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SCHOOL OF COMMERCE
LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Assessment of Pharmaceutical Logistics Performance the Case of Ethiopian
Pharmaceutical Manufacturing Share Company

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A Thesis submitted to the School of Commerce of Addis Ababa
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Declaration

I, the undersigned, hereby declare that this thesis is my original and has not been presented for a Degree program in this or any other university and all sources or materials used for the thesis are duly acknowledged.

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CERTIFICATE

This is to certify that this thesis is prepared by Ezedin Halawi - a student of Master of Business Logistics and Supply chain Program had been working under my supervision and guidance for his research entitled: Assessment of pharmaceutical logistics performance the case of Ethiopian pharmaceutical manufacturing share company. This work is original in nature and it is sufficient for submission to the partial fulfillment for the award of masters of Arts degree in logistics and supply chain management.

Advisory: Busha Temesgen (PhD)

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List of Acronyms

ACR	Asset carrying rate
CSP	Customer service policy
EDI	Electronic data interchange
EVA	Economic value added
EPHARM	Ethiopian pharmaceutical manufacturing sh.com
FTEs	Full-time equivalents
ITT	In transit time
LAV	Logistics Asset Value
LE	Logistics Expenses
LWFP	Logistics workforce productivity
OE	Order Entry
OP	Order Processing
OET	Order entry time
OPT	Order processing time
POCT	purchase order cycle time
POP	Perfect Order Percentage
TAC	Total acquisition cost
SSP	Supplier Service Policy
TIC	Total inventory costs
TLC	Total logistics costs
TLCT	The total logistics cycle time
TOS	Total orders shipped
TRC	Total response cost
TSC	Total supply costs

TTC	Total transportation costs and
TWC	Total warehousing costs
USAID	United States Agency for International Development
WHO	World health organization
WOCT	Warehouse order cycle time

Abstract

Logistics is part of the supply chain that plans, actualizes, and controls the practical, compelling stream and capacity of stock, organizations, and related data between the point of root and the point of utilization in organize to meet customers' prerequisites. 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. Logistics is as old as organized warfare and, like war itself, has evolved considerably over time. Some changes, such as the introduction of new methods of transportation or new ways of obtaining supplies, have influenced logistics directly. Other changes have been indirect, the byproducts of the use of new techniques and weapons. The study aimed to assess the logistics performance of the Ethiopian pharmaceutical manufacturing share company (EPHARM) which is a pioneer in the pharmaceutical manufacturing industry in Ethiopia.). Quantitative type's research approach used to answer the research question. Descriptive study design and analysis was used in this study. Due to the small target population (56), it was decided to employ a census technique to gain insight on logistics performances. To achieve the objectives of this study the researcher employed secondary data sources. After the data was checked it was coded, entered and analyzed by using IBM Statistical Package for the Social Sciences (SPSS) version 20. The study shows that the customers' response rate, the inventory and planning management, transportation, and supply management were inefficiently practiced. However the numbers of warehouses were enough to allow sufficient space, time utility and to accommodate the materials in proper and safe way. Finally the study recommended that the company should give due attention in properly implementing logistics activities for efficient delivery service, better inventory management and better supply of materials.

Key words: Logistics, Logistics management, Performance

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

According to James, 1994 logistics is the craftsmanship of managing the supply chain and science of directing and controlling the stream of items, information and other resources like essentialness and people from the point of starting to the point of utilization in order to meet customers' necessities. It incorporates the integration of information, transportation, stock, warehousing, texture managing with and bundling (Frazelle, 2002).

The council of logistics management defines logistics as follows: logistics is parcel of the supply chain handle that plans, actualizes, and controls the practical, compelling stream and capacity of stock, organizations, and related data between the point of root and the point of utilization in organize to meet customers' prerequisites (Michigun, 2002). Medical logistics is the coordination of pharmaceuticals, therapeutic and surgical supplies, restorative gadgets and gear, and other items required to helps specialists, medical caretakers, and other wellbeing and dental care items (Wisner et al, 2012).

Supply chain administration (SCM) is the strategy of organizing, actualizing, and controlling the operations of the supply chain as capably as conceivable. Supply Chain Administration ranges all improvement and capacity of unrefined materials, work-in handle stock, and wrapped up stock from point-of-origin to point of utilization (James, 1994).

Supply chain management encompasses the organizing and organization of all works out included in sourcing and obtainment and collaboration with channel assistants, which can be suppliers middle partners, third party benefit suppliers, and clients. In substance, supply chain administration coordinating supply and request administration inside over companies (Usaid /deliver project, 2011).

Performance measures play a fundamental work within organization and are of particular task to logistics managers. Performance estimation is considered as a road for logistics mangers to get economical forceful pickup by utilizing presenting timely, true marker of each execution successes and deficiencies. Researches in the area of logistics performance size help this

necessary role of performance measures, and, furthermore, has concluded that success in the performance of logistics things to do and abilities is linked to accelerated organizational overall performance(Fugate et. al, 2010).

The noteworthiness and complexity of logistics overall performance size has caused the improvement of several performance dimension frameworks and fashions by way of scholars. One such demonstrate created by (Fugate et.al, 2010), reflects the interdependency of logistics execution, viability, and separation inside logistics execution and in general organizational generally execution.

Investigate over a period of a long time recommends that useful measures of logistics performance can be classified into these categories: cost, client benefit, quality, productivity, and resource administration. Gives an diagram of estimations related to each of these five zones of concern(Michigun, 2002).

Performance measures play an imperative part within the administration of any organization; they are specific esteem to logistics directors (Griffis et.al, 2007). Execution estimation is seen as an road for logistics troughs to realize viable competitive advantage (Gunasekaran and Kobu, 2007) by giving lucky, tried and true signs of both execution triumphs and insufficiencies (Griffis et.al, 2004). Inquire about within the range of logistics execution estimation underpins this crucial part of execution measures. Thus victory within the execution of logistics exercises and capabilities is connected to move forward organizational execution (Fugate et.al, 2010).

Logistics have parts within the positioning of assets at the proper time, at the correct put at the proper taken a toll and at the correct quality. Logistics is concerned with the proficient exchange of merchandise from the source of supply through the put of fabricate to the point of utilization in a cost-effective way whereas giving a satisfactory benefit to the client (Alan Rushton, 2014).

Proficiency of logistics and supply chain operations can be source of particular competitive advantage for an organization. The essential objective of supply chain administration is to optimize execution of the chain to include as esteem as conceivable for the slightest cost possible. Logistics have parts within the positioning of assets at the proper time, at the correct put at the correct taken a toll and at the proper quality. Logistics is concerned with the proficient exchange of products from the source of supply through the put of fabricate to the point of

utilization in a cost-effective way whereas giving an satisfactory benefit to the customer (Alan Rushton, 2014).

1.2 Back ground of Ethiopian Pharmaceuticals Manufacturing Share Company

Ethiopian Pharmaceuticals Manufacturing Sh. Co. (EPHARM) is a pioneer in the pharmaceutical manufacturing industry of Ethiopia. This is established in 1960. In 1964 The Company started production on June 1964 as Ethiopian drug Manufacturing Shack. After two years of operation the Company reported significant loss and had even been closed for nine months. In 1967 The Government decided to buy 50% share of the British company and lured General Manager from Hungary. In 2014 in line with the government's program to privatize public enterprise, MEDTECH Ethiopia, the major customer of EPHARM by then, bought the factory in September 2014. Since then, it has been working aggressively to transform the factory to a higher level and make it competent than it was ever before (<https://www.epharmsc.com/>).

1.3 Statement of the Problem

Even in spite of the fact that Nations made a guarantee to guarantee accessibility of basic drugs in open wellbeing offices, stock out of fundamental medications still proceed to be unsolved issue in numerous creating nations in common and particularly in Africa (Oxfam, 2012).

Indeed in spite of the fact that logistics is getting increasingly consideration, the investigator on logistics performance estimation frameworks is exceptionally restricted. In display competitive worldwide commercial center, the weight on organizations to discover better approaches to form esteem and provide it to their clients develops ever more grounded. The expanding require for industry to compete with its items in a worldwide advertise, over taken a toll, quality and benefit measurements, has given rise to broadly oversee organizations logistics exercises (Lord Kelvin, 1996).

The taken a toll of worldwide logistics at display showcase esteem worth's around \$3.7 trillion. In 2009, the share of logistics showcase taken a toll was 9.3% of world GDP (Bastas and Liyanage, 2018). The records demonstrate that logistics performs a fundamental part in worldwide monetary framework improvement.

Companies got to recognize more the significance of drivers of key future execution as spoken to by the markers inside the internal process point of view and the learning and development

viewpoint. Because it is, it would show up that non-financial drivers of development markers are recognized as critical; they are regularly eclipsed by the budgetary markers (Kurien 2009).

The logistics challenge is that affiliations must be continuously responsive, with noteworthy levels of versatility in movement. The complement got to be on strategies and execution as contradicted to on capacities and advantage. The forceful battleground will be within the areas of esteem, benefit, speed and improvement. Advance towards execution significance will be made a difference exceptionally by vital and incorporated estimation structures and models (Christopher (1994). It has been pronounced that once you can measure what you're talking around, and communicates it in numbers; you may know something around it (Ruler Kelvin, 1996)

Understanding the significance of execution estimation in logistics, a few gigantic advertise players are endeavoring to be extra conservative by speculation colossal assets in most recent cash however as non-financial instruments. Perception the accessibility chain execution mensuration may deliver a firm competitive edge over the others. (Kurien 2009) has done a study that focus on execution mensuration hones in give chain administration. (Gunasekaran et al., 2006) contend that everybody members inside the give chain need to be concerned and committed to common objectives, like client fulfillment all through the accessibility chain and expanded battle.

