ADDIS ABABA UNIVERSITY
SCHOOL OF COMMERCE
DEPARTMENT OF MARKETING MANAGEMENT

FACTORS AFFECTING DISTRIBUTION PERFORMANCE OF PHARMACEUTICAL PRODUCTS DISTRIBUTORS IN ETHIOPIA

BY

NETSANET GETACHEW

MAY, 2018

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ADVISOR: -TEMESGEN BELAYNEH (Ph.D)

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Graduate Program

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DECLARATION

I, Netsanet Getchew declare that this research titled "Factors affecting distribution performance of pharmaceutical products distributors in Addis Ababa, is the outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the Research Advisor.

This study has not been submitted for any degree in this University or any other University. It is offered for the partial fulfillment of the degree of MA in Marketing Management.

By: Netsanet Getachew (GSD/0494/07)

Signature_____

Date _____

LETTER OF CERTIFICATION

This is to certify that Netsanet Getachew carried out her project on the topic entitled "Factors affecting distribution performance of pharmaceutical product distributers in Addis Ababa". This work is original in nature and is suitable for submission for the award of Master Art in Marketing Management.

Dr. Temesgen Belayneh (Ph.D)
(The Research Advisor)

Signature _____

Date _____

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ABBREVIATIONS AND ACRONYMS

OEM:	Original Equipment Manufacturers
GMP:	Good Manufacturing Practice
PFSA:	Pharmaceutical and Food Supply Agency
FMHACA:	Food, Medicine & Healthcare Administration & Control Authority
FMOH:	Federal Ministry of Health
NGO's:	Non Governmental Organizations
WHO:	World Health Organization
EDI:	Electronic Data Interchange
GMP:	Good Manufacturing Practice
SPSS:	Statistical Package for the Social Sciences
SCM:	Supply Chain Management
FDI:	Foreign Direct Investment
IPLS:	Integration Pharmaceuticals Logistics System

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ABSTRACT

This study examines the factors that affect distribution performance of pharmaceutical products distributers in Ethiopia. . The main objective of the study is to analyze the factors affecting distribution performance of pharmaceutical products and identify problems in order to redesign and improve the distribution chain. It investigates the effect of financial capacity, transport outsourcing, third party relations and use of information technology on the distribution performance of distributers in Addis Ababa. To this effect, a total of 185 samples of responders were selected from Addis Ababa pharmaceutical products distributers and 170 sample of population were returned back the questioner. The study uses sample survey for data collection through purposive random sampling for ensuring representativeness of the sample. Both quantitative and qualitative methods of data analysis are used. Descriptive statistics as well as correlation analysis are used for examining the relationship between variables of interest. The findings indicate that relations with government, donors and transport outsourcing followed by information technology and financial capacity have the greatest influence on distribution performance respectively. The finding of the study implies that information technology, transport outsourcing, relations with government and donors and financial capacity should be given due attention. It is thus critical to explore the current supply chain distribution trends in the pharmaceutical industry of some distribution centers in Ethiopia Finally this research mitigates the distributions problems, by proposing effective and efficient distributions of the pharmaceutical products at distribution company in Ethiopia after conducting a critical analysis to re -designing the existing distribution network using a mathematical model that increases the availability of pharmaceutical products at the right time and right place.

Keywords: *Information technology, Transport outsourcing, Relations with government and donors, financial capacity, Distribution performance.*

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Distribution is one of the most important business activities as it ensures the visibility and availability of the particular product in the market. Distribution encompasses a system of all activities that are related to the transfer of economic goods between manufacturers and consumers (Domschke and Schield, 1994). A channel of distribution facilitates the movement of a product from the producer to the final customer. In many cases, these channels include an organized network of producers, wholesalers, and retailers that develop relationship and work together to make products conveniently available to customer. By ensuring proper distribution of products to the customers help the companies to sustain in the market for a long time. Distribution refers to the steps taken to move and store a product from the supplier stage to a customer stage in the supply chain. Distribution occurs between every pair of stages in the supply chain. Raw materials and components are moved from suppliers to manufacturers, whereas finished products are moved from the manufacturer to the end consumer. Distribution is a key driver of the overall profitability of a firm because it affects both the supply chain cost and the customer experience directly. Distribution-related costs make about 20 percent of the cost of manufacturing. Various automated systems have helped both carriers and exporting organizations improve their distribution function. One such system, Micro Analytics, helps traffic managers solve their routing problems. This service can maximize vehicle usage, optimize routing to reduce mileage and better meet service requirements. It is reputed to enable users reduce distribution costs by up to 30 percent (Wolpert, 1999). Automation of the way customers submit purchase orders is yet another development in the pharmaceutical distribution sector. Electronic Data Interchange (EDI) reduces inventory, cuts costs and speeds product delivery.

For any production firm to be successful, it must be able to produce quality products and also ensure the products get to the consumer in time, in good condition and at the minimum cost possible. For this to be achieved there is need for an efficient and effective distribution logistics structure in place. Despite much effort by manufacturing firms to ensure that their distribution systems are efficient, many customers still experience delays for deliveries,

which show that distribution logistics performance performs short of customer expectations in most companies.

Various factors may cause adverse effect on the expected performance of distribution logistics system. This research project seeks to identify these factors and also determine in what way they may influence distribution logistics performance (Ostrow, 2009).

Process of distribution determines the route along which goods and services travel from producer/manufacturer through marketing intermediaries (such as wholesalers, distributors, and retailers) to the final user of the product. Channels of distribution provide downstream value by bringing finished products to end users. This flow may involve the physical movement of the product or simply the transfer of title to it. It can be defined as a distribution channel, a distribution chain, a distribution pipeline, a supply chain, a marketing channel, a market channel, and a trade channel (Rosenbloom, 2004).

Consequently a good number of research works have been conducted on this issue in different folds. A brief review of literature regarding pharmaceuticals product distribution in home and abroad has been presented in the following paragraph.

Kotler and Keller (2011) described that most producers do not directly sell their goods to the final users or the end users; between this two, it stands a set of intermediaries performing a variety of functions, these intermediaries constitute a marketing channel. Basically, marketing channels defines as the sets of interdependent organizations involved in the process of making a product or service available for using or consumption to the customer. Hill (2010) defines that distribution comprises of one or more companies or individuals who participate in the flow of goods and services from the manufacturer to the final user or consumer.

Rosenbloom (2004) mentions distribution channels have traditionally been seems as a network that made of interdependent institutions that have banded together for purposes of trade and mutual advantage. Coyle and Bardi (2003)studied that channel of distribution consist of one or more companies or individuals who participate in the flow of goods, services, information, and finances from the producer to the final user or consumer.

The primary goal of distributing medicines is to maintain a steady supply of pharmaceuticals to facilities where they are needed, while ensuring that resources are being used in the most effective way. A good distribution system is a cost effective system that provide acceptable level of service. A well-run distribution system has the following qualities: Constant and uninterrupted supplies; Maintain commodities in good condition until they are used; Minimizes losses due to spoilage and expiry; Prevents theft and fraud; Maintains accurate stock; Efficiently uses transport resources; Enables collection of accurate information for forecasting(PFSA,2016).

According to Sesric (2011) the global pharmaceutical industry has proved a Rapid growth over the years and emerged as one of the fastest growing industries in the world. However, world pharmaceutical production and consumption is still unevenly dispersed around the world with the developed countries as the leading Producers and consumers of pharmaceuticals products.

It must be noted that these are general guidelines which may be adapted to suit prevailing situations/conditions in individual countries. Currently Ethiopia's pharmaceuticals market is estimated to reach around half a billion dollars.(Frost and Sullivan in its 2012) survey estimated that Ethiopian pharmaceutical market could grow by 14% annually and reaches around one billion dollars by 2018.There are around nine local pharmaceutical manufacturers in the country, out of which only three have WHO's Good Manufacturing Practice (GMP), which allow them to export their products and participate in government tenders financed by donors. Some 200 importers of pharmaceuticals products and medical consumables are also operating in the country (FMOH, 2011).

As the study focuses on distribution performance, it will be helpful to consider the distribution system in Ethiopia. Logistics is increasingly becoming a strategic source of competitive advantage with the increase in global production sharing shortening of product life cycles and intensification of global competition. In the highly competitive business environment, quality of logistics has assumed great significance; it influences such decisions of firms as the choice of (i) country to locate in, (ii) suppliers to buy from, and/or (iii) consumer markets to enter in. Essentially, high logistics costs coupled with low service quality are a barriers to trade and foreign direct investment (FDI) and consequently to economic growth. Massive investments are being made worldwide with some of the best known investment gurus putting their bet on pharmaceutical industry which indirectly

linked to the growth of any economy (Prabhakarsri, 2010). Distribution is increasingly becoming a significant factor that can contribute to the realization of successful organizational strategy.

