ST.MARY UNIVERSITY

SCHOOL OF GRADUATE STUDIES

EFFECT OF PHYSICAL DISTRIBUTION PRACTICE ON CUSTOMER SATISFACTION IN ETHIOPIA PHARMACEUTICAL COMPANY (EPHARM)

BY
TARIKUA BELACHEW

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF ART IN BUSINESS ADMINSTRATION

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Declaration

I, the under signed, declare that this thesis is my original work, prepared under the guidance of Mohamed Mohamed Nur (Assistant Professor).All sources of material used while working on this thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any type of degree.

Tarikua Belachew _____

Name Signature and Date

Endorsement

This thesis has been submitted to St. Mary's University, School of Graduate Studies for examination with my approval as a university advisor.

_____ _____

Advisor Signature

Acknowledgment

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Table of contents

List of Table

List of Figure

Acronyms

CNS	Central Nervous System
EPHARM	Ethiopian Pharmaceutical manufacturing Sh.Co.
FMHACA	Food, Medicine and Health Care Administration and Control Authority
OLS	Ordinary Least Square
PDM	Physical Distribution Management
S.C	Share Company
SPSS	Statistical package for Social Science

Abstract

The purpose of this study was to analyze the effect of physical distribution practice on customer satisfaction. The objectives of the study were to investigate effect of transportation on customer satisfaction, to examine to what extent ware housing management determines customer satisfaction, to investigate effect of inventory management on customer satisfaction, to analyze the effect of order processing on customer satisfaction and to evaluate effect of packaging on customer satisfaction. For the purpose of analyzing the above mentioned objectives explanatory research design was employed and Questionnaires were collected from 212 pharmaceuticals retail outlet respondents. For the purpose of data collection both primary and secondary data were also used. Apparently, in order to analyze the collected data descriptive statistics and ordinary least square model were employed. The findings of the study revealed that comparatively customers are well satisfied with the company's packaging system, convenient warehouse location and its ordering process. On the other hand customers are less satisfied with the company's inventory control and management system. Furthermore, the correlation and regression analysis shows that transportation, inventory, order processing and warehouse location had a positive and significant effect on customer satisfaction whereas, packaging didn't show a significant effect on customer satisfaction. In considering the findings the study, the organization better work more on improving its inventory management and control system.

***Key Words**: physical distribution practice, customer satisfaction, transportation, inventory, warehouse*

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

The similarity of basic products that are offered, the growth of competition and the raising of customers' expectations make physical distribution so important in determining the final demand for a product (Schewe and Hiam 1998: 366).Physical distribution is the handling and moving of raw materials and finished products from producer to consumer. So, physical distribution management is the process of strategically managing the movement and storage of materials, parts and finished inventory form suppliers, between enterprise facilities and to customers (kotler.2001).Physical distribution and Logistics are used interchangeably. In short, they involve getting the right product in the right quantity to the right customer in the right place at the right time in the right condition and at the right cost. These seven (7) rights of customer service are indispensable in any physical distribution system. This calls for a system approach to physical distribution management (PDM) – managing upstream, and downstream value-added flows of materials, final goods and related information among suppliers, the company, resellers, and final consumers(Ballon, R.H. (2001).

According to Perreault, W.D., Cannon, J.P. and McCarthy E.J (2010:275) physical distribution system concept is that all transporting, storing and product-handling activities of a business and a whole channel system should be coordinated as one system that seeks to minimize the total cost of distribution for a given customer service level. Lowering costs and better service help to increase customer satisfaction and customer value; customer attraction and satisfaction is highly influenced by the seller's physical distribution capabilities and decisions (Kotler 2006: 591).Customer satisfaction depends on a product's or service's perceived performance in delivering value relative to the buyer's expectations. They say a highly satisfied customer generally stays loyal, buys more of the company's products, pays less attention to competing brands and is less sensitive to price, offers product or service ideas to the company and costs less

to serve than new customers because transactions are routine (Kotler P. and Keller K. L.2007:144).

The starting point for designing physical distribution is to study what the customers want and what the competitors are offering in terms of physical distribution or logistical customer service. Therefore, it is undeniable that any factory working on consumer production needs to pay due attention on the quality of its physical distribution of products. And, one of the factories that have to follow the procedures stated so far is Ethiopian Pharmaceutical Manufacturing.

Ethiopian Pharmaceutical manufacturing Sh.Co. (EPHARM) is a pioneer in the pharmaceutical manufacturing industry of Ethiopia; its head quarter is located in Nifas Silk Lafto sub-city, Addis Ababa was established in 1964 as a public company by the Ethiopian government and investors from England. During the Derg regime it was fully nationalized, in 2002 and it was reorganized as Ethiopian Pharmaceuticals Manufacturing Share Company 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 greater level and make it competent than it was ever before.

EPHARM is currently producing different dosage forms, which makes it peculiar from many of the local pharmaceuticals manufacturers. EPHARM has been producing high quality and price-competitive drugs that have addressed the critical health problems of the Ethiopian people for more than fifty years. The products encompass Antibiotics, Infusions, Topical drugs, Drugs that act on central nervous system (CNS), Gastroenterological drugs, Vitamins, Anti-Allergic, Analgesics, Anti-Tussives and many more. The company has eight production lines, fully equipped laboratories, and utilities capable of producing different dosage forms in capsule, tablet, vials, sachets (oral powders), liquids (syrup), ampoules, large volume infusions, and ointments (https:\\www.epharmsc.com).

EPHARM needs a physical distribution system that provides adequate level of customer service which will help deliver customer satisfaction better than the competitors. In line with this research intends to analyze the effect of physical distribution practice on customer satisfaction.

1.2. Statement of the Problem

Physical distribution is the set of activities concerned with efficient movement of finished goods from the end of the production operation to the consumer. Physical distribution is part of business management and has major functions: transportation, storage and deposit, assembling and processing, material handling, packaging and wrapping, and information. Physical distribution functions are annexed to physical distribution facilities, such as terminal, distribution center, warehouse, and so on the other hand in the enterprise logistics is emphasized that it is centered in searching and achieving the best present and future satisfaction of the final costumer and includes the socio-environmental and ethic-legal aspects, the planning, execution and control of all related activities with the procurement, flow, warehousing and maintenance of materials, products and even services; from the raw material source, including costumer through inverse logistics, to the sale point of the finished product whether local or international, massive or enterprise, in the most effective and efficient manner, maximizing performance and the expected quality, while minimizing waste, time and cost using modern information technologies (Snaykay, K. (2002).

One major challenge facing companies is that of attracting and retaining customers in competitive environment. Companies can attract customers by offering better customer service through physical distribution that is sufficiently sensitive and flexible to permit timely response to customer requirements and cost effective to ensure profit. Company's failure to provide desired level of customer service leads to customer dissatisfaction and loss of customers. If a company, like Ethiopian Pharmaceuticals Manufacturing Sh. Co. is able to meet the temporal needs of its customers by modifying the quality of its order processing, product availability, packaging and delivery of products on time, it can be inferred that it has an excellent quality of physical distribution. Therefore, it has to be noted that physical distribution has a great impact on the timeliness in the order processing, product availability, packaging and delivery of products.

In this regard, when coming to the company under study- Ethiopian Pharmaceuticals Manufacturing Sh. Co. the student researcher could have some information on the quality of physical distribution of the company through preliminary observation and informal discussion with customer. And from the preliminary observation and informal discussion with customers the student researcher could identify the lack consistency of punctuality in the case of delivering and product availability to customers.

Marketers are giving special attention to physical distribution because it can assume a competitive level of serving the demand while holding down the total cost of distribution as much as possible. Companies lose customers when they fail to supply goods on time. In this regard, when coming to the company under study Ethiopian Pharmaceuticals Manufacturing Sh. Co, the student researcher intended to examine how transport, inventory management, order process, warehousing and packaging influence customer satisfaction.

1.3. Basic Research Questions

1.4. Main research Question

The main research question of this study is to what extent the physical distribution practice determine customer satisfaction; in pursuit of the main research question this research intends of answer the following specific research questions

- How transportation affect customer satisfaction?
- What is the effect of ware housing management on customer satisfaction?
- In what way inventory control affect customer satisfaction?
- What is the effect of order processing on customer satisfaction?
- What is the effect packaging on customer satisfaction?

1.5. Objectives of the Study

1.5.1. General Objective

The main objective of the study is to evaluate the effects of physical distribution practiceson customer satisfaction.