Due to the big share of logistics costs from the overall generation costs, those companies involved within the generation companies are planning to make logistics exercises more viable and effective. Huge companies have third accomplices (forwarders) make it. The share of dispersion and generation logistics isn't right. Within the case of quality the address is how and not where. In arrange to outlive in a profoundly competitive and requesting industry advertise, firms are these days required to continually make strides their logistics exhibitions (Marianne et al, 2012).

Pharmaceuticals stock shortage and stock outs are characteristics of poor pharmaceutical supply system that affects many developing countries as they suffer lack of financial resources, infrastructure, capacity and competencies (Marianne et al, 2012). Stock shortages and stock outs of pharmaceuticals are among salient features of a poorly performing pharmaceutical logistics system. Assessment of the logistics performance provides

information for targeted interventions in strengthening the system (Ministry of Health and Social Welfare, 2008). Currently Ethiopia face a great challenge in shortage of medicine both those produced locally and imported.

Despite these problems, the performance logistics in the pharmaceutical manufacturing company were not known. Therefore, under researcher's knowledge this study aimed to assess the pharmaceutical logistics system performance of EPHARM. It produces different pharmaceutical products which are used to manage different health related problems. Thus it is vital to examine the logistics performance of pharmaceutical manufacturer and hence take appropriate interventions for achieving the company goals and objectives.

1.4 Research questions

The study tried to address the following questions.

- How was the performance of customer response management in case of Ethiopian pharmaceutical manufacturing S. Co?
- How was the performance of the inventory planning and management?
- How was the performance of warehouse management?
- How was the performance of transportation management?
- How was the performance of the supply management practiced?

1.5 Research Objectives

1.5.1 General objectives

The main objective of the study is to assess the pharmaceutical logistics performance of Ethiopian pharmaceutical manufacturing S. Co.

1.5.2 Specific objectives

1. To assess the performance of customer response management in case of Ethiopian pharmaceutical manufacturing sh.co
2. To assess the performance of inventory planning and management
3. To assess the performance of Warehouse management
4. To assess the performance of transportation management

5. To assess the performance of supply management

1.6 Significance of the Study

The findings of this study will benefit the company in understanding its logistics practices and provides a ground for the company to reduce its internal and external costs that could be resulted due to poor logistics practices. It will therefore make it possible for management to know the areas within the logistics that require improvement for higher profit margins. Logistics is a fast growing field and the findings of this study will go a long way in informing logistics experts on areas that require their attention especially at their work places. Because pharmaceutical industry is a sensitive and any single mistake could lead to loss of life. The study will also benefit many stakeholders since it will inform the policy makers on the areas of the logistics that require policy interventions for the purpose of providing an efficient logistics activities.

1.7 Scope of the Study

The study was conducted in Ethiopian pharmaceutical manufacturing sh.com. In assessing logistics performance the study focus on five interdependent logistics activities these are customer response, inventory planning and management, supply, transportation means in transit time and warehousing activities. The study focus on cycle time measures of logistics performance.

1.8 Limitation of the study

Even though the logistics practices involve different activities, this research focused on the selected logistics activities, it is difficult to generalize the finding of the study to all other logistics activities. Due to COVID-19 pandemic the interview part of data collection tool was omitted, because both the responsible personnel' were not willing for the interview.

1.9 Definition of Terms

A pharmaceutical also called as medication, pharmaceutical and medicament, can be freely characterized as any chemical substance aiming for utilize within the restorative determination, remedy, treatment, or anticipation of infections (Ministry of Health and Social Welfare, 2008).

Logistics as the parcel of supply chain organization that plans, actualizes, and controls the capable, practical forward and switches stream and capacity of stock, organizations and related

information between the point of root and the point of utilization in organize to meet customers' prerequisite (Christopher, M. 1998).

Logistics Management: the parcel of Supply Chain Organization that plans, actualizes, and controls the beneficial, fruitful forward and switches stream and capacity of items; organizations and related information between the point of root and the point of utilization in organize to meet customers'" prerequisites. (Ronald H Ballou, 2004).

1.10 Organization of the Study

The study was organized in such a way that it includes introductory part, literature reviews, methodology, result, conclusion and recommendation of the study.. Chapter one incorporates, Background of the study, statement of the problem, research questions, objectives of the study, significance of the study, scope of the study and limitation of the study. Chapter two- literature review that covers the theoretical, empirical aspects of the case and conceptual frameworks, Chapter three, Description of the study area, research approach, research design, population and sample, data source and types and ethical issues are depicted under the methodology section. Chapter four- addresses the data presentation, analysis and interpretations of the findings. Chapter five, the summary of findings, conclusion and recommendation of the research are pinpointed under the last chapter.

CHAPTER TWO

RELATED LITRATURE REVIEW

2.1 Theoretical Literature Review

2.1.1 History of logistics

Logistics as a completely fundamental portion inside the advancement of human society has been completely confirmed since past times of point of reference day and as an example is that the period of 2700 before Christ which may well be thought-about a turning reason inside the advancement of providing, dealing with innovations for materials and final in any case not slightest the building frameworks that were usual construct pyramids (Hester, 2009).

Alexander the great was the primary awesome pioneer who was able to utilize these logistics capabilities in an effective way and he embraced campaigns with his troops laying the premise of the most noteworthy domain known, an realm that utilizing the military vector and having the financial control of the other four vectors, political, devout and cultural, he had accomplished the primary globalization known hence joining together Europe with Africa, with the Center East to the borders of the Distant East. The advancement of the logistics in step with the improvement of human society appears that the globalization of the request for assets it has impacted the organizing frameworks inside the company. Military and financial extension expanded the boundaries of the known world and the globalization marvels have had advancements in all sort of calculated frameworks (Hester, 2009).

In 1980s Toyota's company was created lean strategy from Toyota's generation reasoning with a center on efficiency, and the maximization of asset utilization, and was exceptionally regularly utilized as an instrument for cost rationalization balance sheet reduction. Organizationally, logistics was associated to generation and showcasing where the logistics structure connected generation with territorial and neighborhood distribution centers (Bagchi&Skjøtt-Larsen, 1995).

According to Council of Supply Chain Management Experts (CSCME) logistics is characterized as taking after. The handle of organizing, executing, and controlling procedures for the advantageous and compelling transportation and capacity of things counting organizations, and related data from the point of root to the point of utilization for the reason of altering to client

prerequisites. This definition incorporates inbound, outbound, inside, and outside movements. (CSCME Supply Chain and logistics – Terms and Glossary, 2006).

Logistics is as ancient as organized fighting and, like war itself, has advanced significantly over time. A few changes, such as the presentation of modern strategies of transportation or better approaches of getting supplies, have affected logistics straightforwardly. Other changes have been circuitous, the byproducts of the use of modern methods and weapons. Changes in fighting frequently cause momentous and unforeseen changes within the conduct of the logistics work. An understanding of the advancement of logistics gives key insights into the changes and challenges confronting logistics within the future (Lambert et.al, 2011).

2.1.2 Definition of Logistics and Logistics Management

According to (Johnson et al. 1999) Logistics is the entirety handle of materials and things moving into, though, and out of a firm. Inbound logistics covers the development of materials gotten by the providers. Material management portrays the developments of materials and components inside a firm. Physical distribution refers to the development of merchandise outwards from the conclusion of the get together line to the client. At long last, supply- chain administration could be a to some degree bigger concept than logistics, since it bargains with overseeing both the stream of materials and the connections among channel mediators from the point of origin of crude materials through to the ultimate buyer. Logistics play a key part in both smaller scale and large scale point of view. From a small scale viewpoint, logistics benefit may fulfill the customer's desires through fabulous logistics benefit arrangement and from a large scale point of view, it drives the financial advancement of a nation as result logistics is the back bone of worldwide supply chain (Bakar, et.al, 2014).

(Christopher, M 1998) define logistics as the strategy of intentionally managing the obtainment, advancement and capacity of materials, parts and wrapping up stock (and the related streams of information) through the organization and its displaying channel in such a way that current & future efficiency are maximized through the cost-effective fulfillment of orders.

Logistics is the stream of fabric, data, and cash between buyers and providers (Frazelle, 2002). Logistics as the parcel of supply chain organization that plans, executes, and controls the capable, compelling forward and alters stream and capacity of stock, organizations and related

information between the point of root and the point of utilization in order to meet customers' necessity. Logistics organization may be a coordination work, which organizes and optimizes all logistics works out, as well as planning logistics works out with other capacities checking exhibiting, bargains manufacturing, finance, and information advancement (CSCMP 2011).

Logistics exercises as the operational component of supply chain administration, counting measurement, acquirement, stock administration, transportation and armada administration, and information collection and announcing. Supply chain administration incorporates the logistics exercises also the coordination and collaboration of staff, levels, and capacities. The supply chain incorporates worldwide producers and supply and request flow, but logistics tends to center more on particular task inside a specific program wellbeing framework (Petersen et.al, 2014).