Distribution of pharmaceuticals follows integration pharmaceuticals logistics system (IPLS), through which all pharmaceuticals requested, reported received and managed integrated manner. Pharmaceuticals fund and supply agency is responsible for distribution of pharmaceuticals mainly to public hospitals, health centers, Woreda health office and private Pharmacies. In some cases, however, a person or entity involved in the distribution of pharmaceutical products is only involved in and is responsible for certain elements of the distribution process. This document sets out appropriate steps to assist in meeting the responsibilities involved in the different aspects of the distribution process. The guidelines are intended to apply to all steps in the entire distribution/supply chain.

The relevant sections should be considered by various role players as applicable to their particular role in the distribution process. The document does not cover specifically finished products in bulk, distribution of labels and packaging materials, as this is considered to be covered by other guidelines, e.g. GMP. Practice of repacking, e.g. in pharmacies and other settings, needs to be carried out in accordance with good dispensing practices. The storage, trade and distribution of pharmaceutical products are activities that are carried out by various companies, institutions and individuals. The nature of the risks involved may generally, however, be the same as those in the manufacturing environment, e.g. mix-ups, contamination and cross-contamination. There are thus aspects in distribution to which the principles of good manufacturing practice (GMP) should be applied. These include, but are not limited to, storage, distribution, transportation, packaging, labeling, documentation and recordkeeping practices.

The quality of pharmaceutical products can be affected by a lack of adequate control over numerous activities which occur during the distribution process. Furthermore the distribution process has generally not been well-emphasized with regard to the need for establishment, development, maintenance and control over the activities involved.

Effective distribution channels make products available to existing and potential customers, which lead to an increase in sales (Lancaster & Reynolds, 2004: 191; Kotler, 2003: 519; Subhash, 1993: 470). Banson (2002: 17) reported a significant positive relationship

between an investment in the training of agents in distribution channels and the long-term economic profitability of firms. Weernink (2000) found a marginally positive relationship between using Original Equipment Manufacturers (OEM) agreements and a firm's profitability, while Bucklin and Sunil (1998: 213) found a strong relationship between the use of distribution tactics, such as training new distribution channels, targeting specific niches, incentives for distributors and the competitive advantage of firms.

1.2 Statement of the Problem

This study explored the factors affecting the distribution performance for pharmaceutical products in Ethiopia in order to identify the cause for the problem of distribution performance.

Distribution of pharmaceutical drugs is a complex process which involves many steps, agencies, ministries and manufacturers. Existing government policies, rules and regulations for procurement as well as institutional structures are frequently inadequate and sometimes hinder overall efficiency in responding to the modern pharmaceutical market (WHO, 2007). World health Organization (WHO) states that access to medicine is a human right. Government of Ethiopia is focusing to avail pharmaceuticals at an affordable price and accessible to all citizens through pharmaceuticals fund and Supply agency. The Ethiopian pharmaceutical supply chain has several problems including no availability, unaffordability, poor storage, lack of stock management and irrational use. In addition to these the right products, right quantity, and right quality are not available at the right time, right place, for the right cost due to poor distribution system. Most of the time pharmaceutical products are not given first priority, due to the national hard currency problem the lead time increases. But this is usually for revolving drugs. For program drugs since it is obtained through donation currency problem is not observed.

The agency tries to improve delivery of the right medicine at the right time with reduced cost. However, still problems are observed due to an increase in the need of pharmaceutical products in the country, and less efficiency of distribution with the existing distribution network (Eyob Lissanework, 2013).

The agency’s warehouses are manually operated with most items stored in shelves on floor pallets. Items are moved without mechanical assistance. In addition the PFSA hubs are constrained by shortage of vehicles, portable cold chains, cold rooms, racks and pallets. The hubs are also not sufficient to satisfy the need of the people because of our population

and increasing economy with the relevant demand and disease epidemiology. This causes unbalanced supply and demand on the pharmaceutical products in the country. In addition to these there is weak integration, collaboration and control among hospitals, health centers, health posts and clinics with distribution company. A crucial component of Pharmaceuticals Supply Chain activities is the efficient and effective warehousing and distribution System. Various factors may cause adverse effect on the expected performance of distribution logistics system. This research seeks to identify the factors and also determine in what way they may influence distribution logistics performance. The major contributing factors that affect distribution performance of distributers of pharmaceutical products are many in Ethiopia public sector. This research investigates the effect of financial capacity, Transport outsourcing, third party relations and use of information technology on the distribution performance of distribution Company.

1.3 Research Questions

In view of the aforesaid problem, this study attempts to provide answers to the following research questions:

1. Is there a relationship between financial capacity and distribution performance?
2. Is there a relationship between information system and distribution performance?
3. Does transport outsourcing have an impact on distribution performance?
4. How does the relationship between donors and governments affect distribution performance?

1.4 Objectives of the Study

1.4.1 General Objectives of the Study

The overall Objective of this Study is to Determine Factors affecting Distribution performance of distributors of pharmaceutical products in Ethiopia.

1.4.2 Specific Objectives of the study

- To assess the relationship of financial capacity and distribution performance.
- To assess the association of transport outsourcing and distribution performance.
- To examine the relationship between information systems and distribution performance.
- To examine the impact of donors and governments relationship on the distribution performance.

1.5 Definition of Terms

Pharmaceuticals: -referred to as medicine, medication or medicament, can be defined as any chemical substance intended for use in the medical diagnosis, cure, treatment, or prevention of disease (US, 2008).

PFSA Hubs:-Branches of PFSA company.

Product: -This is anything acquired either as tangible or intangible which closely meets the requirements of a particular need and yield enough satisfaction to justify its continued existence (Kotler, & Adam, 2006).

Transport Out sourcing: -outsourcing is a process that involves the use of external logistics companies to perform activities using transportation systems of other company for distribution purpose.(info.plslogistics.com)

Information System: -is an organized system for the collection, organization, storage and communication of information.(https ://en.m.wikipedia.org)

Financial Capacity: -Typically entails recognition and quantification of coins/currency, conducting monetary transactions, managing a checkbook, comprehension of a bank statement, and can also involve more advanced tasks such as making investment decisions**.(**https://link.springer.com**).**

Distribution: -Is making a product available for the consumer or business user that needs it. This can be done directly by the producer or service provider, or using indirect channels with distributors or intermediaries.(https ://en.m.wikipedia.org).

Performance:-The accomplishment of a given task measured against present known standards of accuracy, completeness, cost and speed. In a contract, performance is deemed to be the fulfillment of an obligation, in a manner that releases the performer from all liabilities under the contract (www.business dictionary.com).

1.6 Scope and Limitation of the Study

1.6.1 Scope of the Study

As it is discussed in the problem statement, there are many problems that affect the distribution performance of some distribution centers in Ethiopia. This study mainly focuses on the pharmaceutical distribution network which creates a gap between the agency,

customers and suppliers and it will go back to the pharmaceutical supply chain distribution redesign and solve the problems. This research is bounded in Addis Ababa distributors and also specifically in 50 distribution companies, as the distribution system is huge in Ethiopia, it's difficult to assess all distributers in Ethiopia in this research. Though all the determinants of performance of distribution of pharmaceutical products by distribution company are found to be directly related with performance, yet there are still some factors that have not been incorporated in the study and which the distribution company can address to achieve better results than those currently prevail. For instance, there are other factors that can't be seen in this research, this factors lack of training about the resource planning at the enterprise level, Global market place, price and costs, centralization of distribution network economic, social cultural factors and striving to gain market and affects distribution performance of distributers. The research will be conducted on medical representative, product manager, marketing manager and others like technical manager that works in importer, distributor and wholesalers of pharmaceutical product in Addis Ababa city.

1.6.2 Limitation of the Study

This research investigation did not exhaust all the factors that influence distribution performance at distribution centers, and therefore there is a need for further research to identify any other factor that impacts distribution. Such factors may relate to geographical challenges, poor infrastructure, politics, and even legal mandate of distribution company. Due to personal attitudes, individual values and organizational policies, practitioners' in the medical profession keep most of their undertaking secret. And also Lack of written Document on Ethiopian Distribution performance for Pharmaceutical Products. Therefore, accessibility of records was limited; hence limiting the availability of more information that would have permit elaborate research.

1.7 Significance of the Study

As a research, the primary merits of the study goes to the university academics. Since there are few studies in the area, it will give a comprehensive starting point for more distribution performance measure for pharmaceutical products. Secondly Organizations, which are taken up as a case study, will get ideas on distribution performance for improved product and service delivery for their respective company. Public organizations, such as,(Federal ministry Of Health) FMOH, Pharmacies ,hospitals, clinics, health centers, health posts and

other interested organizations participating in the sector will get important concepts on the overall distribution of the pharmaceutical products and able to measure their pharmaceutical distribution supply chain and may take the recommendations to improve their distribution system. This will develop awareness for the opportunities to meet the need of the customer.

