected firm performance directly and indirectly.

Bichou and gray (2004) study conducted on Analyzing Performance indicators used in measuring efficiency of logistics. Their finding identifies the macro-performance indicators are

the measurement of ports logistics efficiency. Analysis of efficiency in logistics operation management play a role for arriving ,transporting ,receiving ,inspecting, loading ,picking ,unloading and repacking. Efficiency in logistics operations at port terminals plays an important role in developing global competition and trade (Rodrigue & Notteboom, 2009).

Zhang, and Lim (2005) The Impact of logistics on organization performance: case study on USA manufacturing firm. This study was done through a survey of 273 manufacturing firms in USA and the results indicated that logistics flexibility had significant, positive and direct impact on the customer satisfaction. This confirmed that, firms could achieve customer satisfaction by developing logistics flexibility which enabled quick replenishment of incoming materials and rapid delivery of finished products to customers.

Ruto and Datche(2015) study on logistical factors influencing port performance taking Kenya port Authority as a case study. The study use survey research design and employs descriptive statistics analysis and summaries the causes of poor performance in the port of Mombasa according to this findings: lengthy customs clearing procedures, rapid growth of container trade, frequent break down of Kenya Revenue Authority and Kenya Ports Authority, IT Systems, slow gate out process and slow container off-take to Container Freight and other logistics activities.

The World Bank's study "Logistics Performance Index" is broader than a study of ports alone, and measures logistics instead. Yet the study is interesting as it includes port users' evaluations on specific factors dealing with logistics performance, as well as a framework on how to measure them. The Logistics Performance Index measures on-the ground trade logistics performance based on six dimensions: timeliness, international shipments, tracking and tracing, customs, infrastructures and services quality.

In Ethiopia the study done by (Feqadu,2013).Assessment made about Logistics practice in Ethiopia ,in his finding logistics are a key component of dry ports and their operation has a direct effect on relevant economic variables such as export competitiveness and final import prices. A dry port provides service for the handling, storage of containers and transportation. The idea of dry port is emerging in the country to tackle the constraints related to ports and for cost effective use of the transport infrastructure. The need for freight and logistics system is, therefore, to manage and control the material flows with in the country, to and from ports, and logistical activities at the dry ports .Dry ports and freight stations, and warehouses are

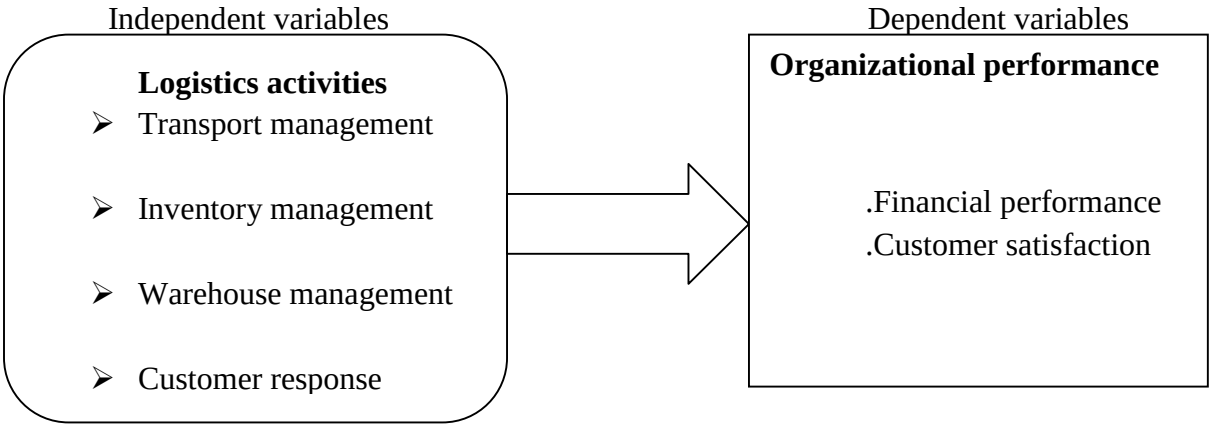
important elements of logistics system. A strong logistics activity like inventory control can support organization agility. The way goods are managed in warehousing, tools used to inventory management and control have an important impact on organizations performance.

2.3 Research Gaps

The major reason driving this study is lack of empirical evidence on Logistics activities and performance link with dry concept.

2.4 Conceptual framework of the study

The literature will examine so far explains the link between logistics activities and organizational performance to attain firm objectives. Conceptual framework is a diagrammatical representation that shows the relationship between dependent variable and independent variables. Elements of logistics activities, such as customer services, sales forecasting, distribution communications, stock control, materials handling and ordering, amongst others, may give companies competitive advantages, especially when based on the exchange of reliable information between the links in the chain (Bowersox, Closs and Drayer, 2005).Frazelle (2002) and Kent (2001) states that logistics is comprised of five interdependent activities; these are customer response, inventory planning and management, supply, transportation, and warehousing**.** The conceptual Framework for this study is as follow



Source: Fig 1: Conceptual framework of the study: **Modified and adapted from (Frazelle ,2002)**

CHAPTER THREE: METHODOLOGY

INTRODUCTION

The main purpose of the research methodology is to explain how the study is accomplished, what knowledge is required, what information is needed, how information is collected and analysis.