1.5.2. Specific Objectives

- To investigate effect of transportation on customer satisfaction
- To examine to what extent ware housing management determine customer satisfaction
- To investigate effect of inventory management on customer satisfaction
- To analyze the effect of order processing on customer satisfaction
- To evaluate effect of packaging on customer satisfaction

1.6. Significance of the Study

This study is significant for the company itself to use them to re-engineering their strategies on physical distribution in relation to transportation, order processing, inventory, and warehousing and packaging. It also will serve as a guide for other organizations who wish to improve their physical distribution. It will remind both public and private organizations that logistics starts with materials suppliers, goes through the organization then to the end users. Students and future researchers in related studies will find the study a very usefulguide. Besides, the research findings can provide the basis for further studies

1.7. Scope of the Study

The study examines performance of physical distribution activities and its relationship and customer satisfaction. It looks at the role and purpose of physical distribution activities in terms of the achievement of the customer service and customer satisfaction objectives. In looking at the relationship between physical distribution activities and the achievement of customer service objectives, the study concentrated on physical distribution activities (transportation, ware house management. Inventory control, packaging, order processing).

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1.8. Limitation of the Study

The big limitation is unavailability of previously done similar studies in this area on Ethiopian local pharmaceutical companies

1.9. Organization of the Paper

The research report have five chapters; The first chapter deal with back ground of the study, the basis upon which the study will make statement of the problem, basic question research, objectives of the research, significance of the study, delimitations or scope of the study. The second chapter contains basis of the study by reviewing the existing knowledge and literature about physical distribution mentioned by various several scholars. Chapter three presents the method and procedures that will be used in sample selection, data collection, analysis and presentation. It includes; sampling techniques, data collection method, study population, sources of data, sampling and sampling size and analysis method. Chapter four focuses on analysis and interpretation of the data collected through questionnaire. Chapter five will compromise four sections, which include conclusions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This research paper reviews relevant literatures, written by different authors on distribution and specifically on the area of physical distribution in order to conduct detail analysis and discussion on each and every element found in the physical distribution management.

2.1. Theoretical Review

2.1.1. An Overview of Distribution

Distribution is the process of making a product or service available for use or consumption by a consumer or business user, using direct means, or using indirect means with intermediaries. Or are the movement of goods and services from the source through a distribution channel, right up to the final customer, consumer or user, and the movement of payment in the opposite direction, right up to the original producer or supplier Ehikwe, A.C (2002).Havaldar and Cavale, (2007) defined distribution the management of all activities which facilitate movement and consolidation of time and place utility in goods. It's the art and science of determining requirements, acquiring them, distributing them, and finally maintaining them in operationally ready conditions for their entire lives.Sherlekar,(2004) generally classified distribution as channel members and physical distribution. The channel members mainly include; wholesalers, retailers and agents, whereas physical distribution comprises: transportation, inventory management, packing, warehousing, and order processing, material management, and customer's service.

2.1.2. Physical Distribution

Physical distribution service is defined as the interrelated package of activities provided by a supplier which creates utility of time and place for a buyer, and insures form utility. From the customer's perspectives, then, physical distribution service is the mechanism that assures goods will be available (Perreault, *et al*.1976). Physical distributions generally regarded as part of a general logistics concept, which also includes marketing customer service (Mentzer, Flint & Hult, 2001). As Xing and Grant (2006) declared, Physical distribution deals with finished products and is considered as a part of a firm's out bound logistics that incorporates a relationship between the firm and its customers. They also said that Physical distribution

provides time, place and form utilities that are crucial for customer service. Mentzer, Gomez, and Krapfel (1989) examined the evolution and development of Physical distribution and argued that its importance has grown over time; However Mentzer *et al*., (2001)claimed that attendant features of physical distribution service can be the leverage of creating competitive advantage for companies through differentiating companies with superior levels of service; the ability to deliver the right amount of the right product at the right place at the right time in the right condition at the right price with the right information is crucial in providing satisfactory customer service (Mentzer *et al*., 2001).

Mackinnon (1986) simply defined the main functions of distribution as: buying, selling, transporting, financing and storing. He also added the functions of risk bearing are involved since goods may be damaged and destroyed or dropped in price, and claimed that depending on the kind of goods involved, many customers have recently made or provided after sale service in addition to distribution. This is done in order to create confidence in the consumer to make regular purchases.

2.1.3. Physical Distribution Systems Concept

The physical distribution (PD) systems concept says that all transporting, storing and product handling activities of a business and a whole channel system should be coordinated as one system that seeks to minimize the total cost of distribution for a given customer service level, Perreault et al (2010:275). This systems approach to physical distribution management results in lower costs and better customer service which help to increase customer value and customer satisfaction.

The objective of physical distribution management (PDM) is the minimization of total cost with the maximization of time and place utility in goods (Coyle and Bardi 2000:338). Early work in the field was concerned with the realization of cost savings. But this cost savings was unconstrained while physical distribution service levels provided an inherent constraint upon physical distribution system. Physical distribution costs, i.e., transportation, warehousing, inventory, order processing, etc., are directly related to the level of service provided. No reasonable cost reduction decision can be implemented without consideration being given to the level of physical distribution service necessary for a company to retain its competitive position in the market place. As the physical distribution service matures, physical distribution service level

is being viewed as a variable that can differentiate the product in the market place and thereby improve upon the product's competitiveness.

2.1.4. Role and Importance of Physical Distribution in Marketing Strategy

Physical Distribution primarily is moving goods from origin to destination. Marketing strategy planning is based on meeting customers' needs better than the competitors. It seeks to create a differential advantage within target segments by which a distinct competitive position relative to other companies can be established and from which profit flows. Delivering the right goods to the buyers at the right time and at the lowest possible cost is an important aspect of every good marketing program (Speh, T.W,1990).

According to Onah and Thomas (2004:381) the functions of physical distribution can be classified into four major areas:

1. Location of distribution centers: these may be company owned centers, public warehouses or centralized distribution centers where products are stored for a longer periods
2. Development and maintenance of an inventory control system
3. Development and maintenance of an order-processing system and a customer service department
4. Determination of the best transportation method

Wilson and Gillingan (1997:5) said that the way in which a differential advantage might be achieved and sustained is via the manipulation of the elements of the marketing mix: product, price, promotion and place. Final price of products are affected to a large extent by the physical distribution activities. Companies selling products provide a discount schedule for larger purchase quantities. Also transportation companies provide a price discount schedule for shipping larger volumes. Efficient warehousing and transportation systems can exploit these discounts and lower their operations costs and final product price for their customers. Physical distribution or logistics activities are very expensive. But Physical distribution management seeks to minimize the costs of distribution while providing adequate level of customer service. Physical distribution ensures that costs and customer satisfaction are optimized. There is no point in making large savings in the cost of distribution if, in the long run, sales are lost because of customer dissatisfaction.

It is therefore possible for companies to compete on the basis of providing a product either at the lowest possible cost so that the customer will buy it because it is the least expensive or at the highest possible value to the customer, if it is exactly where and how the customer wants it. Some companies may try to use both strategies because there are many products that are not sold on the basis of their brand name alone but also on the basis of availability or price Doyle, P. (1994).

2.1.5. Physical Distribution Management Activities and their Interrelationship

Kahhana, K. (2002).explains physical distribution management is the term describing the integration of two or more activities for the purpose of planning, implementing and controlling the efficient flow for raw materials in process inventory and finished goods for point of origin to point of sale and consumption.

Given the importance of physical distribution services, managing these services is an important component of the firm's marketing management. One of the primary steps in managing physical distribution service is to detect important elements of physical distribution service, from the viewpoint of retailers as intermediate customers. This means asking customers which aspects of physical distribution they feel are important (Jackson, Keith & Burdick, 1986).

Since the physical distribution service is important to purchasers in evaluating and selecting suppliers, it will be useful to explore their satisfaction of the overall services they receive. Such analysis may help distributors to identify the components of physical distribution service that need improvement, and it may help researchers identify components that serve as good surrogate measures for overall satisfaction (Perreault, *et al*. 1976).