1.8 Organization of the Research

The study was organized under five chapters the first chapter includes the background information, statement of the problem, objective of the study, significance of the study, scope of the study ,limitations of the study, organization of the paper and operations definition, the second chapter deals with review of related literature and the proposed model based on the literature review. the third chapter is all about research methodology's used to conduct this study, the fourth chapter presents the finding from the responders where in the gathered are analyzed and interpreted and covers the statically analysis methods and details the result of this research that includes demographics statics, reliability, analysis ,frequency distribution, correlation and regression. Discussion and implication on relevant findings are presented in this chapter as well. Finally, the last chapter attempt to summarize or conclude and recommend possible solutions to the problems and assesses the limitations and future research.

CHAPTER TWO

REVIEW ON RELATED LITERATURE

2.1 Introduction

This chapter presents a review of the literature related to the purpose of the study. The chapter was organized according to the specific objectives in order to ensure relevance to the research problem. The review was undertaken in order to eliminate duplication of what has been done and provide a clear understanding of existing knowledge base in the problem area.

2.2 Theoretical Framework

The purpose of literature review is to acquaint the researcher with the history of distribution logistics skill that has been adopted by other researchers. It establishes various principals adopted by previous researchers in related fields and at the same time acknowledging their contribution to management training in what firms do not regard as a fundamental aspect in management of a firm. This chapter reviews different literatures related to the main focus of the study mainly, factors affecting performance of distribution in pharmaceutical products, coordination, supply chain flexibility, technology, transportation, warehousing capacity allocation, facility location, network design modeling etc. The supply chain management (SCM) literature offers many variations on the same theme when defining a distribution performance. The most common definition [Houlihan (1985), Stevens (1989), Lee and Billington (1993), and Lamming (1996)] is a system of suppliers, manufacturers, distributors, retailers, and customers where materials flow downstream from suppliers to customers, and information flows in both directions. The primary pharmaceuticals distribution management goal is to maintain a steady state supply of pharmaceuticals and supplies to health facilities where they are need (management science for health, 2012). More specifically, according to different theories about factors affecting distribution performance, involves financial capacity, transport outsourcing, information system and integration between donor and government, discussed by different researchers in other related journals

I. Financial Capacity

Financial capacity entails a broad set of abilities, ranging from basic skills of identifying and counting coins/currency, to conducting cash transactions, to higher level abilities of managing a checkbook and bank statement, to very complex activities of making investment decisions. As might be expected, such abilities can vary enormously across individuals, depending on a person's socioeconomic status, occupational attainment, and overall financial experience .Along with medical decision-making, driving, and mobility, financial capacity is a core aspect of individual autonomy in our society (Wolinsky F, Johnson R. 1991).

II. Transport Outsourcing

In many cases manufacturers purchased only transport services and did not consider outsourcing a wider range of logistical functions. In the electromechanical industry the question of company size is not adequate in trying to understand transport outsourcing. The distance of a company's freight and nature of shipped products are more important. High quality, bigger possibilities of expansion and low costs expectations were pointed as the most considered criteria. It may be mentioned that outsourcing of basic logistics functions like transport is based on operational and cost-based reasons. In the food industry supply chain scale (international) is positively related with an outsourcing decision. Companies with quality or flexibility priorities prefer to keep an activity in-house. They don't trust logistics service providers or shippers if they have sufficient knowledge of handling with particular goods (Mariusz Szuster No. 3 • 2010 • PP. 87–98).

III. Information System

The Internet as a global network allows users to interactively access to diverse media content and communication. The Internet is one of the most complex work ever created. It elevates the whole social organization to a higher level. Internet influence on the creation of digital economy and the so-called "Third wave" of capitalism that affects the complete transformation of the business world, allowing positive growth worldwide.

As technological innovations are evaluated dynamically as the main factor for economic growth, drivers of economic growth and development can be not only large corporations, but also small and medium-sized enterprises if they are able to create and develop new technological solutions for production of new products or services. According to modern theories of economic growth, technological innovation, particularly in developed countries

will be more important factor than capital growth because technological advances have increased the quality, thereby significantly contributing to the growth of economic power. Today, computer technology, especially the massive use of the Internet, will represent an important tool for companies to know who their individual customers and what are the effects on them of the marketing strategy implemented by the company to meet their needs.

Companies apply the Internet to send multiple information about, specific products and production lines in order to sell products and services directly to consumers which decrease the cost of final products. Companies are aware that modern consumers use information technologies to search, compare and find detailed introduction to the technical characteristics of the products, which brings them to the final decision. So in that regard, companies need to maximize their efforts and business strategies to be always in step with market trends and expectations of consumers (Riste Temjanovski, Tamara Jovanov Marjanov ISSN 1857-9973).

IV. Donors and Government Relationship

Approaches to partnership appear to operate as constraints to working on political-economy issues. First, there is a rather formal understanding among many donors of what it means to be working in partnership with government, an implication of which is that even when there is good understanding of the political-economy issues; it is not felt appropriate to act on that understanding. Second, the health partnership as presently practiced in both countries is very heavy in formal meetings, leaving little time for issue-based networking and developing influencing strategies (Kent Buse and David Booth with Grace Murindwa, Aziza Mwisongo and Andrew Harmer March 2008)

2.2.1 Measurements of Distribution Performance

Distribution refers to the steps taken to move and store a product from the supplier stage to a customer stage in the supply chain. Distribution occurs between every pair of stages in the supply chain. Performance measurement is defined as the process of quantifying the effectiveness and efficiency of action (Neely et al. 1995 Furthermore, performance measurement provides an approach to identifying the success and potential management strategies, and facilitating the understanding of the situation. Henceforth, accurate performance measurement is helpful in the improvement of SCM. Many firms look to continuous improvement as a tool to enhance their core competitiveness using SCM. Many

companies have not succeeded in maximizing their supply chains potential, because they have often failed to develop the performance measures and metrics needed to fully integrate their supply chain to maximize effectiveness and efficiency.

Lee and Billington (1992) observed that the discrete sites in a supply chain do not maximize efficiency, if each pursues goals independently. Distribution performance can be measured through delivery schedule of the Distribution Company, the quantity required, quality of the pharmaceutical products and distribution cost.

A. Delivery Schedules

Delivery performance has two basic characteristics, speed and reliability. Delivery speed is the elapsed time from the receipt of an order to final delivery. A firm with superior delivery speed can "deliver more quickly than its competitors or meet a required delivery date when only some or even none of the competition can do so". Typical strategies for improving delivery speed include streamlining the order entry process, holding inventory at key points in the supply chain (in stores or regional warehouses), maintain excess capacity with which to meet 'rush orders', and using faster transportation. Delivery reliability refers to the ability to deliver products or services on time. A firm can have long lead times yet still maintain a high degree of delivery reliability. Typical measures of delivery reliability include the percentage of orders that is delivered by the promised time and the average tardiness of late orders. Delivery reliability is especially important to companies that are linked together in a supply chain (Mohanty and Deshmukh 2006).

Therefore, the performance measures used must be formulated to serve as integrating tools for fostering long term, continuous improvement between and within the various stages of the supply chain. Aspects of supply chain operation that are not measured in understandable performance metrics such as cost will clearly hinder cooperation between the various coalitions found within the supply chain structure.

B. Quality of products

In this point we can see the pharmaceuticals products quality regarding expire date and having the right ingredient on the needed drug to the right disease. There is much published work on quality as a performance measure in supply chains Beamon (1999). Generally speaking, quality is the standard of a product which is related to the customer satisfaction level or fitness for use Juran (1978). In manufacturing or service, the term quality usually means conformance to predefined product requirements (Schniederjans1997). Any late

deliveries can be regarded as bad for the customers. Thus, quality is related not only to a product but also to the services provided. Therefore, those outcomes resulting in customer satisfaction are all important. High customer satisfaction is very important, as it is a key indicator of success Chan (2003).

The quality of pharmaceutical products can be affected by a lack of adequate control over numerous activities which occur during the distribution process. Furthermore the distribution process has generally not been well-emphasized with regard to the need for establishment, development, maintenance and control over the activities involved. The objective of these guidelines is to assist in ensuring the quality and integrity of pharmaceutical products during all aspects of the distribution process.

According to Stewart (1995) and Gunasekaran et al. (2004), an increase in delivery performance is possible through a reduction in lead time attributes. Another important aspect of delivery performance is on-time delivery. On-time delivery reflects whether perfect delivery has taken place or otherwise and is also a measure of customer service level. A similar concept, on time order fill, was used by Christopher (1994), describing it as a combination of delivery reliability and order completeness. Another aspect of delivery is the percentage of finished goods in transit, which if high signifies low inventory turns, leading to unnecessary increases in tied up capital. Various factors that can influence delivery speed include vehicle speed, driver reliability, frequency of delivery, and location of depots. An increase in efficiency in these areas can lead to a decrease in the inventory levels Novich (1990).

C. Quantity Required

Product and distribution scheduling is logistic activity concerning to the group quantities of good that cover when and where to be formed and delivered or it is one decision on when, where, and in what quantity the production should take place (Ballaou, 1978). Production and distribution scheduling could optimize income and source utilization at the product and distribution stages individually. The delivery consignment cost generally consists of a fixed and variable cost that is comparative to the total distance of the way taken. For instance, the number of shipments used and the specific routes taken determine the total distribution cost. Hence, in order to accomplish shorter lead times, more delivery shipments should be used, which would lead to higher distribution costs.