3.1 Description of study area

This study was conducted on Modjo dry port. Modjo Dry port service enterprise is a public enterprise established in 2007 by the council of ministers regulation No 136/2007.The enterprise established to develop and operate dry port of the country through the multimodal transport system and is now serving as a point of departure and destination for the country's import and export cargoes.The MDP has a total area of 61 hectare of land and is located in Modjo town, along the Ethio-Djibouty road, 76km east of Addis Ababa, in Oromia National Regional state. Source :(organization brochure)

3.2 Research Approach

The study was followed inferential statistics for quantitative approach in this study to achieve its purpose and descriptive statistics for qualitative approach. According to Kothari (2004) the purpose of inferential approach is to form a data base to infer relationships. So, both qualitative and quantitative research approach was used.

3.3 Research design

Different authors discuss three types of research design. These are exploratory (emphasizes discovery of ideas and insights), descriptive (concerned with determining the frequency with which an event occurs) and explanatory (concerned with determining the cause and effect relationships).The researcher was used both descriptive and explanatory features of study. The descriptive study allowed the researcher to describe those data and helps to know the event that was taken place, whereas explanatory study to examine the relationships between variables. According to Kothari, (2004), those two research designs may facilitate research to be as efficient as possible yielding maximum information.

3.4 Population and sample

Population

The total population of the organization is 504 and from stated population 29 were temporary employees, where as 475 were permanent.

Sample size and sampling technique

The total population of the study is 256 working under transportation, inventory, and warehouse and customer response. Since the study population is homogeneous in dealing with logistics activities, simple random sampling technique was used to select the representative sample.

Sampling

Sampling can be explained as a specific principle used to select members of population to be included in the study. It has been rightly noted that "because many populations of interest are too large to work with directly, techniques of statistical sampling have been devised to obtain samples taken from larger populations" (Proctor, 2003). 10% margin of error was used due to the homogeneity of the population. Therefore, to cope up this situation and with the minimum cost to reach in a better conclusion the researcher chooses to enlarge margin of error, 10%.The sample size is 72 respondents out of a target population of 256 from each section. This to ensure that the sampling size characteristics of representation of population using formula developed by (Mugenda and Mugenda, 2003).

$$n = \frac{N}{1 + (N * e^2)}$$

Where:

N=Population size

e=Tolerance at desired level of confidence, take 0.1 at 90% confidence level.

n=sample size

$$n = \frac{256}{1 + (256*0.1*0.1)}$$

n=72

3.5 Data sources and types

The required data for the study was collected using both primary and secondary data collection methods. The primary data was collected from the section of selected group, which was the result of questionnaires. Respondents who filled the questionnaire were a source of primary data. The secondary data was collected from different published material like report, manual, books, magazines, websites, research findings and any other concerned bodies was used to extract any sort of essential information to strengthen the study findings**.**

3.6 Data collection procedures

In order to obtain relevant and adequate information the researcher was used the questionnaire as instruments of data collection. The questionnaire consist both open ended and close ended questionnaire. Closed ended questions which are one where responses are restricted to small set of responses that generate precise answers to develop the study and open ended used to give freedom for respondents. In designing the questionnaire, a five point likert-type scale was used to provide the extent of the respondent's feelings or opinions on the effect of logistics activities on organizational performance.

3.7 Ethical consideration

In order to build honesty in the mind of respondents it was necessary to give full information about the purpose of the study and the researcher's status and role. The respondents were assured that the information provided by them is confidential and used exclusively for academic purpose. In addition, respondents were informed not to include any identity detail and personal reference in the questionnaire. This minimized the biasedness of the response collected from the respondents. In addition, the different research studies, articles and text books used as a reference in the study are exhaustively cited. Such action helped the respondents to avoid deception and not to cause harm of any body by any action of the study.

3.8 Data analysis

For the analysis of the study the researcher was used descriptive statistics and inferential statistics with aid of SPSS software .Generally, in order to display the collected data in a concise and meaningful way data presentation and interpretation was made using percentage,

mean and standard deviation in table form. SPSS statistics software version 20 is used to process the data.

Descriptive statistical Analysis

The final report of the relevant demographic profile was produced through central tendency measurements (frequency and frequency distribution, valid & cumulative percentage and comparison of mean). In addition, tabular explanations are used to present the result with the help of SPSS.

Inferential statistical Analysis

In inferential statistical analysis, correlation and multiple linear regression methods were utilized using statistical package for social sciences (SPSS) software.