2.1.5.1. Transportation

It is responsible for the physical movement or flow of materials and goods in the supply chain. The logistics or physical distribution manger is responsible for selecting the modes of transportation used in moving the raw materials and finished goods or for developing private transportation as an alternative. The transportation system is the physical link connecting a company’s customers, raw materials suppliers, plants, warehouses and channel members, all of which represent the fixed points in a logistics supply chain. The fixed points in the logistics system are where some activities temporarily halt the flow of goods in the logistics pipeline. Consequently, the transportation carriers used to connect these facilities affect not only the

transportation cost but also the operating costs of the facilities and the prices paid by the ultimate users of the products (Lalonde, B. ,1990).

The transportation carrier a company utilizes to perform the link service is a decisive factor in determining the efficiency of operating the supply chain facility and partially determines the company's competitive edge and product demand in a given market area (Coyle et al 2003: 338). They also posited that the transport methods dependability and the degree of safe delivery also affect the inventory levels held at a facility, the utilization of materials handling equipment and labor, and the time and cost of communicating with the carrier to determine shipment status or to seek reparation for goods damaged in transit. Hence, as with any logistics activity decision, vendor price (carrier rate) is not the only selection criterion the company considers. Thus management must decide on both the particular carriers and the form of transportation to use.

Morden (1993: 186) states that the choice of transportation modes is a function of some variables which include customer service objectives for place and frequency of availability, volume and distance, product life and container type. There are various transportation modes available and each has specific advantages within the context of the contribution of the physical distribution management to meeting customer service objectives. Kotler (2006) identified five transportation modes. These are air, road, water, pipe line, and rail ways.

2.1.5.2. Warehousing

Warehousing involves storage and inventory management. A relationship exists between transportation and level of inventory and the number of warehousing required. If a company uses a relatively slow means of transport, it will usually have to keep higher inventory levels and will usually have more warehousing space for this inventory (Frazelle1996).

Warehouses are primarily for receiving, storing, picking and shipping goods. Warehousing refers to the activities involving storage of goods on a large-scale in a systematic and orderly manner and making them available conveniently when needed. In other words, warehousing means holding or preserving goods in huge quantities from the time of their purchase or production till their actual use or sale（Mohan, V.E., 2010）.

- **Selection of warehouse**

Warehouse Management and Physical Distribution are important flow control activities in the supply chain network. Regardless of the efficiency with which all preceding activities have been conducted, these activities have major influence in determining the degree to which total customer service level is achieved. In present global business environment, the quality of warehousing and distribution management can have major impact on corporate performance and profitability. The following flow chart clearly shows hierarchy of decisions to be made about the selection of warehouses in the strategic marketing policies with an objective of achieving max customer service level (Speh, T.W. 1990).

- **Location of warehouse**

It is apparent that no seller can be equally near all customers or prospective customers. The space and time also impose significant limitation on the movement of goods from seller to buyer. In consequence, the location of the seller's production and distribution facilities in relation to those of customers is an important decision making process (Frazelle, 1996).In this context, the location problem can be three types:

1. Locating a warehousing system at the production facility itself;
2. Locating a single central distribution warehousing system away from the production plant
3. Locating warehousing system at more than one place.

But for any type of problem, the optimal location is the one that is most likely to achieve the maximum rate of return on investment over the long run. For this optimal criterion, as a general rule, industrial companies tend to conform to four locationorientations; raw materials, labor market, or power. Depending on the nature of production process, the types of materials required the characteristics of the end product and the tendency of buying companies to cluster in a given area, proximity to raw materials may be in overriding consideration.

2.1.5.3. Packaging

The packaging of a product is broadly determined for product promotion and product protection. The protection function is particularly pertinent to physical distribution. In addition to protection, when designing packaging for logistics purposes, packages should be easy to handle, convenient to store, readily identifiable, secure and of a shape that makes best use of space. The type of transportation selected affects packaging requirements both for moving the finished products to

the market and for the inbound materials. For example, rail or water transportation requires additional packaging expenditures because of greater possibility of damage. In analyzing trade-offs for proposed changes in transportation modes, physical distribution manager must examine how the change will influence packaging costs (Agrawal, 2003).

Also Kahanna, (2002) define as the use of containers and parts together with the decoration and labeling of product in order to contain, protect and identify the merchandise and facilities the use of product.

- **Logistical Function of Packaging**

Containment: From logistical and supply chain management point of view, the containment function of packaging is narrowed as it refers to minimization of weight and space requirement on packaging so that overall logistics can be reduced by means of minimization of transportation and storage cost.

Protection: Protects the products from spoil, discolor, loss of fragrance, damage, break, contamination, or physical deterioration of the products.

Utilization: The logistical operation like truck loading, storage in warehouse and warehouse order and picking productivity are affected by package utility.

2.1.5.4. Materials Handling

Materials handling is concerned with the movement of goods into a warehouse, the placement of goods in a warehouse and the movement of goods from storage to order picking areas and eventually to dock areas for transportation out of the warehouse. Materials handling is usually concerned with mechanical equipment for short distance movement. Such equipment includes conveyors, forklifts trucks, overhead cranes and containers. Packaging or container must be compatible with materials handling designs and materials handling designs must be coordinated so that the company may find it economical to use the same forklift trucks in the plants and in the warehouse (Data A.K:2003).

This function is concerned with various aspects of handling products and materials throughout the distribution system. The physical handling of goods involves inventory, warehousing and transportation activities throughout the distribution network (Bonoma, T. and Johnson, W.J,1990).

2.1.5.5. Order Processing

Order processing is considered as the key to customer service and satisfaction. Order processing includes receiving, recording, filling and assembling of products for dispatch. The amount of time required from the date of receipt of an order up to the date of dispatch of goods must be reasonable and as short as possible. Marketers are now using computer system to speed up order handling (Sherlerker, 2004; 426).

Order processing is the term used to identify the collective tasks associated with fulfilling an order for goods or services placed by a customer. The processing procedure begins with the acceptance of the order from the customer, and is not considered complete until the customer has received the products and determined that order has been delivered accurately and completely. Companies often invest a great deal of time and effort in designing an efficient strategy for processing orders, thus increasing the possibility of establishing a long-term working relationship with its customers, Jonsson, P. (2008).

- **Functions of Order Processing**

According to Agrawal (2003: 260) the major functions of order processing is order entry, credit checking, inventory availability check, order acknowledge, order editing and modification, order pricing order status inquiry, price and discount extension, back order processing raiser invoice, prepare transportation and shipping advice, shipping scheduling, reserve shipment, and return processing in case of defective delivery. Stanton (2000: 360) stated that the decisions should include provisions for billing, granting credits, preparing invoices and collecting of past-due accounts. “Consumer ill will can result if a company makes mistakes or is slow in filling orders”, he warned Predictable order cycle length and acceptable response time. By starting the process with an understanding of customer needs, companies can design.

- **Factors that Affect Order Time in Order Processing**

Every year business and individuals place orders over the telephone or through the internet. Although ordering is convenient for sellers and buyers, there is still a waiting time for order to be processed. While most orders are processed quickly and efficiently, a number of factors sometimes cause orders to be processed more slowly (Agrawal, 2003).

2.1.5.6. Inventory Management

Inventory consists of raw materials and parts, work-in progress, and finished goods located at production site and at various points in the distribution channel. Many problems can occur with inventories including stock-outs, incorrect inventory mix and excess inventory.

Inventory problems usually involve too much or not enough items in stock. Too much stock leads to excess expenses in carrying inventory and too little stock reduces customer service and creates customer dissatisfaction. Adequate levels of inventory are carried to reduce delays in producing and distributing products, provide flexibility in production scheduling and ordering materials, parts and finished goods. Inventory is also carried to have available products when and where buyers want to purchase them and also to take advantage of economies of scale in purchasing bulk quantities(Stock and Lambert, 2001).

The goal of inventory control is to minimize both the investment and the fluctuations in inventories which militate against filling customer's orders promptly and accurately.

According to Morden (1993: 181), inventory is held for three main reasons, the first is the achievement of marketing objectives for customer service; the second aim is the protection of production processes from variations in demand, so that production levels may be stabilized despite demand fluctuations around the planning norm or forecast. The third aim is to permit the manufacture or supply of items in economic quantities. Inventory size is determined by balancing market demand and costs. Market demands on inventory are anticipated through sales forecasts. Inventory costs include: a. acquisition costs; that is the cost of making or buying the products to put in inventory and Carrying or holding costs – warehousing, interest on investment, losses due to spoilage and pilferage, inventory taxes and so on. Inventory size is also determined to a large extent by the desired level of customer service. That is, what percentage of orders does the company expect to fill promptly from inventory on hand? Inadequate inventory causes stock-out. Stock-out conditions result in lost sales, loss of customer goodwill and often loss of customers. Nevertheless, to be able to fill 100 percent of the orders promptly may require an excessively large and costly inventory Related to the size question (how much stock to be held?) is the need to establish the optimum quantity to re-order (make or buy), when it is time to replenish inventory stocks. The size of replenishment orders affects inventory level to be maintained at various stocking points (Sharma 2007: 606). He says large order quantities may

reduce the frequency of orders to be placed to procure inventory items and reduce the total ordering cost but this decision will increase the cycle stock inventories and cost of carrying inventories.