D. Distribution Cost

The profit of an enterprise is directly affected by the cost of its operations. Thus, many people understand its importance and influence to the whole performance. Indeed, it is the most significant direct kind of measurement (Chan 2003). Total cost is a sum of all its complex attributes. For different industries, the contribution of each attribute may be different. For a delivery service company, it should deliver its goods within the shortest time. Some may think that cost should be mostly a function of distribution and inventory cost, but a heavy contribution from inventory cost may in fact indicate a poor performance as the goods are always kept for a long time. A manager should investigate carefully each sub cost contribution to the performance.

Apart from the domestic supply chain, there is an international supply chain that may entail great geographical distance and time differences. The complication in a global supply chain may consist of multiple national markets which increase the costs, especially the incentive costs and subsidies or the sensitivity to long-term costs.

The adoption of performance metrics that accurately measure the supply chain as a whole, and that focus on measuring performance in terms of cost and uncertainty must be integrated into chain-wide continuous improvement activities. Walker and Alber (1999) note that supply chain performance measures continue to be strictly defined in terms that not only optimize local operations, but also reward the individual performance of chain members. Van Hoek (1998) concludes that current performance measures are designed for single members within the supply chain and do not reach across chain members. Cooper *et al.* (1997) identify that shortcomings in performance measurement limit improvement projects between supply chain members.

2.3 Empirical Review

2.3.1 Factors Affecting Distribution Performance of Pharmaceutical products

Following factors have been affecting the performance of pharmaceutical products of distributers, such factors are Financial Capacity, Transport Outsourcing, Information system and Donors and Government relationships.

Table 2:1: Empirical Review

S. No	Researchers	Topics	Major findings
1	Johnson(2006)	The influence of financial capacity on the distribution performance in the public sector.	This study seeks; performance of a distribution function in the public sector is strongly based on capacity and management of the finance function. Suitable and strong financial controls have to be maintained to ensure good financial management. Additionally, there must be capacity to prepare regular and reliable financial statements which have a system in place to safeguard programmed assets. Another important aspect of financial capacity that is relevant to distribution systems is the flow of funds. This relates to timeliness of receipt of funds for meeting various requirements in distribution processes.
2	Wick(2000)	The impact of transport outsourcing in the distribution performance in business outside suppliers.	Results of this study indicate that success or failure in distribution depends on care and caution in continuous management of outsourcing function to ensure the job being done by distribution partners as expected. if the third-party distributor's procedures and performance are not carefully monitored, there is the risk of permanently alienating the existing customers, who have been attracted through much hard effort. wick, observes that the key to a successful outsourcing relationship includes understanding the process specifying objectives, establishing internal procedures for evaluating performance against objectives, and deploying systems that help to manage the function effectively
3	Ceva(2010)	Effect of Information system in performance of distribution of all markets.	This study aimed that, the use of Information system to manage distribution increases efficiency, predictability and reduce waste in value chains, which has positive impact on all market players. Such tools of information system as cell phone and internet services, radio, and a wide range of digital devices and related tools, including cameras, GIS, a wide range of hand-held computing devices if appropriately used, has a potential of raising efficiency in

S. No	Researchers	Topics	Major findings
			the following distribution activities: record keeping, monitoring field agent activities, procurement operations, credit and payment tasks, input distribution, measuring productivity, and forecasting
4	(Cadotte and Stern 1979)	The effect of building partnerships among donor and government in the distribution performance.	The importance of building partnerships among donor and government lies in improvement of service delivery (Cadotte and Stern 1979). When the donors work harmoniously with the host government, they establish a common goal which they can guide in coordinating the use of available resources for effectively moving to achieve the goal. This specifically calls on donors to intensify their efforts to cooperate with the government in distribution of humanitarian supplies to various groups of people
5	Lambert, ,Boughton, and Banville(1986)	The influence of donor and government relationship in performance of service delivery.	This study also explained that the pressure donors bring to bear on partners' government to deliver on their mandate and the donor aid management systems that are designed to meet specific performance largely result in improved service delivery. However, poor relationship between the donor and the government creates Conflict resolution has consistently occupied a central role in models of the inter-organizational exchange process conflicts unless proper systems are in place. . But, other studies have shown that relations with government and donors have positively impacted on the distribution of humanitarian requirements by different government agencies

2.4 Research Hypothesis

Financial Capacity and distribution performance

According to Johnson (2006), performance of a distribution function in the public sector is strongly based on capacity and management of the finance function. Fleet maintenance, dispatch personnel emoluments and other costs should be well handled to ensure continued performance (Stern and Heskett 1969). Cooper (2006) argues that there can never be an effective distribution if an organization is challenged financially. Finances are used to modernize fleet, to compensate drivers, to buy enough stock for distribution and more importantly, to implement and maintain a robust information system. In view of the discussion, the following hypothesis is proposed for testing:

H1: Financial Capacity has a significant positive impact on distribution performance.

Transport Outsourcing and Distribution Performance

According to Wick (2000), success or failure in distribution depends on care and caution in continuous management of this function to ensure the job being done by distribution partners as expected.

Johnson (2006) observes that the key to a successful outsourcing relationship includes understanding the process specifying objectives, establishing internal procedures for evaluating performance against objectives, and deploying systems that help to manage the function effectively. This leads to the formulation of the following hypothesis for testing:

H2: Transport outsourcing has a significant positive impact on distribution performance.

Information Systems and Distribution Performance

Use of Information system to manage distribution increases efficiency, predictability and reduce waste in value chains, which has positive impact on all market players (Ceva, 2010).The following hypothesis is set up to evaluate this function.

H3: Information system has a significant positive impact on distribution performance.

Relations with Government and Donors and Distribution Performance

The importance of building partnerships among donor and government lies in improvement of service delivery (Cadotte and Stern 1979). But, other studies have shown that relations with government and donors have positively impacted on the distribution of humanitarian requirements by different government agencies (Brown 1979; Butaney 1989; Lambert, Boughton, and Banville, 1986). To take cognizance of the above views, the following hypothesis is formulated:

H4: Relationship between government and donors has a significant positive impact on distribution performance

2.5 Conceptual Framework of the Study

A conceptual definition is an element of the scientific research process, in which a specific concept is defined as a measurable occurrence or in measurable terms; it basically gives one the meaning of the concept. Conceptual framework is a diagrammatic presentation of the relationship between dependent and independent variables (Mugenda and Mugenda, 2003). Conceptual framework is either explained graphically or in narrative form and includes the main things to be studied, the key factors, concepts, or variables and the presumed relationships among them. In the study, the conceptual framework will look at the relationship between Distribution Performance and four indicators which includes Financial Capacity, Transport Outsourcing, Information System Donor and Government Relationship.

The theoretical model, shown in Fig.2.1.Is evolved. Determinants of distribution performance are congregated into four constructs of financial capacity, transport outsourcing, information systems and relations with government and donors. The relationship between these constructs with distribution performance is conceptualized as follows:

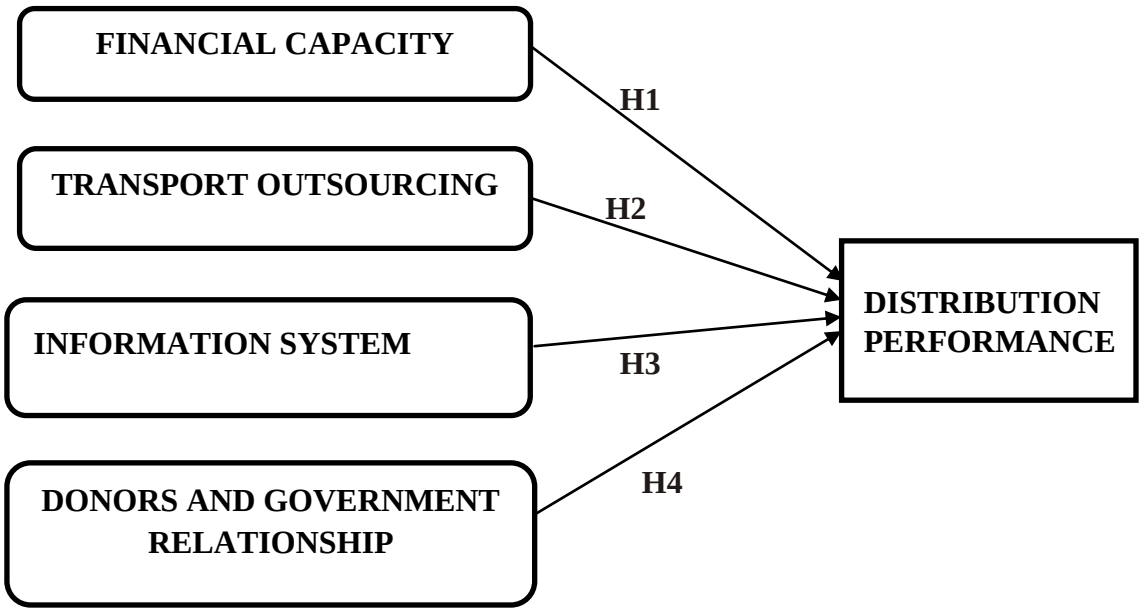

Figure 2.1: Factors affecting distribution performance

Adopted from (Angelmar, Reinhard and Louis, 1998)**.**

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The chapter describes the proposed research methodology employed for the study; it contains the research approach, method, design, population and sampling, data collection instrument and data analysis techniques. On the top of that, validity .reliability and Ethical Consideration of the study are also embodied in this chapter. Research methods may be understood as all those methods/techniques that are used conduction of research. Thus, Research methods or techniques refer to the method Researchers use in performing research operations. In other words, all those methods are used by the Researcher during the course of studying his research problem are term research methods (Kothari, 2004.p.7-8).