A viable supply chain contributes to progressed fetched viability in all parts of a program, and it can extend constrained assets. Reinforcing and keeping up the logistics framework is a speculation that pays off in three ways. It diminishes misfortunes due to overstock, squander, expiry, harm, pilferage, and wastefulness; it secures other major program ventures; and it maximizes the potential for taken toll recuperation. Logistics is basically arranging introduction and system that looks for to make a single arrange for the stream of items and data through a business. Logistics development passes five phases these are—workplace logistics, facility logistics, corporate logistics, supply chain logistics, and global logistics (Frazelle, 2002).

Workplace Logistics

Working logistics is the stream of texture at a single work- station. The objective of working logistics is to streamline the advancements of an individual working at a machine or along a gathering line. The benchmarks and speculation of work environment logistics were made by the creators of mechanical building working in WWII and post-WWII plant operations. A predominant title these days for work environment logistics is ergonomics.

Facility Logistics

Facility logistics is the stream of texture between workstations interior the four dividers of an office (that's, interwork station and intra- office). The office may well be a plant, terminal, dispersion center, or scattering center. Facility logistics have been more commonly implied to as

fabric taking care of. The roots of facility logistics and texture managing with are inside the mass era and gathering lines that recognized the 1950s and 1960s. In those times and without a doubt into the late 1970s, various organizations kept up material-handling workplaces.

Corporate logistics

Corporate logistics is the stream of fabric and information between the offices and shapes of an organization (interface- workstation, inter-facility, and intra-corporate). For a maker, logistics works out happen between its fabricating plants and dissemination centers; for a distributor, between its scattering centers; and for a retailer, between its movement centers and retail stores. Corporate logistics is in a few cases related with the express physical spread that was predominant inside the 1970s.

Supply Chain Logistics

Supply chain logistics is the stream of fabric, data, and cash between enterprises (interwork station, interfaculty, inter-corporate, and intra-chain).

Global Logistics

Worldwide logistics is the stream of fabric, data, and cash between nations. Worldwide logistics interfaces our suppliers' providers with our customers' clients universally. Worldwide logistics streams have expanded drastically amid the final a few a long time due to globalization within the world economy, growing utilize of exchanging coalitions, and worldwide get to Web locales for buying and offering stock. Worldwide logistics is much more complex than residential logistics, due to the variety of handoffs, players, dialects, records, monetary standards, time zones, and societies that are characteristic to universal trade.

Next-Generation Logistics

There are various speculations as to another stage of logistic advancement. Various logisticians accept that collaborative logistics, logistics models built with tireless and real-time optimization and communication between all sup- handle chains assistants will be the taking after organize of headway. Other camps inside the logistics community acknowledge the another organize of headway will be virtual logistics or fourth-party logistics, where all logistics works out and

organization will be outsourced to third-party logistics providers who are in turn managed by expert or fourth-party logistics providers acting kind of like a common brief laborer.

Logistics management includes a number of activities that support the six rights. Over the years, logisticians developed a model to illustrate the relationship between the activities in a logistics system; they call it the logistics cycle.

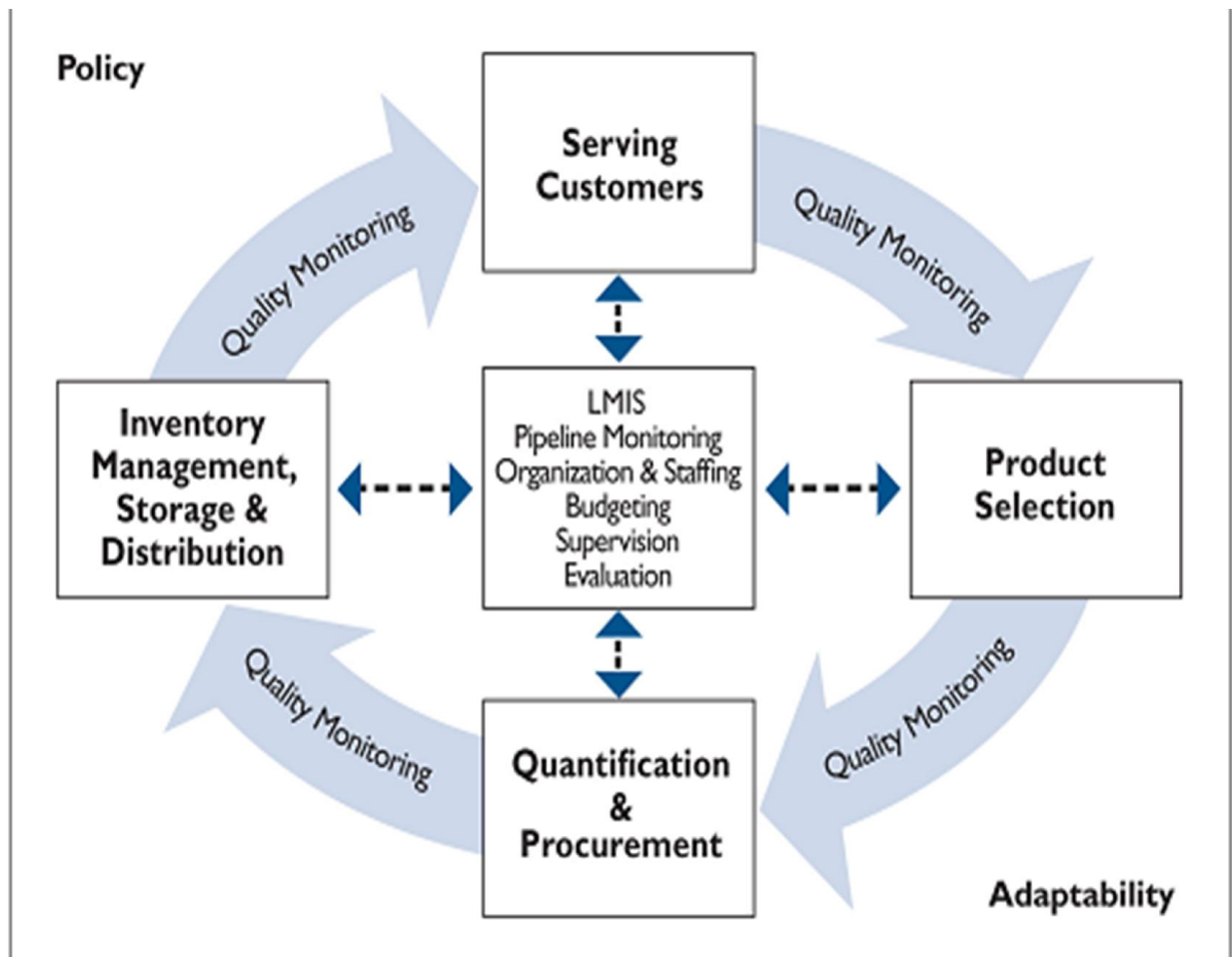


Figure 2.1 logistic cycle (Michigun, 2002)

2.1.3 Logistics Activities

The main activities involved in logistics are: customer response, inventory planning and management, supply, transportation, and warehousing(Frazelle, 2002).

1-Customer Response

The source of all logistics exercises are Client request. Satisfying client orders produces the necessity for all logistics assets and exercises. Client reaction, as well as client benefit and arrange prepare, is that the primary of the five logistics forms. Client response joins logistics remotely to the client base and inside to deals and promoting. Client reaction is optimized when the customer service policy (CSP) yielding the most reduced taken a toll of misplaced deals, stock carrying, and dissemination is distinguished and executed. The logistics of client reaction incorporates the exercises of Creating and keeping up a client benefit arrangement; Checking client fulfillment; order entry (OE); order processing (OP) and Invoicing and collections.

2-Inventory Planning and Management

Inventory is the backbone of logistics. The arranging, putting away, moving, and bookkeeping for stock is the premise for all logistics. Stock accessibility is the foremost critical viewpoint of client benefit. Stock carrying costs are ordinarily the foremost costly costs of logistics. It is exceptionally troublesome to change over physical inventory into a fluid resource, thus stock may be an exceptionally unsafe speculation. The logistics of stock arranging and administration incorporates: Estimating; Arrange amount building; Benefit level optimization; Renewal arranging; and Stock arrangement.

3-Supply management

Supply is the strategy of securing (through purchase or make) stock to fulfill the stock prerequisites made inside the stock pro orchestrate. Supply is the strategy of building stock (through creating and/or acquirement) to the targets built up in stock organizing. The objective of supply organization is to play down the total acquisition cost (TAC) though get together the openness, response time, and quality necessities stipulated inside the client advantage course of action and the stock expert organize. The logistics of supply join Making and keeping up supplier service policy (SSP); Sourcing; Supplier integration; Purchase organizes dealing with; and Buying and installment.

4-Transportation

Transportation plays a connective part among a few steps; it is the arranging of all these capacities and sub-functions into the framework of products development in arrange to play

down fetched as a result maximizes benefit to the clients that constitute the concept of trade logistics. The framework, once put in put, must be viably overseen (Reasonable and Williams 1981). Transportation in logistics framework has too a part of benefit quality. By implies of well-handled transportation framework, goods might be sent to the correct put at the correct time in arrange to fulfill customers' requests. Indicated pickup and conveyance times, unsurprising travel time and zero misfortune and harm as well as exact and convenient trade of data and invoicing are benefit related in transportation management (Yung-yu TSENG, 2005). The logistics of transportation incorporates; Organize plan and optimization, Shipment administration, Armada and holder administration, Carrier administration, and Cargo administration.