Correlation

Correlation is used to describe the strength and direction of relationship between two variables. Since all variables are measured as an interval level, Pearson product moment correlation was used. Correlation output always lies between -1.0 and +1.0 and if "r" is positive, there exists a positive relationship between the variables. If it's negative, the relationship between the variables is negative.

Multiple Regression Analysis

Multiple regression analysis refers about finding a relationship between variables and forming a model. The Model for this study was developed using four logistics activities or predictors which have effect on organizational performance.

$$Y = \beta 0 + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta \text{ x4} + \varepsilon$$

Where Y is the dependent variable and the independent variables are those which explain the response ranges from X1 to X4

3.9 Validity and Reliability Test

3.9.1Validity Test

The scientific soundness of a research finding is determined by the validity of the instruments used. All possible efforts were exerted to make the data collection instruments easily understandable by the respondents so that the intended information can be collected thereby

increasing trustworthiness of the ultimate findings. After the questionnaire was constructed, pre-testing was done with individuals who have knowledge of the area by allowing them to read and comment on it

3.9.2 Assessing Reliability

Validity is the most critical criterion and indicates the degree to which an instrument measures what it is supposed to measure while reliability has to do with the accuracy and precision of a measurement procedure. As multiple items in all constructs were used, the reliabilities of logistics activities and organizational performance were assessed with Cronbach‟s Alpha and the reliability values for all constructs are confirmed as greater than 0.7, which are considered ideal (Pallant, 2005). The Cronbach‘s alpha for transport management, inventory management, warehouse management and customer response variables were 0.782, 0.771, 0.704, and 0.750 respectively implying that the items in the construct are indicative of the same underlying disposition. The following table shows the summary of reliabilities of all constructs.

Table 3.1Reliability Test of Variable's Using Cronbach's Alpha

	Variables Name	**Cronbach's Alpha**	No. of Item
1	Transportation management	.789	5
2	Inventory management	.771	5
3	Warehouse management	.704	5
4	Customer response	.750	6
5	Organizational performance	.750	5
6	Overall	.877	26

Source: Respondents survey result test, 2018

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 INTRODUCTION

In this chapter, the data collected using questioner was analyzed and presented based on the objectives of the study set above. The data was found to be important to explain the effect of logistics activities on organizational performance case study on modjo dry port. Descriptive and inferential statistics were used to analyze and interpret the results of the study. The questionnaires were developed in five scales ranging from five to one: where 5 represents strongly agree, 4 agree, 3 Neutral, 2 disagree, and 1 strongly disagrees. In order to assess the relationship between Logistics activities and organizational performance, Correlation and regression analysis were conducted for scale typed questionnaire. A total of 72 questionnaires were distributed to employees and 69 (95.8%) questionnaire were obtained valid and used for analysis. The collected data were presented and analyzed by helping SPSS version 20 statistical software. The study used correlation analysis, specifically Pearson correlation to measure the degree of association between different variables under consideration. Regression Analysis was also used to test the effect of independent variable on dependent variable.

4.2 Demographic information of the respondents

In the following table, the demographic information of respondents is presented. These include Gender of respondents, age, educational level and experience of respondents. To get information on these issues the respondents were asked and their responses are analyzed as follows. The results of this survey processed with the help of SPSS software.

Table 4.1: Gender of Respondents

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	53	76.8	76.8	76.8
	Female	16	23.2	23.2	100.0
	Total	69	100.0	100.0	

Source: SPSS output of survey, 2018

Gender information of sampled respondents, 76.8 of sampled respondents were male and 23.2 were female. This indicates majority of employee of modjo dry port were male.

Table 4.2: Age of respondents

Age					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	lessthan20	6	8.7	8.7	8.7
	20-29	20	29.0	29.0	37.7
	30-39	29	42.0	42.0	79.7
	40-49	14	20.3	20.3	100.0
	Total	69	100.0	100.0	

Source: SPSS output of survey, 2018

Regarding the age group of the respondents, the larger portion of the respondents that is 29(42%) falls within the age group of 30-39, 20 respondents (29%) falls within the age group of 20-29, 14respondents (20.3) falls within 40-49 and the remaining 6 respondents (8.7) of age group less than 20. From this the researcher conclude that 49(71%) modjo dry is filled with most actively working age group that can be able to transform the mission and vision of modjo dry port into reality.

Table 4.3: Educational level of respondents

Educational level					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Certificate	14	20.3	20.3	20.3
	Diploma	31	44.9	44.9	65.2
	Degree	20	29.0	29.0	94.2
	Masters	4	5.8	5.8	100.0
	Total	69	100.0	100.0	

Source: SPSS output of survey, 2018

Educational Level: 31 respondents (44.9) have diploma level of education, 20 respondents (29%) have Degree (MSc/MA Degree), 14 respondents (20.3%) are certificate holders and the remaining 4 respondents (5.8) have master's degree. From the educational background of respondents, 51 respondents (73.9%) are diploma and 1stdegree holders. 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.