3.2 Research Approach

According to Singh (2006), research design is essentially a statement of the object of the inquiry and the strategies for collecting the evidence, analyzing the evidences and reporting the findings. It explains and justifies the type and method of data collection, source of information, sampling strategy and time-cost constraints (Saunders, 2012). The researcher used a descriptive research design where the study is under taken to describe determinants of distribution performance in the case of pharmaceutical product distributers in Addis Ababa city events.

3.3 Research Design

Descriptive survey research design will be used. A survey research seeks to obtain information that describes existing phenomena by asking individuals about their perceptions, attitudes, behaviour or values. Survey research is a descriptive research and it is an excellent vehicle for the measurement of characteristics of large populations. According to Kothari C.R.,(2004), descriptive research sets out to describe and to interpret what it is. It aims to depict the state of affairs as it exists and to describe some aspect of a phenomenon, i.e., the status of a given phenomenon. It can help to understand a topic and lead to causal analysis.

3.4 Data Type and Source of Data

The researcher uses both primary and secondary source of data. Primary data was collected through standardized questionnaire and secondary data was collected through journal and research report and government agencies.

According to Malhotra (2005), primary data are originated by the researcher for the specific purpose of addressing the problem at hand. Even if obtaining can be expensive and time consuming, primary data, being the most significant was gathered through structured questionnaires.

Secondary data were collected for some purpose other than the problem at hand (Malhotra, 2005). Secondary data are usually collected from journals, existing reports, and statistics by government agencies and authorities. The secondary data for this particular study was collected from marketing journals and other existing reports such as government agencies and authorities. These data helped to create better comprehension for the title study. As a general rule stated by Malhotra (2005), "examination of available secondary data is a prerequisite to the collection of primary data. Start with secondary data and proceed to primary data only when the secondary data sources have been exhausted or yield managerial returns." Thus, this study was conducted and analyzed primary data with the rationale of the secondary data

3.5 Data Collection Methods and Procedures

A structured questionnaire is used as the main instrument for data collection. The questionnaire was structured to provide answers to both open and closed ended questions that focused on objectives of investigation. The questionnaire comprised various sections. The first section constitutes respondents' general information, while rest of the sections relate to all the main variables. The questionnaire was developed on the basis of hypotheses and was administered by the researcher by hand, courier (Kombo and Tromp, 2006).

Questionnaire was the main instrument for primary data collection and is based on the determinants of distribution performance are financial capacity, transport outsourcing, information system and donor and government relationship .distribution company's staffs judgments is used as the source of data for analysis which is gathered in the form of questionnaire.

The data for the research was collected through structured questionnaire (5 point likert scale).The structure of the questionnaire were clear, easy to understand and straightforward to ensure that the respondents could answer the questions with no difficulty and interviews for product managers and medical representatives.

In order to reach the number of respondents required at the same time questionnaire was developed. The questionnaire was distributed to each target population, to be filled and returned back. The questionnaire was simple and not time consuming as the respondents are at their leisure time. The questionnaire was distributed at the working days where most of the staffs are available in the office. After collecting the entire questioner, the researcher tries to see what is properly filled and then go for further analysis

3.6 Sampling Methodology/ Sampling Design

3.6.1 Target Population of the Study

The population of interest in this study consisted of all pharmaceutical firms in Addis Ababa marketing medicines. Firms doing importation and then distributing in Ethiopia, as well as local manufacturers were surveyed. According to FMHACA there are 111 firms in ADDIS ABABA. A sample size of fifty firms will be selected and all the responders from this are 185. Purposive sampling method will be used. This method allows use of cases that have the required information with respect to objectives of the study. Cases of subjects are therefore will be handpicked because they are informative, or they possess the required characteristics. The sampling item will be the marketing manager or senior medical representative of the sampled pharmaceutical companies.

3.7 Variables and Measurement Instrument

The main questions in the questionnaire were measured attitudes towards brand preference and its determinant. Categorical questions were used for demographic variables such as work experience, job position & operational years.

3.7.1 Reliability and Validity

Reliability indicates the extent to which a variables or set of variables is consistent in what it is intended to measure (Hair et.al.,2007).Calculating Cronbach's alpha (α) has become a common practice when a multiple item measurement of a concept or construct are employed and were used, Since it's easier to use in comparison to other estimate.

Validity defined as the extent to which data collection method or methods accurately measure what they were intended to measure. To ensure the validity of the study: Data was collected from the reliable sources, from respondent who has experience. Furthermore this study were tested and examined by the advisor and other colleagues to determine its clarity. The reliability of the research instrument (structured questionnaire) was measured by the Cronbach's alpha.

Model Specification

In this Study regression model is employed the model given as follows.

Yi= (bi+b1X1+b2X2+b2x2+b3X3+b4X4) +Ei

Where:-*y*=distribution performance

bi=the coefficient of the constant predictor (*Xi*)

b1 - b4= y intercept

X1=Financial capacity

X2=Transport Outsourcing

X3=information system

X4=Donors and Government Relationship

Ei= the difference between the predicted and observed value of y for the i^{th} participant or Error term

Therefore, in this study the following multiple regressions were used:

Multiple R is a correlation between the observed values of y, the values of y predicted by the multiple regression models. Therefore, large values of the multiple R represent a large correlation between the predicted and observed values of the outcome. The model summary table reports the strength of the relationship between the model and the dependent variable, organizational performance of pharmaceutical firms.

3.8 Data Analysis Method

Data analysis means the categorizing, ordering, manipulating summarizing data to obtain answers to research questions with the purpose of obtaining meaning from collected data. The data collected based on the specified collection technique was classified based on similarities. Data was arranged, editing, for accuracy, uniformity, consistency and completeness. The data was then checked to verify errors omissions and inconsistencies. It was then arranged and entered into the computer in preparation for final analysis. Data

obtained from open ended questions was evaluated and checked based on the content of the data and was then used to explain the problem. The Data analysis include: descriptive statistics-to count the frequency of response, Reliability analysis-to test the internal consistency of the instrument, correlation analysis-to assess the relationship between variables of the study and multiple regression analysis –to assess the extent of influence of independent variables on dependent variables.

After collecting and sorting the questionnaires, the researcher checked completed questionnaires for analysis. The researcher coded and inserted data into a computer for electronic processing using the SPSS (Statistical Package for the Social Sciences) software as soon as the completed questionnaires were returned. SPSS was the main data analysis method as it will provide percentage based on the determinants. The data analysis is presented using tables.

3.9 Ethical considerations

In a study involving human participants, a number of ethical considerations need to be addressed. The crucial and important issue of participants' informed consent is to be attended first. Thus, all participants are advised of the key purpose of this research, which is to fulfill an academic research thesis. The safety of participants was not compromised in any way. Participants are ensured of confidentiality and anonymity. This was achieved by communicating to the participants that they should not have to identify themselves on the research questionnaire and that their data is given or shared to any person/organization. It was made clear to the participants that all data collected is for academic purpose only. The researcher honestly report data, results, methods and procedures, and publication status. The researcher did not fabricate, falsify, or misrepresent data and did not deceive colleagues, academicians, or the public. The researcher strived to avoid bias in data analysis, data interpretation and other aspects of research where objectivity is expected or required. The researcher keeps promises and agreements and act with sincerity; strive for consistency of thought and action.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter deals with presentation, analysis and interpretation of the data gathered from the respondents through questionnaire. Thus, the quantitative data analysis was incorporated in to this chapter.

The data was intended to collect 185 sample population identified by aforementioned sampling techniques. To this effect, a total of 185 copies of questionnaires were distributed to management team of Addis Ababa pharmaceutical products distributers. Finally 170 of sample population were able to return back the survey questionnaire. The return rates of the questionnaires were 92%, which is 8% of non-return rate is tolerable to respondents who have hardly zero relaxing time. Hence the researcher was decided to continue with the obtained 170 sample data for the analysis.

The chapter consists of three major parts. The first section deals with the characteristics of the respondents, the second part deals with descriptive analysis the variables and the third section presents the inferential analysis and interpretation of the main data.