2.1.6. Customer Satisfaction

Customer satisfaction construct occupies a significant position in marketing literature. Marketing scholars and practitioners agree that customer satisfaction serves as a strong predictor of variables such as repurchase intention, positive word-of mouth and customer loyalty. Customer's satisfaction research is mainly influenced by the "*disconfirmation paradigm*" This paradigm explains the concept of customer satisfaction. It states that a customer's feeling of satisfaction is a result of comparison process between perceived performance and expectation .A customer will be satisfied when the outcome of the service or product meets his or her expectations. If the product or service performance is more than his expectations, the customer is very satisfied and delighted (positively disconfirming). Contrarily, when the perceived or expected service or product performance is below or less than his expectations, we can strongly say that the customer will be dissatisfied (negatively disconfirming).Although most scholars agree on the disconfirmation paradigm , the nature of satisfaction remains ambiguous On one hand , satisfaction clearly arises from a cognitive process comparing perceived performance against some comparison standard while on the other hand , the feeling of satisfaction essentially represents an affective state of the mind .Consequently , some satisfaction scales tap the cognitive dimension of satisfaction, while others capture its affective dimension (Andreas and Wolfgang 2002:107-118).

Customer satisfaction is defined as "An emotional response to the use of a product or a service: and it is also a complex human process, which involves cognitive and affective process, as well as other psychological and physiological influences" (Chu, 2002:285).

Kotler et al (2007:144) say that customer satisfaction depends on a product's or a service's perceived performance in delivering value relative to the buyer's expectations. If the performance of the product or service does not correspond to the customer's expectations, the buyer is dissatisfied. If performance matches expectations, the buyer is satisfied.

Customer satisfaction is considered as a pre requisite for customer retention and loyalty. Delivering quality and achieving satisfaction can be the basis for developing relationship (Saura *et al*., 2008). Jing (2013) stated that satisfied customers are more likely will display loyalty behavior, i.e. repeat purchase and willingness to give positive word of mouth.

2.2. Empirical Literature

The role of physical distribution service in the marketing mix has been the focus of several studies over past years.

According to Mentzer, J.T, Games, R. and Krapfel, R.E(2000:54) from 1960s to date, four distinct categories of physical distribution service research have emerged: (1) identification of elements of physical distribution service (2) determination of the cost effects of providing physical distribution service (3) normative discussion of how physical distribution service should be measured and managed, and (4) empirical investigation of the impact of various physical distribution service packages on demand. Most of the works contained in these categories have sensitized management to the cost implications of PDS and partially explored the contribution physical distribution service makes to the overall marketing mix. This study gives a brief synopsis of some empirical studies of the relationship between elements of physical distribution service and attitudes, behavioral intent, sales and profits undertaken by some researchers

Walter and Grabner (2005) developed a model of consumer reaction to retail stock outs and tested it with 1, 433 shoppers. Average stock out revenue losses and consumer reactions were identified for single and multiple stock outs. In a follow-up study, Walter they found that upon first stock out 14% of consumers switched stores and after a second stock out 40% switched stores. Correspondingly, 64%switched brands after one stock out while only 25% did so following a second stock out.

Heskett et al (2003) found out that suppliers do not have accurate perceptions of the physical distribution they and their competitors provide but customers do have accurate perceptions of physical distribution received. Order cycle time variation is more important to customer satisfaction.

Silayoi & Speece (2007) found role of packaging of food items on consumers in Thailand which revealed that technology of packaging that showed convenience and ease of use messages strongly affected consumers' probability to buy.

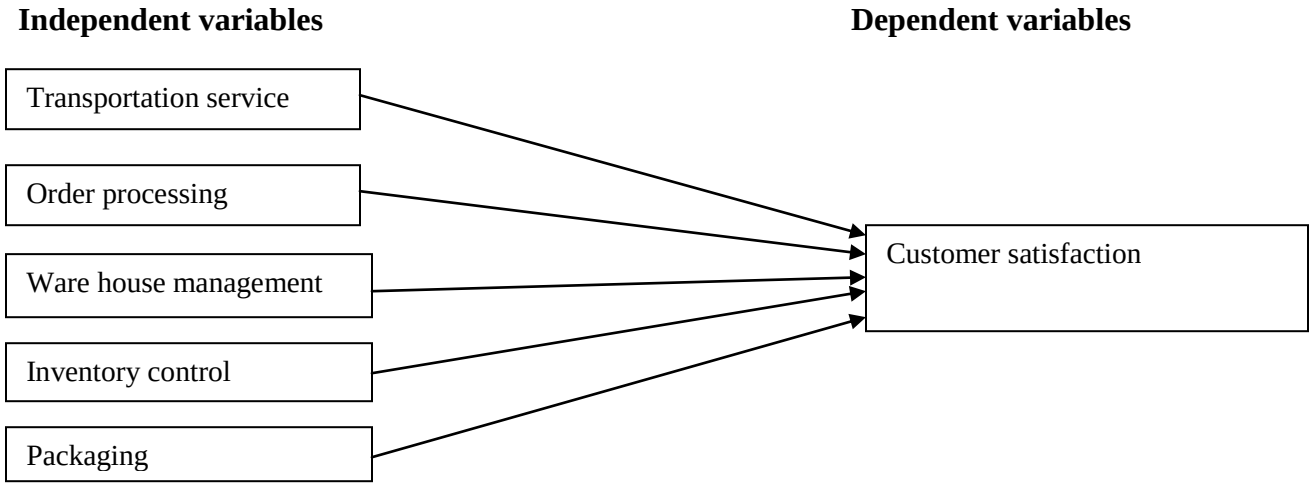
In the above researches showed relationship between stock out and customer reaction, order process and customer satisfaction and packaging and customer satisfaction.

The student to conduct the study on effect of physical distribution practice of EPHARM on customer satisfaction aims at transportation, warehousing, inventory control, order processing and packaging. The student used questionnaire, as means for data collection so as to establish the relationship between effect of physical distribution practice and customer satisfaction of EPHARM.

2.3. Conceptual Framework

Jabareen, 2009 defines conceptual framework as a network or a plane of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena.

In this research, there were independent and dependent variables. Independent variables were transportation, materials handling, and order processing inventory control and packaging while dependent variable was customer satisfaction.



(Source own,2019)

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter discussed the research methodology adopted and the various data collection method use for the thesis. Accordingly, the chapter includes the research design, sources of data, sampling technique, data collection method and method of data analysis. The research design gives the general description of the blue-print of the study whereas sample and sampling techniques deals with the process and techniques of taking samplesfrom the population. The data collection technique discuses on the techniques used for data collection and the last part deals with methods of data analysis.

3.1. Research Design

The study is explanatory. Because since the study explained the relationship between physical distribution variables and how these physical distribution dimensions affect customer satisfaction. As the purpose of this research design is the effect of physical distribution practice on customer satisfaction data were collected through survey questionnaires from the target population then multiple regressions were used to investigate the relationship between physical distribution practice and customer satisfaction Kothari (2004).

3.2. Research Approach

The researcher used quantitative research method. According to Kothari (2004), quantitative research is based on the measurement of quantity or amount. It is applicable to the phenomenon that can be expressed in terms of quantity. The purpose of quantitative research is to gather, analyze and measure statistical data. In quantitative research approach a number of objects are selected and studied in order to increase the ability to draw general conclusions (Kothari, 2004).

3.3. Population and Sampling Procedure

3.3.1. Target Population

According Saunders *et al*., (2007) a target population consists of the complete group of elements (people or object) that are specifically identified for investigation according to the objectives of the research project. Precise definition of the target population is essential and usually done in

terms of elements, sampling units and sampling frame. The target populations of the study are pharmaceutical retail out let in Addis Ababa. According to FMHACA website, there are 502 pharmaceutical retail outlets in Addis Ababa. Therefore; the total populations of this study were 502 retail shops.