Table4.4: Work experience of respondents

Work experience					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-5	36	52.2	52.2	52.2
	6-10	26	37.7	37.7	89.9
	above10	7	10.1	10.1	100.0
	Total	69	100.0	100.0	

source: SPSS output survey,2018

Work Experience: From the total respondents, 36 respondents (52.2%) fall at a work experience of 1-5 years, 26 respondents (37.7 %) fall at a work experience level of 6-10 years and the remaining respondents (10.1%) were greater than above years. From this it can be concluded that the majority of respondents, 62 respondents (89.9%) fall at a work experience 1-10 years. This implies the fact that most of the respondents have sufficient knowledge and experience about their organization.

4.3 Descriptive analysis

4.3.1 Response on logistics activities and organizational performance

Mesfin (2016) used a kind of rule of thumb to create equal intervals for a range of five points Likert scale (that ranges from strongly disagree to strongly agree in the survey questionnaire). A calculated mean value that ranges from 1 to 1.80 implies strong disagreement, a mean range from 1.81 to 2.6, from 2.61 to 3.4, from 3.41 to 4.2 and from 4.21 to 5.00 represented respondents' perceptions of somewhat disagree, neutral, somewhat agree and strongly agree

respectively. The 0.8 served as a boundary for each elements of the measurement in the questionnaire. Accordingly, the 0.8 was a result found by dividing the difference between the maximum (5) and minimum (1) scores to the maximum score (5) of the questionnaire. In the process of examining of the data, standard deviation was used. Small standard deviations (relative to the value of the mean itself) indicate that data are close to the mean whereas a large standard deviation (relative to the mean) indicates that the data points are distant from the Mean. Standard deviation is a measure of how well the mean represents the data ((Field, 2009).

4.3.2 Mean and st. deviation of responses on transportation management.

Table 4.5: Descriptive Statistics of Transportation management

Transportation Management	N	Mean	Std. Dev
Transport management has a role in achieving faster delivery service	69	3.84	.918
Transport management ensure the customer satisfaction	69	3.58	1.181
Transport management has a role in achieving efficiency in our organization	69	4.29	.621
Transport management has a position in maximizing a profit	69	4.28	.684
Transport management sometimes used as storage to utilizing warehouse cost	69	4.06	.922

Source: SPSS output survey of, 2018

The mean for Transport management has a role in achieving efficiency in organization well represent the data so as the SD was the lowest (.621) followed by T transportation management has a position in maximizing a profit (.684). The Std. Deviation for Transport management sometimes used as storage to utilizing warehouse cost also low. On the other hand, the mean for TM has a role in achieving service delivery and ensure customer satisfaction were 3.84 and 3.58 respectively. Their SD was large in comparison with the rest of the above stated three

factors. Generally based on the findings on Table 4.5, all five questions asked under Transportation management scores a mean greater than 3.5, which imply the respondents agreed to the fact that Transportation activities are in their respective organization.

4.3.3 Mean and st. deviation of responses on inventory management

Table 4.6: Descriptive Statistics of inventory management

Inventory management	N	Mean	Std. dev
Inventory management contributes for prompt service to customer	69	3.57	.882
Proper inventory management improves customer service	69	3.68	.813
Inventory management has a significant role on organizational productivity	69	3.59	.944
Proper management of inventory contributes for profitability of our organization	69	3.71	.876
Inventory management has a significantly enhance customer service.	69	3.57	1.050

Source: SPSS output survey, 2018

The mean for proper Inventory management of inventory contributes for profitability of organization has a role in achieving efficiency in organization highly represent the data so as the SD was the lowest (.876) followed by proper inventory management improves customer service (.813). On the third level inventory management has a significant role on organizational productivity scores a mean 3.59 and SD .944. On the other hand, the mean for IM has significantly enhanced customer service and contributes for prompt service were scores 3.57 and 3.57 respectively. Their SD was large in comparison with the rest of the above stated three factors. Generally based on the findings on Table 4.6: all five questions asked under inventory management scores a mean greater than 3.5, which imply the respondents agreed to the fact that inventory activities has an effect on organizational performance.

4.3.4 Mean and st.deviation of responses on warehouse management

Table 4.7: Descriptive Statistics of Warehouse management

Warehouse management	N	Mean	Std. Dev
Warehouse has a effect on reducing operational cost of organization	69	4.01	.962
Warehouse management play a major role in customer satisfaction	69	4.14	.827
Accurate identification of all storage location has effect on growth	69	4.30	.602
Storing goods according to recommended guidelines	69	4.29	.621
Storage space optimization	69	4.28	.684

Source: SPSSoutput survey, 2018

The mean and std. Deviation for Accurate identification of all storage location has effect on growth scores 4.30 and .602 respectively, followed by Storing goods according to recommended guidelines and Storage space optimization. Based on the finding on Table 4.7 all five questions asked under Warehouse management scores a mean greater than 4, which implies the respondents agreed to the fact that warehouse practices are exercise in their organization. However the result of open ended questionnaire indicated that the organization not used computerized warehouse management system.