An effective transportation strategy in logistics exercises makes a difference to play down the operation fetched, upgrade benefit quality and advance logistics productivity. Transportation is the spine the operation and key components of the logistics framework. Agreeing to the examination of National Committee of Physical Conveyance Administration (NCPDM) in 1982 (Chang, 1988), the taken a toll of transportation, on normal, accounted for 6.5% of showcase income and 44% of logistics costs. So without well-developed transportation frameworks, logistics might not bring its preferences into full play. The operation of transportation decides the productivity of moving items. The advance in procedures and administration standards moves forward the moving stack, conveyance speed, benefit quality, operation costs, the utilization of offices and vitality sparing. Transportation takes a significant portion within the control of logistics.

5-Warehousing

Due to globalization, the increment in complexity of supply chain has too expanded the complexity of the parts played by a stockroom for commerce. The advancing part of distribution center has applied noteworthy impacts on the evolvement of distribution center administration framework. Distribution center administration frameworks can run in complexity from exceptionally fundamental apparatuses to help stockroom representatives in performing every day operations to exceedingly modern frameworks that supplant the distribution center laborers completely. The objective of warehousing is to play down the gotten of labor, space, and adapt inside the dissemination center while gathering the cycle time and shipping exactness necessities

of the client advantage course of action and the capacity prerequisites of the stock play. The logistics of warehousing incorporate Getting; Put absent, Capacity, Arrange picking and Shipping.

When considering the level of exertion included in warehouse operations, the most noteworthy consumption of exertion is within the picking prepare. To pick up efficiencies in picking the labor time to choose orders ought to be diminished and this could accomplished in a number of ways. Companies with the foremost effective stockrooms have the foremost habitually picked things closest to the shipping regions to play down picking time. These companies accomplish their competitive advantage by always looking into their deals information to guarantee that the things are put away near to the shipping range are still the foremost regularly picked (Mulama 2012).

Logistics service and Performance Measurement

Logistics administration is a coordination work which arranges and optimizes all logistics exercises with other capacities in supply chain and logistics administration, back, and data innovation. Logistics must guarantee that a beneficiary is provided from a point of root in understanding with his necessities with the right product (in amount and assortment), within the right condition, at the correct time and within the right put at least cost, (Smyth, 2004).

DeHaan et al., 2007 clarified that logistics administration may be a one of the contributing operations that includes exercises extending from client benefit; order handling, stock administration, transportation, distribution center administration, bundling, request and estimating, acquiring and obtainment, facility location, and distribution. Effective logistics gives the correct item within the right put at the correct time. Logistics envelops a complex set of exercises which require a collection of measurements to satisfactorily degree execution. Chow et al. (1994) were likely the primary to endeavor to characterize supply chain (logistics) execution and they displayed a few measures for measuring logistics execution. Since at that point, most of the writing on logistics execution shows up to center on models and systems.

Mansidão (2014) clarified that logistics execution measures can be categorized into two categories such as subjective and quantitative measures. Subjective measures incorporate such as client fulfillment and item quality etc., and quantitative measures incorporate such as order-to-

delivery lead time, supply chain reaction time, adaptability, asset utilization, taken a toll viability, conveyance execution, etc.

2.1.4 Logistics Performance

2.1.4.1 Financial Measure of Logistics Performance

Logistics is playing a progressively imperative part in esteem creation, income upgrade, capital utilization, and cost control. As a result, logistics money related execution is playing a greater part in corporate budgetary execution. Measuring and moving forward logistics monetary execution is progressively imperative in measuring and making strides corporate money related execution (Ronald H Ballou, 2004).

The foremost vital to keep in mind in creating and actualizing logistics budgetary execution measures is that about each by and large accepted corporate monetary degree encompasses a comparing logistics budgetary degree (Fugate et.al, 2010). A few key corporate money related measures and their comparing logistics monetary measures are:

Logistics Expenses (LE)

Logistics expenses are dominated by labor expenses but also include telecommunications, inbound and outbound freight, fuel, fees to third parties, and leased or rented space.

Logistics Profit

Logistics profit is computed simply as revenue minus logistics expenses. The computation of logistics profit per item, per category, or per location is helpful in determining the business viability of an item, category, or location.

Logistics Asset Value (LAV)

The logistics asset value is the sum total of the value of assets deployed in logistics including inventory, logistics facilities, transportation fleets, material handling systems, logistics information systems, and so on. The valuation is typically based on book value, replacement value, and/or the capitalization of logistics assets.

Return on Logistics Assets

The return on logistics assets is computed simply as the ratio of corporate profit (P) to LAV. The ratio can demonstrate the difference between the return on logistics assets versus the return on overall corporate assets or the assets deployed in the other areas of the business.

The return on logistics resources is computed essentially as the proportion of corporate benefit (P) to LAV. The proportion can illustrate the distinction between the return on logistics resources versus the return on generally corporate resources or the resources sent within the other regions of the trade.

Logistics Asset Turnover

Logistics asset turnover measures the overall utilization of logistics assets and is computed as the ratio of corporate revenue to the investment in logistics assets.

Logistics Capital Charges

Logistics capital charges are computed as the product of the investment in logistics assets and the asset carrying rate (ACR). The ACR is used to annualize the holding cost of fixed assets.

Total Logistics Cost

Total logistics cost (TLC) is characterized to incorporate cost and capital costs within the five logistics forms: customer response, inventory planning and administration, supply, transportation, and warehousing. The overall logistics costs are made up of the taking after: add up to reaction cost (TRC), add up to stock costs (TIC), add up to supply costs (TSC), add up to transportation costs (TTC), and add up to warehousing costs (TWC). The TIC incorporates the stock carrying taken a toll and the fetched of faculty, office space, and frameworks utilized in overseeing stock.

Logistics Cost-Sales Ratio

The logistics cost-sales ratio is the ratio of total logistics cost to corporate revenue. TLC as a percentage of sales is a popular measure of logistics cost performance.

Logistics Value Added

Logistics value included is computed in comparable design to the economic value added (EVA) of an enterprise, subtracting logistics capital charges from after-tax benefit. Since EVA is the foremost solid indicator of future shareholder esteem (concurring to Stern-Stewart), LVA is fabulous degree of the commitment of logistics to future shareholder esteem. In expansion, by consolidating the effect on income, costs, and capital charges, LVA could be a great marker of the by and large esteem of logistics activities.

2.1.4.2 Quality Measures of Logistics Performance

The foremost viable marker of logistics precision or quality is the perfect order percentage (POP), which ties together the lists for logistics quality in each of the logistics exercises (Fugate et.al, 2010).

Perfect Order Percentage (POP)

Logistics includes client benefit, inventory planning, fabricating and obtainment, transportation, and warehousing. Characterizing the proper estimation center, characterizing the proper standard, and characterizing the satisfactory limits of deviation from the standard for a coordinates set of exercises are complex assignments. The relation and common deliverable of client benefit, stock arranging, fabricating and acquirement, transportation, and warehousing is an order. Logistics exists to fill orders. The standard must be flawlessness; something else, the interest of the standard will not surrender the order of size enhancements required in all zones of logistics.

The perfect order is strategically culminate, which incorporates; perfectly entered (the section is precisely what the client needs) by the implies (phone or coordinate section) the client wanted in a single passage; superbly fillable with the precise amount of each thing accessible for conveyance inside the client indicated conveyance window; Perfectly picked with the right amounts of the right things; Perfectly packaged with the customer-designated bundling and labeling; Superbly dispatched without harm; perfectly conveyed within the customer-designated time window and to the customer-designated area; Flawlessly communicated with arrange status reports accessible 24 hours a day; Flawlessly charged with on-time installment; Superbly recorded with customer-specified documentation implies, counting paper, fax, EDI, and/or Web.

2.1.4.3 Productivity Measure of Logistics Performance

Basically, logistics supervisors and examiners have impact over the sum of logistics assets devoured in giving target client benefit levels. Consequently, a reasonable set of execution pointers will incorporate measures of logistics asset utilization and efficiency. Those measures are the center of this area, which depicts utilization and efficiency measures for the logistics workforce, transportation capacity, logistics offices, and stock. The efficiency of an indicated resource(s) is nonexclusively measured as the proportion of the yield of the resource(s) to the utilization of the resource(s) (Fugate et.al, 2010).

Logistics Workforce Productivity Indicators

The logistics workforce incorporates the administrators, bosses, organizers, examiners, and supervisors utilized in client reaction, stock arranging and administration, supply, transportation, and warehousing. The guideline mission of the logistics workforce is arranging fulfillment. Consequently, the yield of the logistics workforce is ordinarily measured in orders. The utilization unit for the logistics workforce is ordinarily measured as the number of full-time counterparts (FTEs) and/or working hours. Logistics workforce efficiency (LWFP) is computed as the proportion of the full orders shipped (TOS) to the number of full-time reciprocals working in logistics (LWF).

2.1.4.4 Cycle time measures of logistics performance

The total logistics cycle time(TLCT) includes order entry time(OET), order processing time(OPT), purchase order cycle time(POCT), if the product is not available from stock), warehouse order cycle time(WOCT), and in transit time(ITT).