3.3.2. Sample Size

The study recognizes that the size of the sample is an important factor that affects the accuracy of the survey study. Onodugo et al (2010:69) noted that the larger the size of the sample, the smaller the sample error and more representative the finding to the entire population. However, if a larger sample than what is necessary is used, resources are wasted and if it is too small the objective of the analysis may not be achieved. Hence, the size of the sample according to Jarboe (1996: 87) based upon pre-specified level of accuracy required to accomplish the research objectives. The level of accuracy of the study is set at 95% confidence interval or maximum allowable error of 5%.

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

Where, n = the sample size

N= the size of population

e = the error of 5 percentage points

$$N = \frac{502}{1+502(o.o5)2} = 222.616 \approx 222$$

By using Yamane's formula of sample size with an error 5 % and with a confidence coefficient of 95% (Yamane, 1997), the calculation from a population of 502 pharmaceutical retail outlets came up to a sample of 222 retail outlets found in Addis Ababa. Therefore, 222 retail outlets representatives were selected conveniently.

3.3.3. Sampling Technique

Convenience samplings were used as a sampling method of the study. Convenience sampling refers to "the sampling procedure of obtaining those peopleor units those are most conveniently available" (Zikmund et al., 2010). The study use convenience sampling method for reason that enables to obtain a large number of completed questionnaires quickly and economically based on the will of respondents.

3.4. Sources of Data

The study based on primary and secondary source of data the researcher use questionnaire in order to collect primary data the primary data for the study collected through structured questionnaire prepared for the head pharmacist. Each single questionnaire involves closed-ended Questions that will be adopted and submit to each pharmaceutical out let. A total of 222 questionnaires will be distributed to 222 head pharmacist of the retail out let. The secondary data were reviewed from FMHACA web site on the recent pharmaceutical retail outlets figure in Addis Ababa.

3.5. Data Collection Instruments

Each questionnaire has two parts the first section incorporate closed-ended questions to gather demographic profile of the respondent. The second questionnaire related to the study on effect of physical distribution practices on customer satisfaction. The questionnaires administered to respondents personally to be evaluated on a five point Likert scale ranging from "1"being strongly disagreed to "5"being strongly agreed.

3.6. Method of Data Analysis

After collecting all the data, the data processed, edited, classified and organized in order to enable the researcher to interpret and summarize the data. Data were analyzed using descriptive and inferential statistical techniques. In descriptive statistics, the research percentages, and frequencies as well as mean and standard deviation that help to analyze the data whereas in the inferential techniques which is known as the Ordinary Least Square (OLS) method were used, which helps to analyze the effect of physical distribution practice on customer satisfaction. Apparently, the raw data processed and analyzed using SPSS software version 24.

3.7. Study variables

3.7.1. Independent variables

Transportation: Is the movement of goods from the point of production to the point of sale. This variable expected to have a positive effect

Order processing: the process or work flow associated with the picking, packingand delivery of the packed items to a shipping carrier. Order processing also expected to have a positive effect

Packaging: product promotion and product protection

Inventory: Is the amount of goods being stored; inventory are expected to have a positive association with customer satisfaction

Warehousing: Is a place for load and unloading of products; warehouse location is expected to have a positive effect on customer satisfaction

3.7.2. Dependent Variables

Customer Satisfaction: it is the measure of how product and services supplied by the company meet or surpass customer satisfaction**.**

3.8. Reliability Test

Table 3.1 Reliability Statistics

Cronbach's Alpha	N of Items
.719	46

Reliability is the degree to which an assessment tool produces stable and consistent results, the study used Cronbach's Alpha value in order to determine the reliability of a construct as a measurement instrument to measure the reliability of the research instrument Nunnally (1978),cited in (Eze etal.2008)suggests that, scales with0.60 (60%)Alpha Coefficient and above are considered acceptable

Cronbach's Coefficient Alpha method was used to test the reliability of the data, and therefore, the data was (0.719) 71.9% reliable.

CHAPTER FOUR

RESULT AND DISCUSSION

In pursuit of analyzing the effect of physical distribution practice a total of 222 questioners were distributed for selected respondents; accordingly out of the total 222 questionnaires 212 questionnaires were returned successfully; however, 8 questionnaires were not properly filled so the researcher discarded and the rest 2 questionnaires didn't return at all. Therefore, the research had a questionnaire response rate of 95.49 percent. Hence, the data analysis the made below is based only the returned amounts of questionnaire.

4.1. Demography of Respondents

Table 4.1 Personal Profile of respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	134	63.2	63.2	63.2
	Female	78	36.8	36.8	100.0
	Total	**212**	**100.0**	**100.0**	
Age	21-30 years old	90	42.5	42.5	42.5
	31-40 years	86	40.6	40.6	83.0
	41-50 years	36	17.0	17.0	100.0
	Total	**212**	**100.0**	**100.0**	
Education	Diploma	40	18.9	18.9	18.9
	Degree	154	72.6	72.6	91.5
	Masters	14	6.6	6.6	98.1
	PHD	4	1.9	1.9	100.0
	Total	**212**	**100.0**	**100.0**	
Experience	0-3 years	46	21.7	21.7	21.7
	4-7 years	70	33.0	33.0	54.7
	8-11 years	58	27.4	27.4	82.1
	>12 years	38	17.9	17.9	100.0
	Total	**212**	**100.0**	**100.0**	

Out of the total respondents 63.2 percent of the respondents were male and the rest 36.8 percent of them were females. Respondents age were categorized in to three age groups, the first groups are those respondents who are between 21 and 30 years of age which accounts 42.5 percent of the respondents; the second group were 31 to 40 years of age, this age groups incorporate 40.6

percent of the respondents and the last and the third group were 41 to 50 years of age which contain 17 percent of the respondents. The analysis indicated that most of the employees who work in the organization belong to young age group.

Respondents were also asked about their educational status; accordingly, out of the total respondents 40 (18.9%) of them had diploma, 154 (72.6%) respondents were Degree holders and the rest 14 (6.6%) and 4 (1.9%) respondents had masters and PhD respectively. The analysis implied that except a few majorities of the customers who are clients of the organization had better educational status which makes them to judge things genuinely. Apparently, more than 21 percent of the respondents had up to three years' work experience, 33 percent of them had 4 to 7 years of work experience, and the rest 27.4 and 17.9 percent of the respondents had a work experience of 8 to 11 and more than 12 years respectively. This implies most respondents are more experienced which makes them to judge things genuinely on physical distribution practice of the organization.

4.2. Descriptive Analysis of Physical Distribution Practice

Table 4.2 descriptive summary of components of physical distribution practice

List of Item	N	Measurement scale in %						
		SD	D	N	A	SA	Mean	St. Deviation
Transportation	212	11.45	20.01	15.01	34.11	19.41	3.29	0.9975
Inventory	212	26.56	29.55	8.66	23.75	11.48	2.63	1.1603
Order process	212	12.95	16.85	8.90	38.66	22.60	3.41	1.1855
Warehouse location	212	3.3	7.07	23.2	44.82	21.55	3.74	0.9722
Packaging	212	2.82	10.94	4.24	47.44	34.52	4.00	1.0266
Customer Satisfaction	212	1.65	12.75	9.8	60.15	15.7	3.75	0.8725
Where, SD= Strongly Disagree, D= Disagree, N=Neutral, A=Agree, SA=Strongly Agree								

The intention of this research was analyzing the effect of physical distribution practice on customer satisfaction; in considering this, under this topic the descriptive statistics of each variable were discussed. Totally there were six variables including the dependent one (transportation, inventory, order process, warehouse location, packaging and customer satisfaction).Each of the variables were contains four to twelve questions which was measured using a likert scale. Therefore, a five point likert scale was the main instrument used to analyze the data. According to Scott (1999) for likert scale type data from 1 "Strongly Disagree" to 5 "Strongly Agree" if the sample is approximately normally distributed the interpretation should be for mean up to 2.8 is "Disagree", mean between 2.9 and 3.2 is "Neutral", and mean above 3.2 is "Agree". Hence, the analysis and finding of the descriptive statistics of each variable is done based on the standard set by scolt (1999) cited in (Sinvarsan,2012)