4.2 Reliability Test

The study used Cronbach's alpha, to measure the reliability or to assess the internal consistency of the research instrument. Since multiple items were used to measure the distribution performance of pharmaceutical products (financial capacity, transport outsourcing, information system and donors and government relationship), the items in the scales were subjected to reliability testing using Cronbach's coefficient alpha to determine the internal consistencies (Saunders et al., 2003). Scales that produced Cronbach alpha coefficients greater than 0.7 were considered to be measuring the same underlying attribute (Nunnally, 1978) and were thus reliable.

As shown in table 4.1 below the Cronbach's alpha coefficients for determinant of distribution performance items of respondents is 0.886. This is greater than the minimum value suggested by Nunnally (1978). Therefore, the scales used in this study demonstrate reliability as well as it indicates the acceptability of the scale for further analysis.

Table 4.1: Reliability Statistics

Reliability Analysis			
		Cronbach's Alpha	N of Items
1	Financial Capacity	.792	4
2	Transport Outsourcing	.818	5
3	Information System	.828	5
4	Donors And Government Relationship	.851	5
5	Distribution Performance	.745	4
Overall		.886	23

Source: Own Survey, 2018 – SPSS 20

Pilot- testing of questionnaire was made with 10 pharmaceutical distributers, who are not members of the sample. Reliability coefficients were computed by internal consistency method using Cronbach Alpha.

As shown in table 1, the value of Cronbach's alpha is reported in the Reliability Statistics table for each five sub scales/ dimensions of variables that affects performance of distribution of pharmaceutical products distributors. The item total reliability ranges between 0.745 to 0.851, and a total reliability of 0.886 is much higher than the acceptable cutoff point (0.7) that shows a very high reliability. This has an implication that if this questionnaire is administered on similar environment in different scenario, the result would be 88% similar. This is an encouraging result to proceed to the analysis, because the reliability issue answered properly.

4.3 General Information of the Respondents

The researcher undertook to obtain the personal information on the respondent who participated in the study. It was important for the researcher to know the particulars for the participants in order to be able to have an objective assessment of the findings. Knowing respondents' information greatly promoted reliability of the data obtained for that reflected how well they understood the institution hence a greater level of accuracy and restored researcher's confidence of dealing with the right group. The underlying information concerning the respondents who availed their details formed part of the research findings.

This part of the questionnaire requested a limited amount of general information which Includes Gender of the respondents, work experience, age of respondents, Job Position of respondents in the company and age of the company in the distribution sector

4.3.1 Characteristics of Respondents

In this section, the researcher is trying to show how respondents distributed in terms of different characteristics of like: sex, age, experience some more.

Table 4.2: Demographic Profile of Respondents

Total respondents = 170		Frequency	Percent	Valid Percent	Cumulative Percent
Gender of the Respondents	Female	47	27.6	27.6	27.6
	Male	**123**	72.4	72.4	100.0
Age of the respondents	21-30yrs	26	15.3	15.3	15.3
	31-40yrs	**98**	**57.6**	57.6	72.9
	41-50	30	17.6	17.6	90.6
	Above 50yrs	16	9.4	9.4	100.0
Job position of respondents in the company	medical representative	65	38.2	38.2	38.2
	Technical manager	69	40.6	40.6	78.8
	Product Manager	33	19.4	19.4	98.2
	Pharmacist	3	1.8	1.8	100.0
Work experience of respondents in the company	Less than 1year	20	11.8	11.8	11.8
	1-5year	**86**	**50.6**	50.6	62.4
	5-10years	43	25.3	25.3	87.6
	Above 10yrs	21	12.4	10.6	98.2
Age of the company in distribution in Ethiopia	under 5yrs	12	7.1	7.1	7.1
	6-10yrs	40	23.5	23.5	30.6
	11-15yrs	36	21.2	21.2	51.8
	16-25yrs	**59**	**34.7**	34.7	86.5
	over 20yrs	23	13.5	13.5	100.0

Source: Own Survey, 2018 – SPSS 20

As shown under item 1 of table 2, the majority of respondents were males. That is, they are 123(72.4%). On the other hand, the female staffs in the pharmaceutical distribution company included in the survey were 47(27.6%). This implies that the participation of both sexes found to be un-proportional in the sector. The participation of females was seen very low.

Age distribution of the respondents under item 2, indicates that the majority of the respondents,98(57.6%) of pharmaceutical distributors were found in the ranges of 31-40,

whereas 30(17.6%) of respondents group were in the age group 41 – 50. In general 90% of the respondents groups were found in age group 20 – 50. That is almost all the respondents are working group adults.

Item 3 of table 2 shows the Job position of respondents in the company. 98.2% of respondents were working either as medical representative or Technical manager or Product Manager. Very few (less than 2%) of respondents were from Pharmacist.

Regarding work experience of the respondents, the majority 106(62.4%) had less than 5 years of experience, or 87.6% of respondent had less than 10 years of experience in the field. It could be possible to conclude that, the majority of management team of pharmaceutical product distributers are moderately experienced in the field, which is below ten years.

Regarding Age of the company in distribution, 12(7.1%) and 40(23.5%) of respondents respectively had a below 5 year and 6 – 10 years of company experience in distribution. Whereas, the majority of respondents 59(34.7%) had a 16 -25 years experience in distribution. Thus, from the data; we can infer that there is no much discrepancy between the respondents in their Age of the company in distribution.

Experienced businessmen most probably get more experience than new comers. Kristiansen *et al.,* (2003) found that the length of time in operation was significantly associated with the success of business. In their new small firms study, Duchesneau, and Gartner (1990) found what lead entrepreneurs in successful firms tended to be raised by entrepreneurial parents. Under such conditions of low asset specificity, with greater experience in foreign market activities, there was a positive incentive for exporters to integrate (Klein, & Roth, 1990).

4.4 Descriptive Statistics

4.4.1 Determinants of Distribution Performance

The aim of this research is to identify the major contributing factors that affect distribution performance of distributers of pharmaceutical products. Of those factors the researcher were focusing on investigating the effect of financial capacity, Transport outsourcing, use of information technology on the distribution and finally on donors and government

relationship that how those factors directly or indirectly affecting Pharmaceutical Product Distribution Performance.

To analyze the overall distribution performance of distributers of pharmaceutical products, 23 questions were developed. These questions were grouped in to four dimensions of financial capacity, Transport outsourcing, use of information technology on the distribution and finally on donors and government relationship.

In this through analysis the researcher want to investigate how far the distributors perceived those factors using statistical tools like number, mean and standard deviation.

The mean value represents the average of all customer response on certain dimensions while, standard deviation shows how diverse the responses of the respondents are that means if the standard deviation shows smaller number, it indicates that the response of the respondents shows close opinions and when the standard deviation is high, it indicates the response of the respondents shows high variation (Zaidatol & Bagheri, 2009).

Mean Score	**Description**
<3.39	Low
3.40 -3.79	Moderate
>3.80	High

Table 4.3: General, Descriptive Statics Results

	Mean	**Standard deviation**	**Valid N (list wise)**
1. Financial Capacity	3.7265	0.86613	170
2. Transport outsourcing	3.9435	0.89897	170
3. Information system	3.7976	.93934	170
4. Donors and governments relationship	3.9882	.78287	170
5. Distribution Performance	4.4841	.49403	170

Source: Own Survey, 2018 – SPSS 20

4.4.2 Impact of Financial Capacity

The objective of this facet is to investigate the influence of financial capacity on distribution performance.

In this section there are 4 questions each of which are related to positive effect of financial capacity for distribution performance. As it is seen in the table 4.5.1 the majority of respondents felt financial capacity has high impact by showing their agreement for all 4 items. In contrary, lack of financial capacity could lead to inadequate discharge for the performance of distributers in the sector.

As it is seen in the above table the average score of 4 items, which are related to financial capacity positive impact on distribution performance ranges 3.49 – 4.05, this could be round to 4. 4 was initially coded as agreement. The total mean score of financial capacity was 3.726 with SD = 0.866 which is almost equal to 4; and 2 represent agreement for the issues related for transport outsourcing. Both statistical tools has confirmed that the financial capacity of the firm have great impact on distribution.

4.4.3 Impacts of Transport Outsourcing

The main aim of this section is to examine the effect of the transport, availing /outsourcing on distribution performance.

Regarding transport outsourcing 5 questions asked to evaluate respondents' view about the impact of transport outsourcing on performance. Majority of respondents (from 68.8% to 75.3%) were showing their agreement. The total mean score of transport outsourcing was 3.943 with SD = 0.898 which is almost equal to 4; and 2 represent agreement for the issues related for transport outsourcing. Both the percentile and the mean score of this session, indicates that the majority of pharmaceutical product distributors agree that transport outsourcing is positively related to distribution performance.

4.4.4 Impacts of Information System

In response to the questions, which are related to the relation between information system and distribution performance, the researcher were asked 5 questions, which are related to different applications of existing information system for enhancing the pharmaceutical product distribution performances.