OET is the passed time from arrange arrangement until completed arrange passage and capture for preparing. For orders gotten by mail, the arrange passage time incorporates ITT, holding up time for arrange passage, and OET. For orders gotten by fax, the OET incorporates fax transmission time, holding up time for arrange section, and the keying and/or filtering time for arrange section. For orders gotten by phone, the OET incorporates the holding up time for the client, the discussion time, and the keying time for the arrange section pro. For orders gotten electronically, the OET is diminished to the transmission time for the order.

The OPT clock begins when the order is entered in and captured by the arrange preparing framework and stops when the order is discharged to the distribution center (or production line) for picking. The Select incorporates the time to confirm client data, confirm for credit clearance, group for plan for discharge, and stay for discharge to the stockroom for get together.

The POCT is basically the client arrange cycle time you get from your provider. The POCT clock begins after you place your arrange along with your provider and stops when the arrange is gotten at your designated area. POCT is included within the TLCT when the item isn't accessible from stock.

2.2 Empirical Literature Review

In a related study; Prajogo et al (2016) recognized the importance of the coordinates logistics demonstrate within the pharmaceutical industry in China. The study expressed that pharmaceutical logistics is utilized to exchange pharmaceutical items from the pharmaceutical producers to clients.

As of now, the pharmaceutical industry is making different logistics improvements. In arrange to decrease logistics costs, the pharmaceutical industry is centering on outsourcing their logistics exercises and centralizing their distribution center operations in different nations. The other ways to decrease logistics cost utilize of discount supplies to 'end customer' conveyances. Particularly, in littler deals markets, the pharmaceutical industry sends their item to wholesalers instead of straightforwardly to clients (health centers, drug stores, retailers), this procedure is fit for the moo deals of the pharmaceutical industry (Sriyakul et.al, 2019).

Generally coordination ought to be the most objective in logistics, porter (1990) highlights that overhauling and development would result in nation's competitiveness. Subsequently, measuring the LP is right now getting to be a high need (Griffis, et al, 2007), hence bringing a challenge to the organization. Researcher refers LP as a metric utilized to measure the effectiveness and or viability of an activity. LP plays an imperative part in accomplishing the organization's objectives. The assessment is based on how well objective is met (Mentzer & Konrad, 1991) and to what amplify the in general efficiency execution would reflect LP. Thus, LP makes a difference the fulfillment of the organization's goals and procedure as well as fulfilling the clients.

The demonstrate created by Fugate, Mentzer, and Stank (2010), reflects the interdependency of logistics effectiveness, adequacy, and separation inside logistics execution and generally organizational execution. This demonstrates and see of logistics execution is backed by a few other researchers who concur logistics execution may be a multidimensional work of productivity, adequacy, and separation (Bobbit, 2004; Cameron, 2011).

According to Gunasekaran, 2014 logistics execution may be a solid determinant of national salary. Understanding and breaking down the components of logistics execution is essential to improving the effectiveness of logistics frameworks and makes a difference to prioritize

speculation. Course of action makers concerned with national logistics strategy require a preface for comparing national execution over time and against worldwide peers. Such data would incorporate the most drivers of logistics execution, markers of the fetched, and quality of logistics benefit, as well as indicators to degree the effect of administrative and financial alter within the division on financial execution and mechanical advancement.

Neely (1995) recognized effectiveness and viability as two principal execution measurements. Efficiency is the degree to which the logistics business's objectives are fulfilled while effectiveness implies how well the assets are utilized. Bobbitt (2004) contended that separation is another measurement to degree logistics execution but productivity and viability.

Financial measures overwhelmed for a long length of time in generally execution degree frameworks since they can be basically planned, without issues calculated and compared between companies. The require for supplementing regular bookkeeping measures with non-budgetary measurements came out within the 1980s and the early 1990s to watch the behavior of the more than one variables of a give chain (Cagliano et al., 2009). Monetary measures are utilized to consider esteem and cost, while non-financial measures bargain with help utilization, time, incredible etc. (Brewer and Seph, 2000). The rising of non-financial measures does now not propose that budgetary measures are now not imperative, be that as it may then again non-financial measures are fundamental in evaluating companies' capacities to compete and uncovering additional records than money related ones (Gunasekaran, 2004).

Fawcett and Cooper (1998) outlined five degree categories to capture execution of logistics: asset management, cost, client benefit, efficiency, and logistics quality. Whereas Chan and Qi (2003) measured logistics from cost, time, capacity, capability, efficiency, utilization and result measurement.

Within the papers of Jothimani and Sarmah(2014) and Huo and Ji (2008), they each embraced unwavering quality, responsiveness, adaptability, cost measures and resource administration viably to determine logistics execution, which breaks down logistics first-class into unwavering quality, responsiveness and adaptability. Keebler and Arrange (2009) translated remarkable as exactness, completeness and rightness.

Franceschini and Rafele (2000) expounded the criteria of pleasant measurements for logistics exercises as: lead time, normality, unwavering quality, completeness, adaptability, rightness, hurtfulness and efficiency. When outsourcing logistics benefit, organizations have a propensity to also degree relationship, expertise/competence/experience, area, fund, data devices frameworks, in expansion to cost, quality, adaptability, unwavering quality (Aguetteoul, 2000).

A consider conducted in sub-Saharan Africa with respect to around challenge in supply chain found that partners ought to center on well-functioning transport administration frameworks and stock administration approaches, with solid political inclusion, clear duties and parts, great supervision frameworks and satisfactory budgeting. Subsequently specific nations got to be analyzed with respect to person structures and circumstance and an appropriate stock administration and transport and dissemination arrange must be designed (Schöpferle, 2013).

The study shows that the transportation administration framework of the company has come about in wasteful logistics practice. Warehouses were too wasteful in space utilization and execution and efficiency of the distribution centers endured as the operations were physically carried. To a few level, extraordinary allow from statutory bodies/agencies, and tall stacking down time at the harbor of Djibouti have been distinguished as outlandish source of clearance delays. Encourage the finding uncovered that extend execution can be anticipated from logistics components (Woubshet, 2017).

Logistics companies are not enough prepared and no checking is in put to guarantee that measures are set and taken after. Around 84% of logistics companies had no set of standard working methods for solutions Logistics. Almost 37% are cap- able of giving cold chain logistics depending on the term. There was no shape of control upholding guidelines for drugs Logistics. Pharmacists' sees propose that destitute logistics and SCM hones, frail control and arrangement usage and need of bolster for in-country restorative logisticians are variables influencing productive SCM of medicines (Chukwua, and Lemoha, 2018).

Kallio et al., 2000 analyzes firms' accomplishment of proficiency inside shifting conveyance forms, deciding that companies utilizing schedule conveyance forms ought to put more prominent esteem on proficient, low-cost operations than those that give custom conveyance forms to meet particular needs of the getting party.

According to Susarla and Karimi (2012), a well-managed and well-designed conveyance framework will have the taking after highlights: (a) maintain a consistent supply of medications, (b) keep up medications in great condition all through the method, (c) minimize misfortune due to close and harm, (d) keep up adjust stock records, (e) utilize accessible transportation assets proficiently, (f) give data to decide estimating pharmaceutical needs, (g) and coordinated a quality confirmation program. The dissemination handles starts when the producer ships the medication and closes when the medication utilization report is back to the obtainment substance.

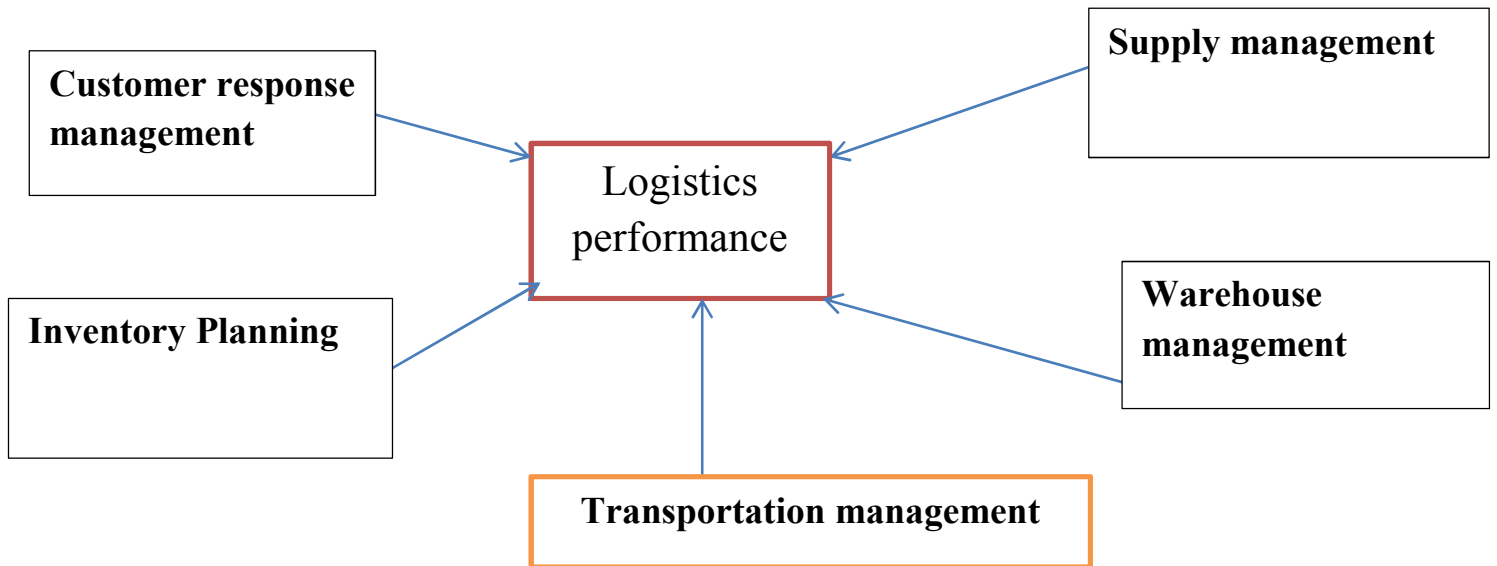
The inventory administration impact on amounts of finished products, area of stock, and control of approaching and active pharmaceutical accessibility is displayed. Kelle, Woosely, and Schneider (2012) inspected the frequently clashing objectives in choice making among the different partners in pharmaceutical supply chain and investigated the administrative tradeoffs show at the operational, strategic, and key levels of choice making