Accordingly, the first variable was issues related with the effect of transportation on customer satisfaction. Overall, majority (53.52%) of the respondents replied that the transportation service of the company is in a good position; meaning that the company had adequate distribution trucks equipped with refrigerator which deliver products on time without damage. Apparently, the variable transportation had got a grand mean score of 3.29 and a standard deviation of 0.9975. The grand mean score also suggests that the transportation service of the company is delivering the service at least that fulfills the minimum requirements of customers. On the contrary, considerable (31.46%) amounts of respondents had a reservation on the transportation service of the company. Availability of inventory and stock was the other important variables which anticipated having important relationship with customer satisfaction; concerning inventory 56.11 percent of the respondents replied the inventory practice if the organization was not good; according to the respondents the firm didn't maintain adequate inventory size, didn't readily avails stock for all order sizes and also customers' orders are not fulfilled at reasonable lead time. The variable inventory had a mean score of 2.63 with a standard deviation of 1.1603. Based on the standard measurement of Scott (1999) the results of the grand mean score of inventory falls at disagree level; meaning that the inventory management practice of the organization is not good. Order process was the other important anticipated variables; this variable measures to what extent the firm responds timely to special request, customers order are entertained according to their arrival time, orders are filled with accuracy, the firm keeps ethical standard in serving customer equally, the firm deliver effective and without defect order and etc.Accordingly, 61.26

percent of the respondents agreed that the company is in a good position concerning order process. The mean score of 3.41 also indicated that customers are satisfied with a greater extent with the order process of the company, since a mean score greater than 3.2 is an indication of a positive response as mentioned by Scott (1999).

Warehouse locations were also taken as one of the components of physical distribution practice that could determine customer satisfaction; the variable warehouse location measures to what extent the firm's warehouses are located in a convenient place with attractive facilities and modern equipment. Accordingly, 66.37 percent of the sampled customers were agreed that the company's warehouse system were good and with standard facilities. The variable warehouse had a mean score of 3.74 with a standard deviation of 0.9722 which directly fall on agree level. Both the frequency and mean score shows that the company's warehouse system is in a good standard that fulfilled the customer's expectation although some didn't agree with that. Packaging was the fifth factors which were considered as component of physical distribution practice that determine customer satisfaction. Packaging concerns products package adequacy, convenient to handle with adequate information like expiry date and its protection of products against damage during delivery. In this regard very majority (81.96%) percent of the respondents were well satisfied with the company's packaging process; meaning that adequate products are packed in a convenient way for handling with right labeling and strong cover. Apparently, the mean score of packaging is 4.00 with a standard deviation of 1.0266. The results of the mean score suggested that the company is packed its products in a way that satisfy its customer.

The overall customer's perception was also measured towards the physical distribution practice of the company; meaning that to what extent customers are satisfied with the order filling process, with the way that commercial orders are dealt and with the company overall physical distribution practice. Accordingly, more than 75 percent of the respondents replied that they are well satisfied with the over physical distribution practice of the company. Moreover, the mean score of 3.75 suggests that customers are expressed their satisfaction with their agreement level.

4.3. Correlation Analysis

Table 4.3 Correlation analysis of dependent and independent variables

		Customer Satisfaction	Transportation	Inventory	Order Process	Warehouse Location	Packaging
Customer Satisfaction	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	212					
Transportation	Pearson Correlation	.050*	1				
	Sig. (2-tailed)	.004					
	N	212	212				
Inventory	Pearson Correlation	.165*	.277**	1			
	Sig. (2-tailed)	.016	.000				
	N	212	212	212			
Order Process	Pearson Correlation	.080*	.341**	.045	1		
	Sig. (2-tailed)	.024	.000	.516			
	N	212	212	212	212		
Warehouse Location	Pearson Correlation	.260**	.046	-.103	.103	1	
	Sig. (2-tailed)	.000	.506	.133	.135		
	N	212	212	212	212	212	
Packaging	Pearson Correlation	.098	.057	-.115	-.068	.277**	1
	Sig. (2-tailed)	.153	.413	.094	.325	.000	
	N	212	212	212	212	212	212

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

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

The correlation analysis is done in pursuit of testing if there is any bivariate relationship between the dependent and each of the independent variables. The analysis were done in order to look physical distribution practice from five perspectives transportation, inventory, order process, warehouse location and packaging; and their two way interaction with the dependent variable of customer satisfaction.

The analysis shows that there is moderate, positive and significant (r = .050, p = 0.04) association between benefits of the transportation service of the company and customer satisfaction. Inventory management practice of the company also had weak, positive and significant (r = 0.165, p = 0.016) association with customer satisfaction. There is a strong, significant (r = 0.80, p = 0.024) and positive relationship between the company's order process and customer satisfaction. There is also a significant (r = 0.260, p = 0.000) and positive association between warehouse location and customer satisfaction.

4.4. Regression Analysis: Effects of Physical Distribution Practices on Customer Satisfaction

4.4.1. Assumption Tests

4.4.1.1. Test of Multicollinearity

Table 4.4 test result of Multicollinearity

Variable	VIF	1/VIF
Transport	1.25	0.803160
Order	1.16	0.859762
Packaging	1.12	0.895372
Inventory	1.12	0.896330
Warehouse	1.11	0.902453
Mean VIF	1.15	

Multicollinarity is a problem that happen when there is a linear relationship between the dependent and each independent variables. Among different tests for the purpose of this research VIF test was performed to test whether the data is suffering from a multicollinearity test. Accordingly, the results of the test indicates the highest VIF is 1.25; which indicates the model

performed with no major multicollinearity problem among the explanatory variables, since the problem arises if there is any variable whose VIF result is greater than 10.

4.4.1.2. Test of Hetrosckedasticity

Table 4.5 Test result of heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of Cu_Satisfaction
chi2(1) = 12.26
Prob> chi2 = 0.0705

The second important assumptions of ordinary least square is the problems of hetrosckedasticity, which refers there should be constant variance between each disturbance term. Different techniques of testing hetrosckedasticity might be there; however, for the purpose of this research Breusch-Pagan test was used. The interpretation is done through the results of p values, if the p value is less than 5% significant level it is the indication of hetroscedasticity problem; however if the p value is greater than 5% level it implies the data is not suffering with the problem of hetrosckedasticity. Accordingly, as shown in the table below the results of the test indicates that there is no a problem hetroscedasticity since the p values is not significant.

4.4.1.3. Linearity

The other important assumption that should be fulfilled in performing a regression is the assumption of linearity, which refers all of the independent variables, should have a linear relationship with the dependent variable. Therefore, scatter plot technique was employed to test the linearity assumption and as shown in the graph below the assumptions are fulfilled.