The total mean score of Information technology to distribution performance was 3.797 with SD = 0.939 which is almost equal to 4; and 4 represent agreement for the issues related necessity of information technology applications are highly related to the distribution performance

4.4.5 Impacts of Donors and Government Relationship

Concerning relation of distribution performance with main two stakeholders, namely with donors and government were examined through the following table.

The researcher raised 5 questions for evaluating distributors' opinion and rating their opinion as agreement because their agreement level range from 73.6% to 86.4%. This shows more than two third of the respondents agree on different integration issues. For instance (85.9%) of respondents believed with the existence of high integration between stakeholders; 86.4% of them have seen improvement in cooperation among stakeholders; 77.7% felt the good relationship among stakeholders avail pharmaceutical products; 73.6% imagined the existing high integration between stakeholders reduces cost. The total mean score of good relationship among stakeholders to distribution performance was 3.988 with SD = 0.782 which is almost equal to 4; and 4 represent agreement for the issues related necessity of the integration between government and donors are highly related to the distribution performance

In general, as shown in the chart, regarding about all four factors, the distributers evaluation able to categorize as an agreement with slight variation in their mean. The first highest agreement went to donor and relationship and in contrary (3.988) the least agreement level went to financial capacity (3.726).

4.4.6 Distribution Performance

Table 4.3 above shows the perception of distributors about their performance. Distributers were judged their performance as more than high with the total average 4.48. This has an implication that distributors felt they were doing well their work moreover all relevant distribution gadget were working efficiently. The distribution performance can be measured in the delivery schedule, quantity of products, quality of the product and distribution cost all are linked directly to distribution performance of the pharmaceutical products distributers.

4.5 Inferential Statistics

4.5.1 Correlation Analysis

Correlation analysis is one of the most widely used in research, it is often used to determine a relationship between two different variables, if so how significant or how strong is the association between variables.

Correlation refers to synonym for association or the relationship between variables and it measures the degree to which two sets of data are related. As we can see from Table 4.5 Higher correlation value indicates stronger relationship between both sets of data. When the correlation is 1 or-1, a perfectly linear positive or negative relationship exists; when the correlation is 0, there is no relationship between the two sets of data (Vignaswaran, 2005).In the researcher's case the correlation analysis result was performed to see the relationship between financial capacity, Transport outsourcing, use of information technology on the distribution and finally on donors and government Integration.

Correlation analysis with Pearson´s correlation coefficient (r) was conducted on all variables in this study to explore the relationships between them. The correlation coefficient r is statics' used to measure the degree or strength of this type of relationship (Taylor, 1990). To interpret the strengths of relationships between variables, the guidelines suggested by Taylor R, (1990), were followed. His classification of the correlation efficient (r) is as follows: ≤ 0.35 is considered to represent low or weak correlation; 0.36 – 0.67 is modest or moderate correlation; 0.68-0.89 is strong or high correlation and a correlation with r coefficient ≥ 0.90 is very high correlation. Again if the correlation result lies between -1 and 0, the two variables are negatively related. However, the result is interpreted and discussed using this criterion in each dimensions.

4.5.1.1 Relationship between the Factors and Distribution Performance

In this section the researcher is trying to evaluate the excising relationship between 4 factors and distribution performance using Pearson correlation. Correlation determines whether and how pairs of variables are related. Pearson correlation coefficient - R shows the extent and direction of linear relationship between the variables.

Table 4.4: Correlations

		FINANCIAL CAPACITY	TRANSPORT OUTSOURCING	INFORMATION SYSTEM	DONORS AND GOVERNMENT RELATIONSHIP	DISTRIBUTION PERFORMANCE
FINANCIAL CAPACITY	Pearson Correlation	1				
	Sig. (2-tailed)	0.000				
	N	170				
TRANSPORT OUTSOURCING	Pearson Correlation	0.602**	1			
	Sig. (2-tailed)	0.000	0.000			
	N	170	170			
INFORMATION SYSTEM	Pearson Correlation	0.584**	0.757**	1		
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	170	170	170		
DONORS AND GOVERNMENT RELATIONSHIP	Pearson Correlation	0.384	0.518**	0.414**	1	
	Sig. (2-tailed)	0.122	0.000	0.000	0.000	
	N	170	170	170	170	
DISTRIBUTION PERFORMANCE	Pearson Correlation	0.417**	.477**	0.436**	0.119**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000
	N	170	170	170	170	170

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed)
Source: Own Survey, 2018 – SPSS 20

4.5.1.2 Financial Capacity and Distribution Performance

As shown in Table 4.4, there is a relatively medium but significant positive relationship between Financial Capacity and Distributors performance ($r=0.417$, $P<0.01$). Since the P-value was 0.000 which is less than 0.01, the null hypothesis was rejected. As a result, it can be concluded that there is sufficient evidence at the 1% level of significance. The objective of this facet is to investigate the influence of financial capacity on distribution performance of the distribution companies. As many as 96% respondents felt that the distribution companies have inadequate finances to effectively discharge its functions. Only 4% felt that its finances are adequate. As high as 91% employee respondents considered financial capacity greatly impacted distribution performance. It shows financial capacity to be directly and positively related to distributional performance; value of the correlation coefficient is 0.417 which is statistically significant at 0.01 probability of significance.

4.5.1.3 Relationship between Transport Outsourcing with Distribution Performance

Correlation coefficient between outsourced transportation and performance indicated statistically significant, moderate and positive relation between transport outsourcing and their distribution performance ($r=0.477$, $p< .01$). This has an implication that high transport outsourcing /facilitation has impact for enhancement of distribution performance. The first question posed to the respondents relate to their view about the impact of transport outsourcing on performance. As many as 85% respondents thought that outsourcing as currently undertaken by the distribution company's used in this research are not supportive of good distribution performance, while 15% thought it indeed supported performance. In response to the suggestion to quantify their response, 78% respondents felt that transport outsourcing does affect distribution performance to a high degree.

Correlation coefficient between outsourced transportation and performance indicated statistically significant and fairly strong positive co relation between these two variables, its value being 0.477 with almost 0.000 value of calculated probability.

4.5.1.4 Relationship between Information Systems with Distribution Performance

Results from the Pearson product moment correlation analysis reveal that Information system had a significant positive relationship with distribution performance ($r=0.436$, $p< .01$). Correlation coefficient 0.436 shows the existence of positive and moderate correlation. This would suggest that better Information system brings better distribution. 93% respondents rated the effect of information technology on distribution performance to be very high, since information technology was not fully used utilized in the distribution company. In response to the question about the relation between information technology and distribution performance 97% viewed it to be directly significant, while 3% indicated that information system has no effect on distribution performance, 93% respondents rated the effect of information technology on distribution performance to be very high, since information technology was not fully used utilized at distribution companies.

These responses furnished a correlation coefficient of 0.436 between information systems and distribution performance. The coefficient is statistically significant with p-value of 0.000.

4.5.1.5 Relationship between Donor and Government Integration with Distribution Performance

With respect to the relationship between Donor and Government integration and distribution performance, the Pearson Product moment correlation indicated that significant relationship were not observed (r=.119, p>.01). The result supports the null hypothesis, which says "There is no significant relationship" between distributors performance and Donors and government integration. This has an implication that the stakeholders integration play not significant role for distributors performance in current case. In order to estimate relation of distribution performance of the distribution company with the stakeholders, the respondents were asked to rate the degree of relations of government and donors with distribution performance

To windup the correlation the first three factor (Financial Capacity, Transport Outsourcing and Information System) has significant, moderate and positive correlation while the last one (Donor and Government Integration) in contrary respondents' high agreement for the issues, the factor manifested insignificant relationship with the distribution performance.

4.5.2 Multiple Regression

4.5.2.1 Test for Linear regression model assumptions

Meeting the assumptions of regression analysis is necessary to confirm that the obtained data truly represented the sample and that researcher has obtained the best results (Haire et al., 1998). Three assumptions for regression analysis used in this study were discussed for the individual variables: multi collinearity, linearity and Normality. In the following paragraphs, each assumption is explained.

4.5.2.2 Normality Assumption

Screening data for assessing the normalization of variables is a critical step in multivariate analysis (Hair, 2010). Normality refers to the shape of a normal distribution of the metric variable (Robert, 2006). For variables with normal distribution the values of skewness and kurtosis are zero, and any value other than zero indicated deviation from normality (Hair, 2010). According to Hair (2010), the most commonly acceptable criteria value for (kurtosis/skewness) distribution is ±2.58. Malhotra et al. (2007) propose that normal probability plots are often conducted as an informal means of assessing the non-normality of a set of data. According to Hair et al. (1998), the plots are different from residuals plots

in that the standardized residuals are compared with the normal distribution. In general, the normal distribution makes a straight diagonal line, and the plotted residuals are compared with the diagonal (Hair et al., 1998). If a distribution is normal, the residual line will closely follow the diagonal (Hair et al., 1998).