Transportation includes a significant part that interfaces several networks in a supply chain that comes about within the change of assets into valuable items for the customer. The network comprises of generation / fabricating plants, warehousing administrations, and retailers. Within the fabricating stage, the get together of materials, components, supplies, stock, and capacities are overseen inside the production line (Buyukkaramikli, Gurler, & High Mountain, 2014).

The producers are included within the generation of products and take off the rest to showcasing and dispersion substances to other groups included within the supply chain. Warehousing and capacity ought to too be considered within the generation handle or generation conveyance. The huge portion of the organizations utilizes combination workplaces and dispersal centers than a single-user dissemination center (Askin, Baffo, & Xia, 2014). This sort of solidified stockroom utilizes offers way better transportations administrations and advancement of logistics execution (Hofmann & Lampe, 2013).

2.3 Conceptual frame works

This part of the thesis introduces the conceptual framework that is developed for the study. The framework which is developed for this study is formulated based on approaches and concepts identified in the literature review in this chapter. The purpose of the framework is to explicate the conceptual logic and direction of the study. It engages leading ideas and helps to explain the significance of this study's concepts.



Source: (Frazelle, 2002)

Figure 2.2 Conceptual framework of the study

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This part explains why the researcher has chosen the specific research approach to answer the research questions. The chapter also describes the research approach, research design, area of study, the population and sampling design, method of data collection and the sources of data and validity and reliability of the research instrument.

3.2 Description of the Study Area

The study was conducted in Ethiopian pharmaceutical manufacturing sh.com. EPHARM is the first pharmaceutical manufacturing company established in Ethiopia. Engaged in manufacturing of pharmaceutical and distributes to Mother Company (Medtech) and other wholesalers. The company received ISO 9001: 2015 for manufacture and sale of pharmaceutical products and ISO 14001:2015 for environmental management system. EPHARM is right now creating diverse dosage forms, which makes it impossible to miss from numerous of the neighborhood pharmaceuticals producers. EPHARM has been creating tall quality and cost- competitive drugs that have tended to the basic wellbeing issues of the Ethiopian individuals for more than fifty a long time. The items include Anti-Microbial, Implantations, Topical drugs, Drugs that act on central nervous system framework (CNS), Gastroenterological drugs, Vitamins, Anti-Allergic, Analgesics, Anti-Tussives and numerous more. The company has eight generation lines, completely prepared research facilities, and utilities competent of creating diverse dose shapes in capsule, tablet, vials, sachets (verbal powders), fluids (syrup), ampoules, expansive volume mixtures, and ointments.

3.3 Research Approach

According to (Kothari, 2004) “Research procedure is depicted as the way inquire about targets can be examined; there are two sorts of inquire about procedures which are categorized into quantitative and quantitative inquire about techniques. Qualitative tends to look for to pick up data and to get it people’s discernment of the world, whether as people or bunches. It is characterized as subjective in nature, with emphasize in implications, encounters and so on. Where quantitative investigate is the sort of investigate methodology that looks for to accumulate

genuine information and to think about connections between truths and how such actualities are relating to the hypotheses and the discoveries of any investigates which have been executed already concurring to (Creswell, 2009). Subsequently quantitative types inquire about approach utilized in to reply inquire about address. Quantitative components set in EPHARM. The research involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion.

3.4 Research Design

A research design is the course of action of conditions for collection and investigation of information in a way that points to combine significance to the investigate reason with economy in inquire about strategy (Creswell, 2009). Research design is used to restructure the research by narrating how all the important parts of the research project, sample or group work together in addressing the research question. The types of research design that can be suitable according to the nature of proposed study are descriptive and exploratory design (Creswell, 2009). The type of research design adopted in conducting this study was descriptive. This design was selected because the researcher wished to collect information on people's attitudes and opinions in relation to performance of logistics activities in the organization.

3.5 Population and Sample

Population can be defined as the totality of observation with which the researcher is concerned (Kothari, 2004). The target population for this study constituted all employees who work at logistics department in EPHARM. Due to the small target population (56), it was decided to employ a census technique to gain insight on logistics performances. For this research Purposive sampling was implemented to select the respondents with an aim of reducing variability in the information received.

3.6 Data Sources and Types

Kothari (2004) depicted essential information as the initial works of investigate or crude information without translation or proclamations displayed on official conclusion or position. Secondary data is defined as the second hand information which has already been collected by other researchers for other purposes and they are comprised of published data. In the study, the secondary data was collected through documentary from different existing relevant documents such as books, files, journals, and reports. To achieve the objectives of this study the researcher

employed both primary and secondary data sources. In primary source questioner was used and books, reports and statistical abstracts were used as source of secondary data.

3.7 Data Collection Procedures

In this study, primary data was collected using a questionnaire while secondary data were obtained from annual reports of the organization and technical reports on the logistics practices. The study was mainly relying on primary quantitative data collected through structured questionnaires. Main data collection tool was via questionnaire as this is an efficient and convenient way of gathering the data within the resources and time constraints. The instrument were pre-tested some time recently last organization of surveys to the respondents. Participants for the pilot study were excluded from the final list of respondents.

3.8 Data Analysis

The collected data was checked initially to detect for any errors to ensure consistency and completeness. After the data is checked it was coded, entered and analyzed by the use of IBM Statistical Package for the Social Sciences (SPSS) version 20. Study results have been presented by using descriptive statics (mean, standard deviation, proportion, and percentage), and tables.. Moreover, primary data which was collected through questionnaire was tabulated and percentage and frequency count was calculated.

3.9 Data validation and Reliability

It is important to ensure methodological rigor and data quality to ensure trustworthiness of any study. Validity is the degree to which a test measures what it implies to degree (Creswell, 2009). Validity of the survey information depends on a vital way the capacity and readiness of the respondents to supply the data asked. The reliability of a scale demonstrates how free it is from irregular mistake. Reliability alludes to the degree to which information collection methods or investigation strategies surrender steady discoveries.

Before going to data presentation, analysis and interpretation; Cronbach's Alpha was calculated as part of the reliability test to assess how valid the results were and should produce similar generalized results if the sample size were increase. Pilot study was conducted to refine the methodology and test instrument such as a questionnaire before administering the final phase. Questionnaires will be tested on potential respondents to make the data collecting instruments objective, relevant, suitable to the problem and reliable as recommended by (John

Adams et al., 2007). Furthermore, most of the respondents were managers and workers who are currently work in the company. In this manner, the analyst anticipates that the respondents have given valid answers that would likely be replied to another future free analyst. One of the foremost commonly utilized markers of inner consistency is Cronbach's alpha coefficient. Indistinguishably, Cronbach's alpha coefficient of a scale ought to be over .7 (DeVellis 2003).

Table 3.9 table Cronbach's Alpha value

No	Variables	Cronbach's Alpha value	Number of items
1	Customer response	0.866	4
2	Inventory planning and management	0.915	5
3	Warehouse	0.915	4
4	Transportation	0.937	4
5	Supply	0.944	4
total		0.972	21

From the table the Cronbach's Alpha value ranges from 0.866 to 0.944, which comply with the standard Cronbach's Alpha value range from 0 to 1. Hence the result shows that the data has internal consistency and is reliable for further analysis.

3.10 Ethical Consideration

The study was conducted after ethical clearance is granted from ethical review committee of the college, Addis Ababa University. Approval to conduct the study is also obtained from the company respective bodies. All participants of questionnaire were distributed after getting their willingness, they were not required to write their name on questionnaire, they were told to kept their response confidential and used for only academic purpose.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

This part is dedicated to the analysis of the study data, presentation and discussion of data obtained from the primary source and secondary sources . Accordingly, for the interest of keeping logical flow of the presentation, this chapter is organized in the same way the measurement questions in the questionnaire.

Response Rate

Out of the total of 56 questionnaires that were distributed to all logistics department employees, 52 (92.9%) questionnaires were collected, and the remaining 4 (7.1%) questionnaires were not returned timely. All 52 properly filled questionnaires were collected and used for the analysis. The information collected from the target populace was analyzed utilizing SPSS version 20.