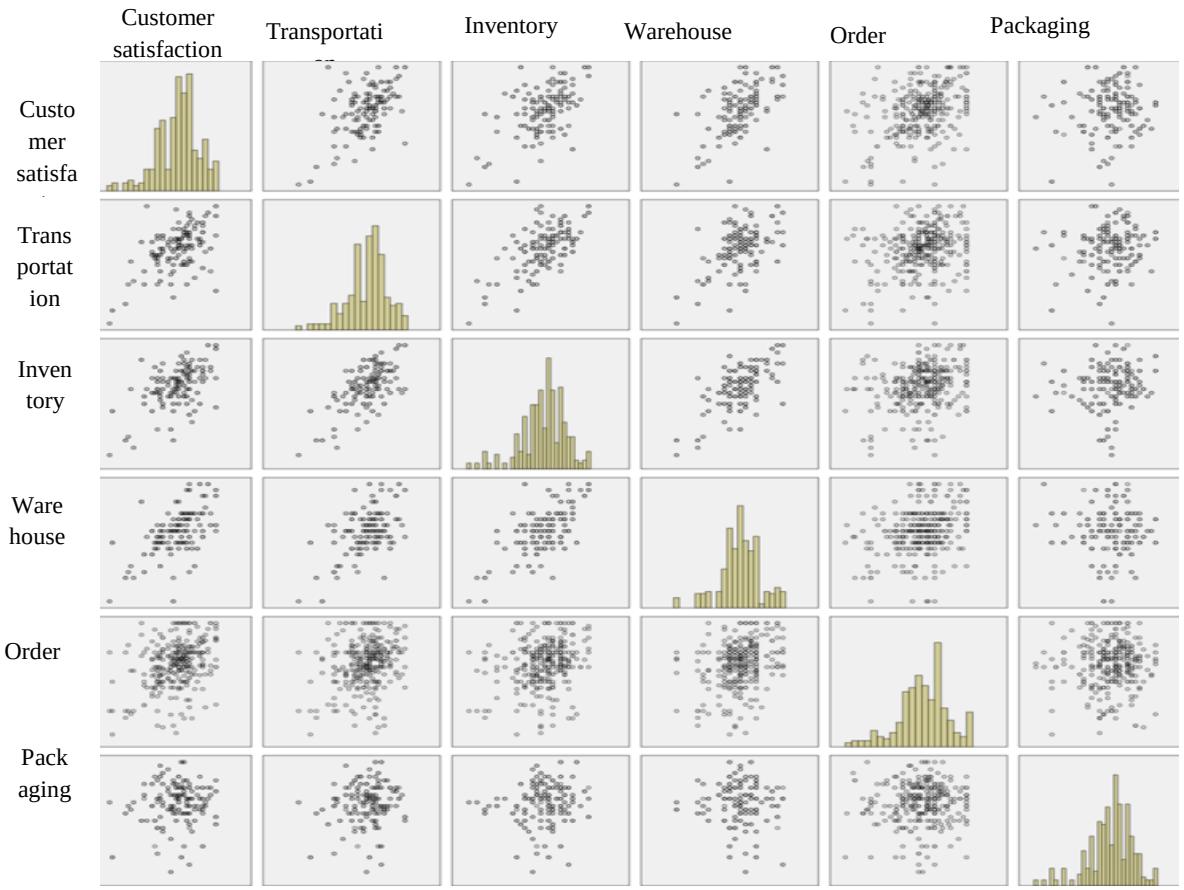


Figure 4.1 scatter plot test of Linearity

4.4.1.4. Normality

In order to run the regression the data should be normally distributed; this is the assumption of normality, therefore, in performing normality test a histogram test was used; and as shown in the graph below the residuals are normally distributed.

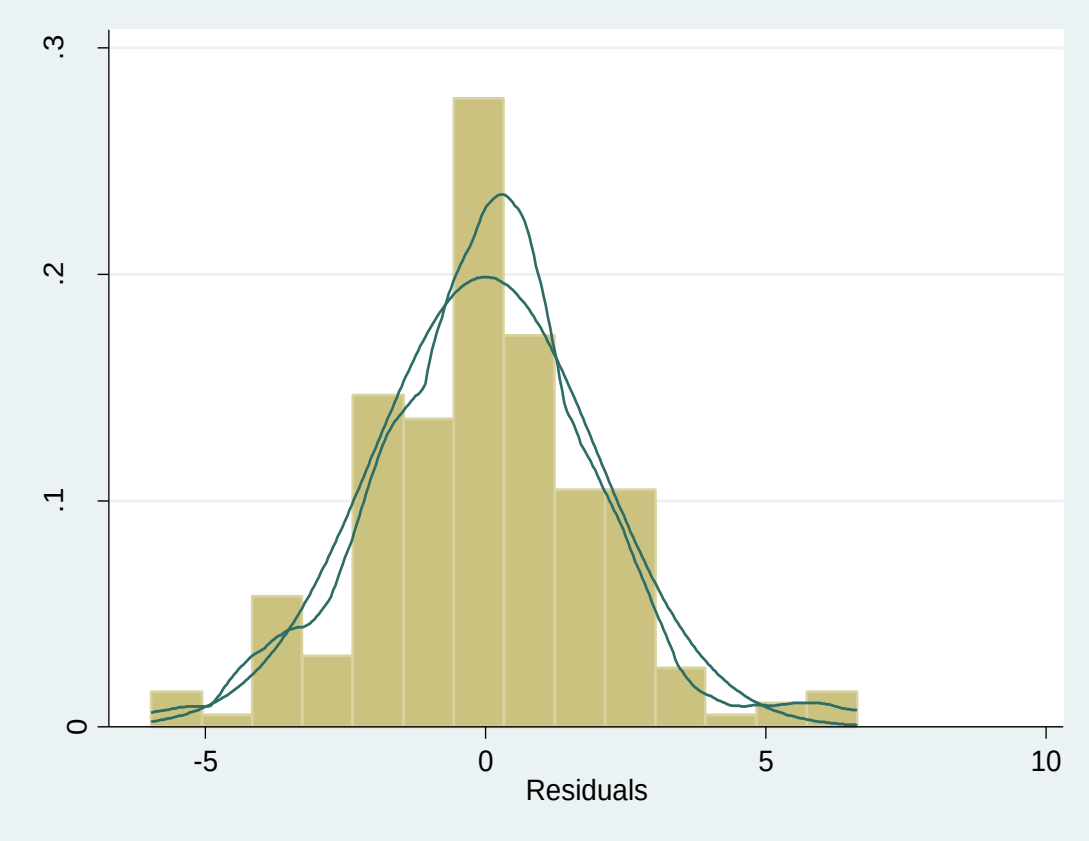


Figure 4.2 Histogram test of normality

4.4.2. Estimation Result

Table 4.6 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.786[a]	.618	.585	4.030

a. Predictors: (Constant), Packaging, Transportation, Warehouse Location , Inventory, Order Process

As a matter of chance all of the assumptions of OLS were fulfilled; hence, customer satisfaction was estimated using OLS without any amendment. As shown in the Model summary table above the coefficient of determination (R^2) for the model is 0.618 which indicatethe model explained 61.8% of the variation in the level of customer satisfaction.

Apparently, apart from the model summary and explanation of R^2 As shown in theANOVA table below the F-statistics and the p-value F= 5.18, $p < 0.001$, showing that overall model is statistically significant.

Table 4.7 ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	106.871	5	21.374	5.186	.000[b]
	Residual	849.054	206	4.122		
	Total	955.925	211			

a. Dependent Variable: Customer Satisfaction

b. Predictors: (Constant), Packaging, Transportation, Warehouse Location , Inventory, Order Process

The results of the econometric model estimation revealed that, transportation, Inventory management, order process and warehouse management were found to contribute significantly and positively to customer satisfaction whereas packaging didn't show a significant association with customer satisfaction. The effects of each variable are discussed below.

Table 4.8 results of estimated Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	14.302	1.817		7.869	.000
	Transportation	.080	.043	.136	1.851	.046
	Inventory management	.107	.043	.171	2.468	.014
	Order Process	.056	.027	.146	2.057	.041
	Warehouse management	.202	.055	.254	3.668	.000
	Packaging	-.008	.059	-.009	-.130	.897

a. Dependent Variable: Customer Satisfaction

Transportation service of the company had a positive and significant effect ($p<0.05$) on customer satisfaction. The positive coefficient of this variable suggested that, as the transportation service quality of the organization increases the satisfaction of customers also increases. Further, the positive coefficients suggests that as the transportation service quality increases by 1 percent the customer satisfaction also increases by 0.08 percent. The other variable were the inventory and stock availability of products; accordingly the analysis of the result reveals that there was positive and significant ($p<0.05$) association between inventory and customer satisfaction; the findings shows that, the positive coefficients of this particular variable suggested that when the service of inventory and stock availability of the organization increase the probability of customer satisfaction is also increases.

The variable warehouse management was also had a significant effect on customer satisfaction. Accordingly, management of warehouse had a positive and significant ($p<0.001$) effect on

customers satisfaction. The findings of the study revealed that the more the location of the warehouse is convenient and well organized in modern equipment the more will be the customer's satisfaction. Apparently, the variable order process had also a significant effect on customer satisfaction; the analysis revealed that there were positive and significant associations between order process and customer satisfaction. The positive sign of the result shows that as the order process is more organized and structured which fulfill customers demand the more will be customer's satisfaction.