4.3.5 Mean and st.deviation response on customer response

Table 4.8: descriptive statistics of customer response

Customer Response	N	Mean	Std.Dev
Responding quickly to the customers' needs	69	3.46	.901
Fulfilling customers orders in the promised date	69	3.64	.874
Sharing information with customers when required	69	3.64	.907
Creating long-term relationship with your customers	69	3.35	1.082
Measuring and evaluating customer satisfaction level	69	3.35	1.041
Accepting the customer comments	69	3.51	.797

Source:SPSSoutput survey, 2018

The mean for fulfilling customers orders in the promised date and sharing information with customers when required scores 3.64, which highly represent the data. Their SD was lower than the rest asked question (.874 and .907) followed by accepting the customer comments.

4.3.6 Mean and St. Deviation of Responses on organization performance

Table: 4.9Descriptive Statistics of organizational performance

Organizational performance	N	Mean	Std. Dev
Profitability growth	69	3.41	.960
Return on investment	69	3.64	.891
Return on asset growth	69	3.59	1.005
Provision of prompt service to customers	69	3.84	.918
Decrease customer complaints	69	3.58	1.181

Source: SPSS output survey,2018

The mean for profitability of organization scores 3.41, which means the respondents agree with idea as the SD was the lowest. Returns on investment well represent the data as followed by return on asset. On the hand under customer satisfaction provision of prompt service to customers represent the data well, (M= 3.84 and SD=0.918 as followed by decrease customer complaints.

4.4 correlation analysis

Correlations are the measure of the linear relationship between two variables. 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. As described by (Pallant 2005), the correlation is a commonly used measure of the size of an effect: values of ± 0.1

represent a small effect, ± 0.3 is a medium effect and ± 0.5 is a large effect. In this section, correlation analysis conducted in the light of each research objectives developed.

Table4.10: correlation matrix between logistics activities and organizational performance

	Correlations						
S.no			TM	IM	WM	CR	OP
1	Transportation management	Pearson Correlation	1	.103	.796**	.472**	.760**
		Sig. (1-tailed)		.200	.000	.000	.000
		N	69	69	69	69	69
2	Inventory management	Pearson Correlation	.103	1	.035	.134	.310**
		Sig. (1-tailed)	.200		.389	.136	.005
		N	69	69	69	69	69
3	Warehouse management	Pearson Correlation	.796**	.035	1	.343**	.410**
		Sig. (1-tailed)	.000	.389		.002	.000
		N	69	69	69	69	69
4	Customer Response	Pearson Correlation	.472**	.134	.343**	1	.409**
		Sig. (1-tailed)	.000	.136	.002		.000
		N	69	69	69	69	69
5	Organizational performance	Pearson Correlation	.760**	.310**	.410**	.409**	1
		Sig. (1-tailed)	.000	.005	.000	.000	
		N	69	69	69	69	69

**. Correlation is significant at the 0.01 level (1-tailed).

Source: SPSS output survey of, 2018

Based on the survey result, the correlation between Transportation management and organizational Performance is positive and they are significantly correlated at (R = .760**), (P< 0.01). According to Mac Eachron (1982) magnitude of correlation, the relationship between the two variables is strong relationship. It supports the findings of (Tsen, Yue & Taylor, 2005) that transport management was the most important economic activity among the components of business logistics system and do effect organizational performance. Therefore, Transportation management and Organizational performance are genuinely correlated.

Based on the survey result, the correlation between inventory management and organizational performance positive and they are significantly correlated at (R = .310**), (P< 0.01), which is weak positive relationship. This finding are in agreement with the study done by (Stevenson, 2009) that inventories is a vital part of business, as they are necessary for operations and they also contributed to customer satisfaction. Inventory management thus impacts positively on the overall performance of the organization (Christopher, 2010) improves lead time and increases profitability of a organization by minimizing waste throughout transformation process thus impacting significantly on the performance of organization.

In the same way, moderate and statistically significant positive correlation is found between warehouse management and organizational performance with (R =.410**), (P< 0.01). Therefore, Warehouse management and Organizational performance are moderately correlated. Finally, the correlation between customer response and organizational performance is positive and they are significantly correlated at (R =.409**), (P< 0.01). According to MacEachron (1982) magnitude of correlation, the relationship between the two variables is moderate.

4.5 Multiple linear regression analysis

Before running multiple linear regression analysis, the researcher has conducted basic assumption tests for the model. These are normality of the distribution, multicolliniearty tests. Each test is explained below.