4.1 Demographics Information

This section provides data on the general characteristics of the respondents who participated in the study, which includes level of educations, years of services in company and specific position in the firms. This information is very important to see the respondent background in the field and to build confidence on the collected data.

Table 4.1 demographics information

Criteria		Frequency	percent	Valid percent	Cumulative percent
Level of education	College certificate	6	10.7	11.5	11.5
	Diploma	8	14.3	15.4	26.9
	Bachelor degree	31	55.4	59.6	86.5
	Master's degree	7		15.4	100.0
Years of experiences	less than a year	3	5.4	5.8	5.8
	1-2 years	12	21.4	23.1	28.8
	3-5 years	20	35.7	38.5	67.3

	more than 5 years	17	30.4	32.7	100.00
Respondent position in the firm	Procurement	13	23.2	25	25
	Forecasting and Capacity Building	8	14.3	15.4	40.4
	Warehouse	11	19.6	21.2	61.5
	Transportation	9	16.1	17.3	78.8
	Finance	3	5.4	5.8	84.6
	Others	8	14.3	15.4	100

Source: survey result (2020)

From 52 respondents in terms of educational background the majority 31(59.6%) have BA/BSC degree and 6 (11.5%), 8(15.4%), 7 (13.5%) have certificate, college diploma and master's degree respectively. According to the result we can conclude that the respondent can better understand the questions and provide relevant and accurate information needed for the study.

The respondents were asked about their years of services in the firm and only 5.8% of respondents have less than one year experience. The rest 12 (23.1%), 20 (38.5%) and 17 (32.7%) have 1 to 2, 3 to 5 and more than five years of experience, respectively. This implies the fact that most of the respondents have enough knowledge and experience about their firm and subject matter of the study. Procurement, warehouse, and transportation were contributed to 63.5% of the respondents. Which indicates that the respondent have exposure about the logistics activities.

4.2 Customer response management practice

Table 4.2 analysis of customer response

Customer response criteria		1		2		3		4		5	
		#	%	#	%	#	%	#	%	#	%
1	The order entry is precisely as client Requirement	14	26.9	22	42.3	4	7.7	12	23.1	0	0
2	The employees who serve the customer has enough knowledge	11	21.2	26	50	4	7.7	6	11.5	5	9.6
3	Time to solve customer complaints is	3	5.8	11	21.1	6	11.5	25	48.1	7	13.5

	Short										
4	Customer order processing time is short	3	5.8	6	11.5	8	15.4	23	44.2	12	23.1

Source: survey result (2020)

As presented in the above table 4.3, in the 1st item respondent were asked about their level of agreement on order entry, hence 26.9% and 42.3% of respondents strongly agree and agree respectively, they said order entry exactly as specified by customers and only 23.1% of respondent disagree on order entry. We conclude from the respondent there is fair performance on order entry.

In the 2nd item, respondents were asked about the employees in customer service area has enough knowledge to serve customers. Majority of respondents 21.2% strongly agree and 50% totally agree with the items and 11.5% and 9.6% of the respondents reacts as disagree and strongly disagree respectively. This show that the majority of the respondents agree on employees' knowledge in customer service area was enough to serve their customers.

In the 3rd item, the respondents were asked about the time to solve customer complaint. 48.1% of respondents disagree and 13.5% of respondents were strongly disagreeing, 5.8% and 21.1% of respondents were strongly agreed and agree. The result indicates that the response on customer compliant were too long, this complicate the process of work and create long operation time and additional costs.

In 4th item, the respondents were asked about the time to process customer order from those 44.2% and 23.1% were replied as disagree and strongly disagree with the item. The least respondents of the items belong to agree 11.5% and strongly agree 5.8%.

From the survey result the customer order processing time was poorly performed. Their average mean and standard deviation is 3.7 and 1.21 respectively.

4.3 Inventory planning and management

Table 4.3 analysis of inventory planning and management

Inventory planning and management criteria		1		2		3		4		5	
		#	%	#	%	#	%	#	%	#	%
1	The inventory model used target to	1	1.9	13	25	10	19.2	21	40.4	7	13.

	minimize overall total inventory costs like holding, ordering, and stock out										5
2	The inventory model determine the quantity ordered based on real demand analysis	11	21.1	19	36.5	7	13.5	12	23.1	3	5.8
3	The availability of the inventory to satisfy the demand of the customer	4	7.7	12	23.1	6	11.5	24	46.2	6	11.5
4	Effective use of assets in inventory Management	14	26.9	14	26.9	5	9.6	19	36.6	0	0
5	The current inventory management and planning system of the company assist the company's competitive strategy	1	1.9	8	15.4	12	23.1	19	36.5	12	23.1

Source: survey result (2020)

From the table 4.4, in the first item, the respondents were asked about the inventory model used to minimize overall total inventory costs. The majority of respondents disagree 53.9% and 19.2% of the respondents were neutral with the item and the remaining 25% and 1.9% of respondents agree and strongly agree respectively, on the item.

In the 2nd item, the respondents were asked about whether the inventory model used determines the quantity ordered is based on real demand analysis. From the total respondents 57.6% strongly agree and agree with point. 13.5% neither agree nor disagree with the items and 28.9% of the respondents strongly disagree and disagree with the point.

In the 3rd item, the respondent were asked about the availability of inventory has positive relation with customer demand. From the total respondents 57.7% strongly disagree and disagree with the items, 30.8% of the respondents replied as agree and strongly agree, the remaining 11.5% of the respondents were replied as neither of them.

In the 4th item, the respondents were asked about effective asset utilization in inventory management. Majority of respondents 53.8% were strongly agree and agree with the item, 9.6% of the respondents neither and the remaining 36.6% of the respondents respond as strongly disagree and disagree with the items.

In the 5th item, the respondents were asked whether the current inventory management and planning system of the company assist the company's competitive strategy. Majority of the

respondents 59.6% strongly disagree and disagree with the item, 23.1% of the respondents were neither and the least respondent were strongly agreed and agree 17.3.

From the survey result the inventory planning and management was inefficiently practiced with their average mean and standard deviation is 2.7 and 1.31 respectively.

4.4 Warehouse management practice

Table 4.4 analysis of warehouse management practice

Warehouse criteria		1		2		3		4		5	
		#	%	#	%	#	%	#	%	#	%
1	The number of warehouses were enough to smoothly manage the flow of materials	21	40.4	11	21.2	5	9.6	15	28.8	0	0
2	Standard warehouses are available at ease in towns place i.e. accessibility, capacity	21	40.4	15	28.8	3	5.8	7	13.5	6	11.5
3	Computerized data base was used to manage the materials in each warehouse.	14	26.9	16	30.8	5	9.6	11	21.2	6	11.5
4	Warehouse operators are skilled to use computer and other technologies to perform warehouse activities	19	36.5	12	23.1	5	9.6	16	30.8	0	0
5	Warehouse operators use digital tools to capture shipment information	1	1.9	12	23.1	10	19.2	21	40.4	8	15.4
6	The warehouses are equipped with necessary Handling tools	5	9.6		32.7	9	17.3	12	23.1	6	

Source: survey result (2020)

Referring the question in table 4.5, according to survey result whether the number of warehouse were enough to smoothly manage the flow of materials or not, majority of the respondents, (61.6%) of the total respondents have expressed their agreement and strong agreement on the number of warehouse was enough to smoothly manage the flow of materials. 28.8%of respondent have replies as disagree and strongly disagree and the remaining 9.6% of respondent replied as neither of them. Thus from overall observation we can depict that the number of warehouse were enough to smoothly manage the flow of materials.

In the 2nd item, which is warehouse accessibility and capacity, most of the respondents, which are 69.2% have replied agree and strongly agree respectively on accessibility of warehouse. However 25% of respondents were replied as strongly disagrees and disagrees and the remaining 5.8% of the respondents replied as neither of them. This implies that the firms' warehouses are accessible for material movement.

In the 3rd item, the respondents were asked about computerized data base system in the warehouse. Majority of respondents 57.7% strongly agree and agree with the item, 32.6% of respondent were strongly disagree and disagree. 9.6% are neither agree and disagree.

In the 4th item based on the respondents feedback 59.6% have indicated their agreement and strong agreement on availability of handling tools in the warehouses. Only 23.1% of respondent have expressed their disagreement for the same questions.

Thus from the overall observation we depict that the number and availability of handling tools in warehouse were enough to smoothly manage the warehouses day to day operations. Their average mean and standard deviations is 2.3 and 1.3 respectively.

4.5 Transportation Practice

Transportation is the backbone of operations and it is the key element in logistics management which joins the separated activities in the supply chain.

Table 4.5 analysis of transportation practice

Transportation criteria		1		2		3		4		5	
		#	%	#	%	#	%	#	%	#	%
1	The transportation system of the company, like timely delivery and safety, satisfy internal customer	5	9.6	18	34.6	7	13.5	17	32.7	5	9.6
2	The available trucks are enough for efficient logistics operation	5	9.6	12	23.1	13	25	14	26.9	8	15.4
3	The current practice or system of transportation provides efficiency in logistic	3	5.8	11	21.1	9	17.3	22	42.3	7	13.5
4	The capacity of the trucks is enough for shipment to be carried on	6	11.5	15	28.8	7	13.5	18	34.6	6	11.5

Source: survey result (2020)

In the 1st item, the respondents were asked about the transportation system like timely delivery and safety, and satisfy their customer or not. 34.6% and 9.6% of the respondents were replied as disagree and strongly disagree respectively with the items and 13.5% are neither agree and disagree with the items. Whereas 42.3% of the respondents were strongly agree and agree with the idea.