Therefore the regression equation could have a form of:

$$y = 14.3 + 0.08Tran + Inve0.10 + 0.56Ordpr + WarLoc0.20$$

Where:

Y=customer satisfaction

4.5. Discussion

Monitoring and evaluation of physical distribution practice periodically is important and critical factor for the success of any company either manufacturing, whole seller or distributor. These researches could also be considered as part of those intentions. The concept of physical distribution majorly comprises five important components; these are transportation, Inventory, order process, warehouse location and packaging. All of these components had their own implication in managing the physical distribution practice; however, under this research how these components of physical distribution practice determine customer attitude and satisfaction were considered. In looking these, although all of the above mentioned variables determine physical distribution practice, however, in the case of selected organization packaging and warehouse management seems the best practice performed under physical distribution practice followed by order process and transportation service. This means that customers of Ethiopian pharmaceutical manufacturing share company were well satisfied with transportation service,the materials and conditions how products are packaged as well as its convenient warehouse management which are good and easily accessible by customers without spending much effort. Apparently, customers of Ethiopian Pharmaceutical manufacturing share company were comparatively less satisfied with the availability of stock inventories. In fact those mentioned physical distribution practices are expectedly determine customers expectation and satisfaction as explained on the descriptive statistics part; but the far more statistics didn't confirm that,

meaning that statistically four components were statistically determine customer satisfaction; the one packaging didn't show statistical effect on customer satisfaction this supports Perreault, *et al*. 1976) distributors to identify the components of physical distribution service that need improvement, and it may help researchers identify components that serve as good surrogate measures for overall satisfaction. This implies that Ethiopian Pharmaceutical manufacturing share company should consider carefully every activities and decisions that made on the other components of physical distribution practice, this is because any decisions and change on transportation service, inventory, order process and warehouse management had a great implication on customer's satisfaction; if the decisions influence customers negatively it pushes customers to look on other companies and the reverse is also true.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1. Summary of major findings

This research was done to find out the effect of physical distribution practice on customer satisfaction. The physical distribution practice were expressed by the transportation service, warehouse location, inventory, order process and packaging. In considering this the following are the summary of the major findings of this study:

- The descriptive statistics indicates that customers were satisfied at least with a lesser extent with the transportation service provide by the company; in addition the regression analysis also shows transportation service given by the company is significantly affect customer satisfaction.
- Concerning stock availability and inventory management system customers shows a complaint and reservation with the quality of the service as well as stock availability and management of the organization. Apparently, inventory had positive and significant effect on customer satisfaction
- The findings of the study further shows that order process of the company is at better portion, meaning that customers are getting at least what they are expected; apart from these the regression analysis shows that the order process had a significant and positive effect on customers satisfaction.
- Convenient warehouse location were also another component of physical distribution practice; customers are seems well satisfied with the location choice of the company where they can access easily without traveling far; apparently, warehouse location determine customer satisfaction positively.
- With regard to packaging, customers are satisfied and with the current packaging practice; however the regression analysis didn’t show a significant association with customer satisfaction.

5.2. Conclusion

The purpose of this study was to analyze effect of physical distribution practice on customer satisfaction. Particularly the research were intends to analyze to what extent transportation, inventory control, order processing, warehouse location and packaging determine customer satisfaction. In order to analyze that explanatory research design was employed where data was collected from 212 respondents with a 95 percent response rate, and Questionnaires were the main data collection instrument.

Accordingly, the descriptive analysis revealed that customers are well satisfied with the company's packaging system and relatively satisfied with its convenient warehouse location and its ordering process. On the other hand customers are less satisfied with the company's inventory control and management system, which indicates the company didn't provide adequate sock which can fit order size.

Both the correlation and regression analysis further revealed that out of the five anticipated variables four of them show a significant effect on customer satisfaction.

The findings of the study show that transportation had a significant effect on customer's satisfaction. Any positive change on transportation service increases customer satisfaction.

In addition to the above points the findings of the study revealed that inventory had a positive and significant effect on customer satisfaction; which indicates the more the inventory service the more will be the customer satisfaction.

Apart from the above points ordered process also had a significant and positive effect on customer satisfaction; therefore, the effect shows whenever the order process becomes good the satisfaction of customers also increases.

The last significant variable was warehouse location; this variable had a positive and significant effect on customer satisfaction; as the location of the warehouse is at good and accessible

Contribution of the study

To EPHARM

It gives a way forward towards improving the effect of physical distribution practiceof EPHARM as well as on how it may increase its customer satisfaction. Also, findings have revealed that there are inventory management problem for customers, therefore, the study will give knowledge to marketing managers and production managers to give priority in approvals of inventory management so as to ensure stock availability of the requirements which will enable to increase customer satisfaction and Goodwill to EPHARM‘s customers hence increase of profit for the company.

5.3. Recommendation

Based on the findings of the study the researcher forwards the following recommendation s:

- The first problems found by the analysis were the company had a poor inventory management system which dissatisfies its customers, and the company should look deeply its inventory and stock management system.
- The company not only looks its inventory management system, it also should use a different strategy to improve its inventory control system which would increases customers satisfaction.
- The company should endeavor to carry out serious and regular inspection on their stock available in the store, so as to ensure they don’t loss their customers due to under stocking.
- Improvement of demand forecasting should be the basis for the company to plan their internal operations and to cooperate among departments to meet market demand. These should define which products will be required, what amount of these products would be called for, and when they will be needed.
- Communications among warehousing, scheduling and production management.
- Avoid inaccurate inventory data

Limitation and Further Study

This study is limited to analyzing customers' effect of physical distribution practice on customer satisfaction in Ethiopia pharmaceutical company. The study is limited on a single company and the findings of the study cannot be generalized, therefore, further researches could be done with a more representative wider sample to reach to concrete findings.

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APPENDIX

QUESTIONNAIRE

ST.MARY UNIVERSITY

SCHOOL OF GRADUATE STUDIES

MBA PROGRM

Questionnaire to be filled by Pharmacy Retail outs

Research title: Effect of Physical Distribution practice on customer satisfaction in ETHIOPIA PHARMACEUTICAL COMPANY (EPHARM**).**I'm post graduate student in ST.MARY UNIVERSITY masters of business administration program. I'd like first of all to thank you for your cooperation in filling out this questionnaire. This questionnaire is considered as apart of the research thesis for the partial fulfillment of the requirements of masters of business administration. This questionnaire is designed to collect information in order to see the Effect of Physical Distribution practice on customer satisfaction in ETHIOPIA PHARMACEUTICAL COMPANY (EPHARM**).**

As your responses to the statements below have a great bearing to my thesis work, I kindly request you to fill it out carefully and genuinely. This information is going to be used just only for academic purpose and apart from that your response will be treated with great confidentiality.

General Instructions

There is no need of writing your name

Close-ended questions are answered by placing "X" mark in the box.

Thank you in advance,

Tarikua Belachew: Candidate of MBA

Part one

1. **Gender A) Male B) Female**
2. **Age A)** 21-30 **B**) 31-40 **C**) 41-50
3. **Education A)** Diploma B) Degree C) Masters D) PHD
4. **Experience A)** 0-3 years B) 4-7 years C) 8-11 years D) >12 years

Part Two: questions related to physical distribution practice

s\no	Effect of transportation on customer satisfaction					
		Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	The organization uses adequate distribution trucks/vans					
2	distribution trucks of the firm has refrigerated equipment					
3	Deliver products without damage					
4	The firm delivers the order on the required time					
5	The firm provide transportation services to any customer place					
6	damaged product during transportation is returnable to the company					
7	The transportation workers are well cooperative for any request					
effect of inventory management on customer satisfaction						
1	The firm maintains adequate inventory size					
2	The company readily avails stock for all order sizes					
3	Customers orders are fulfilled at reasonable lead time					
4	The assorted products (mix) are Always in stock					
5	The firm has Faced with stock out problem					
6	The firm accepts\allows small order size for small sized customers					
effect of order processing on customer satisfaction						
1	The firm accepts customer orders by checking the stock level					
2	Customers order are entertained according to their arrival time(“first-come-first serve”)					
3	Delivery in ordered amount without quantity restriction					
4	Orders are filled with greater accuracy					
5	Orders are processed with reasonable and tolerable time					
6	The firm’s order processing system is modernized					

7	The company's order processing Is reliable by supporting with documents					
8	The firm keeps ethical standard in serving customer equally					
9	The firm deliver effective and without defect order					
10	The firm responds timely to special request or un expected needs of customers					
11	The firm has substitute capacity to respond to special customer request					
12	The firm deliver right ordered brands					
effect of ware housing management on customer satisfaction						
1	warehouses are located in a convenient place to the customer					
2	The firms warehousing are equivalent to their customer size.					
3	The firm's warehousing facilities are attractive					
4	The firms warehousing are well equipped and modernized					
Effect of Packaging on customer satisfaction						
1	Products are adequately packed					
2	The products package are convenient to handle					
3	The packages have adequate information like expiry date					
4	Every package has leafle					
5	The package is storing enough to protect the product against damage during delivery					
Customer satisfaction						
1	I am satisfied with the order filling process					
2	It is pleasure dealing with the company					
3	I am satisfied with the way that my commercial orders are dealt					
4	I am very satisfied with the company overall physical distribution					