Assumption 1 - Normality Distribution Test

Multiple regressions require the independent variables to be normally distributed. Skewness and kurtosis are statistical tools which can enable to check if the data is normally distributed or

not. According to Smith and Wells (2006), kurtosis is defined as "property of a distribution that describes the thickness of the tails. The thickness of the tail comes from the amount of scores falling at the extremes relative to the Gaussian/normal distribution". Skewness is a measure of symmetry. A distribution or data set is symmetric if it looks the same to the left and right of the center point. The skewness and kurtosis test results of the data is within the acceptable range (-1.0 to +1.0) and it can be concluded that the data is normally distributed. So the result of kurtosis skewness exist between -1.0 to +1.0 which acceptable and error term for each variable constant. The kurtosis and skewness results are shown in annex B

Assumption 2 - Multicollinearity Test

Multicollinearity refers to the situation in which the independent/predictor variables are highly correlated. When independent variables are multicollinear, there is "overlap" or sharing of predictive power. This may lead to the paradoxical effect, whereby the regression model fits the data well, but none of the predictor variables has a significant impact in predicting the dependent variable. According to (Menard,1995) Tolerance should be more than 0.2 and VIF should be less than 10 (Myers,1990).so the result obtained confirmed this one and acceptable. Summary: The two assumptions of multiple regressions are met and the next step was processing the regression analysis to determine the values of the model summary (R and R^2), the model fit (ANOVA) and the beta coefficients. With the help of multiple linear regression analysis, model summary, ANOVA and Beta coefficient were determined and the regression model was developed. Accordingly, the relative effect of logistics activities on organizational performance was identified.

4.5.1 Model summary

Table 4.11: Regression analysis between Logistic activities and Organizational performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.851[a]	.723	.706	.382

a. Predictors: (Constant), Customer Response, Inventory management, Warehouse management, Transportation management

In the model summary table 4.11 the multiple correlation coefficients R, indicates a very strong correlation of .851 between Logistics Activities and Organizational performance. The R2 Value of .723(72.3%) Implies relative contribution of Logistics activities in interpreting the organizational performance, the remaining 27.7.3% of the changes in the change can be attributed to other factors. The adjusted R Square is .706, which implies that logistics activities can account for 70.6% of the variation in organizational performance. Although there might be many factors that can explain the variable on organizational performance, nearly 70.6% of it is explained by Logistics activities. This means that the remaining 29.4% of the variation in Organizational Performance cannot be explained by those dimensions of logistics activities

4.5.2 ANOVA Model Fit

Table 4.12: ANOVA Result between Logistics Activities and Organizational Performance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	24.415	4	6.104	41.842	.000[b]
	Residual	9.336	64	.146		
	Total	33.751	68			

a. Dependent Variable: Organizational performance

b. Predictors: (Constant), Customer Response, Inventory management, Warehouse management, Transportation management.

The regression model overall fit can be examined with the help of ANOVA. Accordingly, table 4.12 of this study shows that the value of R and R2 found from the model summary is statistically Significant at (F=41.842), (P<0.001) and it can be said that there is a relationship between Logistics activities and Organizational performance.

4.5.3 Beta coefficient

Table 4.13: Regression Coefficients between Logistics activities and Organizational Performance

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.775	.478		1.619	.110
	Transportation management	1.213	.125	1.126	9.687	.000
	Inventory management	.222	.071	.208	3.128	.003
	Warehouse management	-.693	.151	-.500	-4.590	.000
	Customer Response	.024	.084	.022	.289	.774

a. Dependent Variable: Organizational performance

Unstandardized beta coefficient (β)

As it is defined in chapter three, the unstandardized coefficients (x1 up to x4) are the coefficients of the estimated regression model. Hence, by including the error term (ε), the model for organizational performance can be written as; $y= \beta 0+ \beta 1x1+ \beta 2x2+ \beta 3x3+ \beta 4x4+\varepsilon$

Y =.775+1.213X1+.222X2-.693X3+.024x4+.382

The value of 'y'is 0.775 which means the expected value organization performance is 0.775 when all the four variables assume zero value. Among the four factors, three of them are found to be statistically significant logistics activities and significant predictors of the dependent variable which is Organizational performance. These are Transportation management, Inventory management and Warehouse management.

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CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

INTRTODUCTION

This chapter is therefore divided into four sections. Presents summary of the finding, presents conclusion and presents Recommendation and areas of further research.

5.1 Summary of findings

The study was aimed at analyzing the effect of logistics activities on organizational performance in modjo dry port. The specific objectives of the study include effects of Transportation management, effects of Inventory management, effects of Warehouse management and effects of customer response on organizational performance .The data were collected from both primary and secondary sources. The primary data were generated from employees using questionnaires, while the secondary data were collected from brochures and different reports of World Bank and International monetary fund. Descriptive statistics, correlation and regression analysis were used for analyzing the data.