In the 2nd item, 9.6% and 23.1% of the respondent strongly agree and agree respectively in the availability of trucks are sufficient for competent logistics operations, but 26.9% of the respondents disagree in the availability of enough trucks for shipment. The remaining 25% of respondent replied as neither agree and disagree with the items.

In the 3rd item, the respondents were asked their level of agreement on the current transportation provides efficiency in logistics. Majority of respondent 55.8% were replied as disagree and strongly disagree with good practice of transportation in logistics but only 26.9%of respondent replied as agree and strongly agree. 17.3% of respondents neither agree nor disagree with the items. In this analysis majority of respondent shows their disagreement and strongly disagreement. This leads to the current practice of transportation provides inefficiency in logistics.

In the 4th item, the respondents were asked about the capacity of trucks is enough for shipment to be carried on. Most respondents 28.8% agree and 11.5% strongly agree on the item, fall on disagree and strongly disagree 46.1% of the respondents. Whereas 3.5% of the respondents replied as neither agree and disagree with the item.

In this way the respondents' input demonstrates that the transportation framework was not productive sufficient and has brought about in delay of conveyances. Their average mean and standard deviations is 3.6 and 1.15 respectively.

4.6 Supply Practice

Table 4.6 supply management practice

Supply criteria		1		2		3		4		5	
		#	%	#	%	#	%	#	%	#	%
1	The supply management system designed in the corporation target	5	9.6	12	23.1	13	25	18	34.6	4	7.7

	to minimize acquisition cost and logistics cost										
2	We offer high quality products to our Customer	8	15.4	11	21.2	1	1.9	26	50	6	11.5
3	The time it takes between you place your order with your supplier and order is received at your designated location	1	1.9	17	32.7	4	7.7	18	34.6	12	23.1
4	The product entry is exactly what the customer wants and exact quality	13	25	16	30.8	5	9.6	11	21.1	7	13.5

Source: survey result (2020)

In the 1st item, respondents asked about the supply management system designed in the corporation target to minimize acquisition cost and logistics cost. The majorities of respondents 42.3% strongly disagree and disagree with the item, followed with 32.7% of the respondents strongly agree and disagree; the remaining 25% neither agree nor disagree with the point.

In the 2nd item the respondents were asked about we offer high quality products to our customer, 55.8% of respondents replied as strongly disagree and disagree. 36.5% of respondents were replied as disagree and strongly disagree, the remaining 7.7% neither agree nor disagree with the item.

In the 3rd item the respondents were asked about the time it take between you place your order with your supplier and order is received at your designated location. Majority of respondent 57.7% strongly disagree and disagree, 7.7% of respondent were replied as neither disagree and nor agree. The remaining 34.6% expressed their level of agreement as agree and strongly agree with item.

In the 4th item the respondents were asked about the product entry is exactly what the customer wants and exact quality. Most of the respondents 55.8% were replied as agree and strongly agree. Followed by strongly disagree and disagree which is 34.6%. The rest are neither of them 9.6%.

Generally their average mean and standard deviations is 3.8 and 1.3 respectively, this shows that most of the respondent their disagreement on the factors raised on the supply management practice of the firm.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter presents the summary of research findings and conclusion drawn from the analysis as well as the recommendation based on the finding results.

5.1 Summary of Findings

This study tries to assess the logistics performance of Ethiopian pharmaceutical manufacturing S.C.

The survey result shows that majority of respondents shows their disagreement in time to solve customer compliant and order processing time. Which result dissatisfied customer and in inefficiency in logistics activities.

The number of warehouse was enough to create space, time utility and to accommodate the materials in proper and safe way. Computerized data base used to manage material in warehouse, necessary handling tools also available in the warehouse.

The survey result shows that there was incompetent inventory management, transportation and supply management in meeting company goals which has resulted in inefficient logistics practices. The inventory availability doesn't satisfy the total demand of the customers. The inventory planning system of the company also cannot minimize the costs related to inventory like holding and ordering costs which increases total logistic costs. This has resulted in delivery delays, poor service quality, and increased operational cost on the other hand it directly affect logistics performance.

5.2 Conclusions

Based on the finding presented in the previous section the following conclusions are drawn.

The inventory planning system of the company also cannot minimize the costs related to inventory like holding and ordering costs which increases total logistic costs. The transportation management system of the company results in inefficient logistics practices. Late delivery, not achieving economies of scale and distance to minimize unit cost of transportation are the major problems drawn. Absence of developed tool to check customer satisfaction, level in logistics activity and customer service policy of logistics also a problem. Long import process of customs process affects availability of items and the supply management does not target to minimize cost of purchase. This shows that supply chain management practice has negatively impact on logistics performance of the company.

Finally the Ethiopian pharmaceutical manufacturing sh.com was inefficient in four logistics interdependent process in terms of customer response, inventory planning and management, transportation and supply.

5.3 Recommendations

Based on the above study finding, the researcher suggests the following points as credible recommendation to the problem.

To address efficiency and on time delivery of transportation the company needs to plan all its function and sub-function into the system of goods movement in order to minimize cost as a result maximize service delivery

The company should have any standard tool to check level of customer satisfaction to take corrective action based on the results from the tool.

The company should give due attention in properly implementing logistics activities for efficient delivery service, better inventory management and better supply of materials.

5.4 Suggestion for the future study

It only depends on responses based on the perception of the selected respondents. However the research believes that it could be seen as a facilitator for future similar researcher. Other researcher may expand the scope and further investigate including other parameters. It would be interesting to further explore and compare pharmaceutical logistics performance of different companies and other country.

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ANNEX: Information sheet and consent form

ADDIS ABABA UNIVERSITY

SCHOOL OF BUSINESS & ECONOMICS GRADUATE STUDIES

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Dear respondents:

I am graduate student at Addis Ababa University School of Commerce in the Department of Logistics and Supply Chain Management. I am carrying out a study on assessment of pharmaceutical logistics performance in Ethiopian pharmaceutical manufacturing sh.com as a partial requirement for the award of Masters of Art Degree in Logistics and Supply Chain Management. The purpose of this questionnaire is to gather data for the proposed study. You are kindly invited to participate in the study. There is no sensitive issue that you will be asked related with your social desirability but any information that is obtained in connection with this study and that can be identified with you will remain confidential. The information collected about you will be coded using numbers. Your participation is entirely voluntarily.

Regards

EZEDIN HALAWI

ANNEX: Questionnaire

This questionnaire intends to collect information on assessment of pharmaceutical logistics performance in case of Ethiopian pharmaceutical manufacturing sh.co. The information sought in this questionnaire is meant for academic purpose and your responses and statements will be handled with utmost confidentiality. Kindly answer the questions by ticking in the boxes or writing a brief statement where applicable.

1. Background data

Q.N	Questions	Alternatives
1.1	Highest level of education attained?	1. College certificate 2. Diploma 3. Bachelor degree 4. Master's degree 5. Others: Specify_____
1.2	Total years of service at EPHARM?	1. Less than a year 2. 1- 2 years 3. 3-5 years 4. More than 5 years
1.3	What is your position in this facility?	1. Procurement 2. Forecasting and Capacity Building 3. Warehouse 4. Transportation 5. Finance 6. Others: specify_____
1.4	Have you attended any training on logistics management of pharmaceuticals in your facilities?	a) Yes b) No

2 Research Questions

Please indicate your position by selecting your choose under each evaluation statement:

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

1. Customer response

NO	Statement	1	2	3	4	5
1	The order entry is precisely as client requirement					
2	The employees who serve the customer has enough knowledge					
3	Time to solve customer complaints is Short					
4	Customer order processing time is short					

2. Inventory planning and management

NO	Statement	1	2	3	4	5
1	The inventory model used target to minimize overall total inventory costs like holding, ordering, and stock out					
2	The inventory model determine the quantity ordered based on real demand analysis					
3	The availability of the inventory to satisfy the demand of the customer					
4	Effective use of assets in inventory management					
5	The current inventory management and planning system of the company assist the company's competitive strategy					

3. Warehouse

NO	Statement	1	2	3	4	5
1	The number of warehouses were enough to smoothly manage the flow of materials					
2	Standard warehouses are available at ease in towns place i.e. accessibility, capacity					

3	Computerized data base was used to manage the Materials in each warehouse.					
4	The warehouses are equipped with necessary Handling tools					

4. Transportation

NO	Statement	1	2	3	4	5
1	The transportation system of the company, like timely delivery and safety, satisfy internal customer					
2	The available trucks are enough for efficient logistics operation					
3	The current practice or system of transportation provides efficiency in logistic					
4	The capacity of the trucks is enough for shipment to be carried on					

5. Supply

NO	Statement	1	2	3	4	5
1	The supply management system designed in the corporation target to minimize acquisition cost and logistics cost					
2	We offer high quality products to our Customer					
3	The time it takes between you place your order with your supplier and order is received at your designated location					
4	The product entry is exactly what the customer wants and exact quality					

Your comment

Is there any comment that you would like to give concerning logistic performance of your company _____

--- Thank You for your cooperation! ---