- The study established out of 69 respondents most of the respondents are males and majority of the respondents are 6-10 years' work experience in the organization. Additionally respondents educational background reveals that majority of them are educated and have better experiences in the Organization.
- The first research objective of the study was to analyze the effects of Transportation management on organizational performance. From descriptive analysis it can be concluded that their mean score is greater than 3.5 meaning the respondents agree with the statements. Under correlation analysis the result from the study shows that there is significantly strong correlation between Transportation management and organizational Performance, with correlation coefficient of 0.760 (r=0.760) with significance value less than 0.01.The output from regression analysis indicated that it is one of the strong predictors of the dependent variable which is organizational performance with beta coefficient of 1.213 at significance level .000.
- The second Objective of the study was to explore the effect of Inventory management on organizational performance. Accordingly, from the descriptive analysis, it can be

concluded that their mean score is greater than 3.5 meaning agree with the statement and under correlation analysis showed a moderate correlation between inventory management and organizational performance with correlation coefficient of 0.310 (r=0.3100) with significance value 0.01 and it is statistically significant predictor of organizational performance with beta coefficient of .222 at significance level of .003.

- The third research objective of the study was to examine the effects of Warehouse management on organizational performance. From descriptive analysis it can be concluded that their mean score is greater than 3.5 meaning the respondents agree with the idea. Under correlation analysis the result from the study shows that there is significantly moderate correlation between Warehouse management and organizational Performance, with correlation coefficient of 0.410 (r=0.410) with significance value less than 0.01 and statistically significant predictor of organizational performance since at significance level of .000,but it has a negative effect organizational performance.
- The fourth research objective of the study was to assess the effects of customer response on organizational performance under descriptive analysis mean scores greater than 3.5, except two questions asked under customer response scored less than 3.5, which imply the respondents agreed to the idea raised under each variable. From correlation analysis revealed that customer response has significant correlation with coefficient of 0.410 (r=0.409) with significance value less than 0.01.But, it is not statistically significant predictor of organizational performance since its beta coefficient is .024 at significance level of .074.
- The output from regression analysis indicated that only three Logistics activities are the relevant effect on organizational performance. These are Transportation management, Inventory management and Warehouse management. In other way, the effect of Logistics activities on organizational performance and it is answered by the regression model summery, R^2 = .723 which revealed that the model accounts for 72.3% of the variation in organizational performance is explained by the linear combination of all the independent variables of Logistics activities. The ANOVA test result showed that R and R2 found from the model summary was statistically significant at (F=41.842), P<0.001)

5.2 Conclusions

The main purpose of this study is the effects of Logistics activities on organizational performance case study on modjo dry port. Based on the findings presented in the previous section, the following conclusions are drawn

- Four logistics activities are identified from correlation analysis. These are Transportation management, Inventory management, Warehouse management and Customer response. These four variables were significant and positive relationship with organizational performance.
- Transport management was significantly and positive effect on organizational Performance.
- Transportation management and Inventory management are the most critical activities for organizational performance.
- Organizational performance is used as the dependent variables and the indications were that there is percentage of variations in performance explained by the inventory management and the coefficient for inventory management construct was significant. This implies that inventory management positive effect on organizational performance.
- Despite literature has outlined Warehouse management was a negative effect on organizational performance and customer response as one of the important activities for organizational performance, the study indicated that it is insignificant predictor of organizational performance.

5.3 Recommendations

Based on the study findings, the following recommendations are given under the study specific objectives:

The study it was established that transport management positively predicts the performance of Organizational performance; (P=0.00 with an explanatory power of 76 percent. Therefore, the study recommends that managers and all concerned body of modjo dry port should incorporate transport management in their operations and decision making process in order to increase customer satisfaction and profit thereby impacting positively on their performance.

This study established a significant positive relationship between inventory management and Organizational performance, *(P=0.001)* with an explanatory power of 31 percent P=0.001). The study therefore recommends the inclusion of inventory management in the strategic plans of organizational performance. Inventory management as evidenced in this study being capable to improves customer service, this impacting positively on both financial and none financial performance of organization.

Warehouse management involves all aspects of receiving, order picking, packaging, sorting, and consolidation with capability of impacting negatively on organizational performance. This study established that warehouse management statistically and significantly negatively effects the performance of organization; $p < 0.01$ (P=.000) with an explanatory power of 41 percent. It is therefore recommended in this study that manages and concerned body of modjo dry port should impress warehouse management in strategic plan order to increase customer satisfaction. So the organization should use computerized warehouse management to overcome that negative effects.

The study found that, a significant positive relationship between customer response and organizational performance. The study recommends that the port authority of modjo dry port should know that the customer response has an insignificant on their organization.

5.4. Areas of further research

Apart from addressing the limitations listed in the previous section, future research possibilities based on the findings from this study are interesting and exciting. Possible future research paths concentrate on theoretical issues, investigation of new conceptual questions, and the execution of new empirical studies to improve upon the conclusions of the findings. Additional variables in the model could be explained through the insertion of other variables. Due to global supply chain management trends, over time, some new issues effects of logistics activities on Organizational performance are likely to appear and there is need to be able to identify when that happens, especially barriers and learn how to deal with them. This can only be possible when there is continuation of research on logistics activities.

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APPENDIX I Questionnaire

ADDIS ABABA UNIVERSITY

SCHOOL OF COMMERCE

Name of student: Girma Kumsa

Dear Respondents

The purpose of this questionnaire is to collect primary data for conducting a study on the topic. **The effect of Logistics activities on organizational performance**, as partial fulfillment to the completion of the masters of Art in Logistics and Supply Chain Management at Addis Ababa University School of Commerce. In this regard I kindly request your time to provide me with reliable information so that the findings of this study will meet the intended outcome. I strongly assure you for the confidential treatment of your answers. I would like to thank your voluntary participation for the success of my research study.

Instructions

1. Please, answer all questions,
2. In all cases where answer options are available, tick (√) inside the given box
3. For the open questions, write your answers in the space provided.

Section A- Respondent's profiles

Please indicate your appropriate choice among the options provided by circling the alphabet that best represents you.

1. **Gender**

   A. Male **B.** Female

2. **Age**

A. Less than 20 **B.** 20-29 **C**. 30-39 **D**. 40- 49 **E**. 50 and above 3

3. **Educational level**

A. Certificate **B**. college diploma **C.** First degree **D** .second degree **E**. above

4. **Work experience in the organization**

A. 1-5 year **B**. 6 - 10 years **C**.10 -15 years **D**. above 15 years

Section B –Questionnaires related to Logistics Activities

Please read each statement carefully and show the extent of your agreement on the statements by puttinga tick mark (√) in the boxes against each rating scale of choice. Indicate to what extent their effect in your organization. The rating represents your level of agreement as follows: **5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree**

The effect of Transportation		1	2	3	4	5
1	Transport management has a role in achieving faster delivery service					
2	Transport management ensure the customer satisfaction					
3	Transport management has a role in achieving efficiency in our organization					
4	Transport has a position in maximizing a profit					
5	Transportation management sometimes used as storage to utilizing warehouse cost.					

Please you are kindly requested to write your response as much as possible to the following open ended question. Is any other effect of transportation management in your organization? List down them……
……

Please read each statement carefully and show the extent of your agreement on the statements by puttinga tick mark (√) in the boxes against each rating scale of choice. Indicate to what extent their effect in your organization. The rating represents your level of agreement as follows: **5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree**

	Inventory management	**1**	2	3	4	5
1	Inventory management contributes for prompt service to customer					
2	Proper inventory management improves customer service					
3	Inventory management has a significant role on organizational productivity					
4	Proper management of inventory contributes for profitability of our organization					
5	Inventory management has a significantly enhance customer service.					

Please you are kindly requested to write your response as much as possible to the following open ended question. Could you provide any suggestions the effect inventory management in your organization?

……
……

Please read each statement carefully and show the extent of your agreement on the statements by puttinga tick mark (√) in the boxes against each rating scale of choice. Indicate to what extent their effect in your organization. The rating represents your level of agreement as follows: **5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree**

	Warehouse management	**1**	2	3	4	5
1	Warehouse has a effect on reducing operational cost of organization					
2	Warehouse management play a major role in customer satisfaction					
3	Accurate identification of all storage location					
4	Storing goods according to recommended guidelines					
5	Storage space optimization					

Please you are kindly requested to write your response as much as possible to the following open ended question. What do you thinks the effects of warehouse on your organizational performance?.....
.....

Please read each statement carefully and show the extent of your agreement on the statements by puttinga tick mark (√) in the boxes against each rating scale of choice. Indicate to what extent their effect in your organization. The rating represents your level of agreement as follows: **5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree**

Customer response	**1**	2	3	4	5
Responding quickly to the customers' needs					
Fulfilling customers orders in the promised date					
Sharing information with customers when required					
Creating long-term relationship with your customers					
Measuring and evaluating customer satisfaction level.					
Accepting the customer comments					

Section three: organizational performance

Regarding organizational performance, please thick appropriates box which best indicate your organization overall performance. The item scales are five-point Likert scales with 1 = Significant Decrease, 2 = Decrease, 3= same as before, 4=Increase, 5=Significant increase

Organizational performance	**1**	2	3	4	5
Profitability growth					
Return on investment					
Return on asset growth					
Provision of prompt service to customers					
Decrease customer complaints					

Thank you

Appendix II: Regression Model assumption Tests

1. Normality Distribution test

Descriptive Statistics

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Transportation management	69	-.269	.289	.137	.570
Inventory management	69	-.593	.289	.012	.570
Warehouse management	69	-.260	.289	-.134	.570
Customer Response	69	-.293	.289	-.091	.570
Organizational performance	69 69	-.625	.289	.021	.570

Source: survey output, 2018

2.**Multicollinearity Test**

Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	Transportation management	.320	3.126
	Inventory management	.975	1.026
	Warehouse management	.364	2.749
	Customer Response	.768	1.303

a. Dependent Variable: Organizational performance

source: survey output,2018