The normality probability plots were plotted to assess normality. The P-P plots were approximately a straight line instead of a curve. Accordingly, the residuals were deemed to have a reasonably normal distribution, as suggested by Hair et al. (1998). The skewness value provides an indication of the symmetry of the distribution while kurtosis provides information about the peakedness of the distribution. A positive skewness value indicates right(positive) skew while a negative value indicate left(negative) skew. The higher the absolute value, thegreater the skew (Tabachnick and Fidell, 2001).

Table 4.5: Skewness/Kurtosis presentation Skewness/Kurtosis

	N	Statistics		Std. Error	
	Statics	Skewness	Kurtosis	Skewness	Kurtosis
FINANCIAL CAPACITY					
TRANSPORT OUTSOURCING	170	-.816	-.464	.186	.370
INFORMATION SYSTEM	170	-.663	-.731	.186	.370
DONORS AND GOVERNMENT RELATIONSHIP	170	-1.014	.774	.186	.370
DISTRIBUTION PERFORMANCE	170	-1.112	1.503	.186	.370
VALID N (List Wise)	170				

. Source: Own Survey, 2018 – SPSS 20

4.5.2.3 Homoscedasticity Assumption

It is the test of equal variance between pairs of variables (Robert, 2006). In order to ensure the fulfillment of this relationship between independent variables and dependent variable, the variance of dependent variable values must be equal at each value of independent variables (Hair, 2010). For this study all constructs have insignificant level of p>0.05 of Levene'stest for equality of variance. Thus the assumption is reasonably supported in this study.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of Dp

chi2(1) = 2.64

Prob>chi2 = 0.3100

4.5.2.4 Multi Collinearity Assumption

Multicollinearity refers to the situation in which the independent variables are highly correlated. When independent variables are Multicollinearity, there is "overlap" or sharing of predictive power (Dillon, 1993). This may lead to the paradoxical effect, whereby the regression model fits the data well, but none of the predictor variables has a significant impact in predicting the dependent variable (Robert, 2006).

The Multicollinearity in this study was checked using the Tolerance and VIF value. As it is showed in the table 4.4.2.1 all independent variables have a Tolerance value greater than 0.01 and VIF value less than 10. The VIF, Variance inflation factor, is computed as "1/Tolerance", and it is suggested that predictor variables whose VIF values are greater than 10 may merit further investigation (Robert, 2006).

Table 4.6: Result for Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	FINANCIAL CAPACITY	.593	1.685
	TRANSPORT OUTSOURCING	.351	2.845
	INFORMATION SYSTEM	.400	2.497
	DONORS AND GOVERNMENT RELATIONSHIP	.723	1.383

Source: Own Survey, 2018 – SPSS 20

4.5.3 Model Summary Table

R, the multiple correlation coefficients, is the linear correlation between the observed and model-predicted values of the dependent variable. Its large value indicates the strength of the relationship.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.537[a]	.288	.271	.42183
a. Predictors: (Constant), DONORS AND GOVERNMENT RELATIONSHIP, FINANCIAL CAPACITY, INFORMATION SYSTEM, TRANSPORT OUTSOURCING				

Source: Own Survey, 2018 – SPSS 20

Table 4.7 shows Correlation coefficient R, which indicates that the multiple factors relationship with dependent variable, and R square also describes the goodness-of-fit or the amount of variance explained by a given set of predictor variables. In this model, the value is R= 0.537, which indicates that dependent variables has high relationship with the independent variables.

The Model Summary table gives the R (.288) and Adjusted R square (.271). The Adjusted R square statistics 'corrects' R square value to provide a better estimate of the true population value. The R square value tells how much of the variance in the dependent variable (distribution performance) is explained by the model (which includes the four variables that are financial capacity, transport outsourcing, information technology and government and donor relationship). In this case the value is .288 expressed as a percentage (multiply by 100) it becomes 28.8% this means that the model explains 28.8% of the variance in overall brand preference of pharmaceutical products. It means that those factors contributing to the distribution performance of the company performance of pharmaceutical firms 28.8% and remaining 71.2 % of variation are explained by other variables out of this model or variables which are not incorporated in this study. Furthermore the R square (0.288) indicate that 28.8% of variation in the distribution performance explained by those for factor.

4.5.4 ANOVA table

By examining the significance of the regression in the ANOVA table, we determine whether or not there is a relationship between the independent variable and the dependent variable.

Table 4.8: ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	11.887	4	2.972	16.700	.000[b]
	Residual	29.361	165	.178		
	Total	41.247	169			
a. Dependent Variable: DISTRIBUTION PERFORMANCE						
b. Predictors: (Constant), DONORS AND GOVERNMENT RELATIONSHIP, FINANCIAL CAPACITY, INFORMATION SYSTEM, TRANSPORT OUTSOURCING						

Source: Own Survey, 2018 – SPSS 20

The ANOVA table describes the overall variance accounted for in the model. If the significance value of the F statistic is small (smaller than say 0.05) then the independent variables do a good job for explaining the variation in the dependent variable. The above ANOVA table (table 5.6) has confirmed the explained variance by the model could truly explain the change in distribution performance (F ratio = 16.70; and P<0.01).the null hypothesis is rejected

To test the hypothesis of no liner relationship between the predictor and dependent variables, i.e. R-square=0, the Analysis of Variance (ANOVA) is used (Robert, 2006). Appendix A (ANOVA) presents the F statistics to test how well the regression model fits the data. If the f-statistics is big and the significance level less than 0.05 then the hypothesis of no linear relationship between the independent and dependent variable is rejected. Thus in this study f-statistics with 169 and significance value of 0.00, the regression model fits the data. In conclusion all the independent variables are linked to the dependent variable

4.6 Regression Analysis

Regressions fit a predictive model to data and use that model to predict the values of dependent variable from one or more independent variables (Andy, 2005). Linear regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable among the four independent variables. To identify, factors affecting distribution performance on distribution company multiple Regression analyses were conducted with distribution performance as the dependent Variable and the four distribution performance determinants (financial capacity, transport outsourcing information system and donor and government relationship) as the independent variables. The result has been shown below in the table

Table 4.9: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.518	.191		18.463	.000
	FINANCIAL CAPACITY	.115	.049	.202	2.366	.019
	TRANSPORT OUTSOURCING	.200	.061	.363	3.277	.001
	INFORMATION SYSTEM	.066	.055	.125	1.208	.029
	DONORS AND GOVERNMENT RELATIONSHIP	-.125	.049	-.199	-2.570	.011
a. Dependent Variable: DISTRIBUTION PERFORMANCE						

Source: Own Survey, 2018 – SPSS 20

If we want to rank the factor based on the extent of impact, we can use standardized beta. A factor with high standardized beta implies high influence. So that the highest determinant of distribution performance went to Transport outsourcing with Standardized beta = 0.363 and the second most influential one could be Financial Capacity then the third is information system based on beta value.

The unstandardized beta coefficient column shows the contribution that an individual variable makes to the model. The beta weight is the average amount the dependent variable increases /decreases when the independent variable increases by one unit. The unstandardized coefficients B column, gives us the coefficients (index) of each the independent variables in the regression equation including all the predictor variables as indicated below.

As regression result (table 4.9) reveals that Financial Capital able to explain a significant amount of variation in Distribution performance (P value =0.019 < 0.05). The other significant proportion of variance of score in dependent variable was explained by transport outsourcing (P value = 0.001 < 0.01). This indicated that the impact of financial capacity and transport Outsourcing were significant to the change in score in distribution performance.

The researcher has got another interesting issue regarding Information system. This is information system has manifested positive relationship both in descriptive and correlation, but the multiple linear regression result the relationship between those two variable have shown moderate significant association (P value = 0.029 □ 0.05). This could be happen the proportion of changes attributed to Distribution performance would minimum this proportion of change of Information system relatively small when it is compared to other three factors.

Another good scenario is seen also concerning Donor and government intervention for distribution performance. It has been shown in-significant in result of bi-variate correlation, but it has significant effect when the researcher runs multiple linear regression (P value = 0.011 <0.05). This could happen as the result of the first two factor play as a catalyst.

4.7 Regression Equation

The probability of the F statistic for the regression analysis is 0.000, less than the level of significance of 0.05. Also to determine if any of these generic strategies was significantly related to performance, a regression equation for the 4 factors was formulated as

Yi= (bi+b1X1+b2X2+----------+bnXn) +Ei

Where: *y*=the outcome variable

bi=the coefficient of the constant predictor (*Xi*)

b1=the coefficient of the first predictor (*X1*)

bn=the coefficient of the nth predictor (*Xn*)

Ei= the difference between the predicted and observed value of y for the i^{th} participant

Therefore, in this study the following multiple regressions were used:

Multiple R is a correlation between the observed values of y, the values of y predicted by the multiple regression models. Therefore, large values of the multiple R represent a large correlation between the predicted and observed values of the outcome. The model summary table reports the strength of the relationship between the model and the dependent variable, organizational performance of pharmaceutical firms. In this Study regression model is employed the model given as follows.

Yi= (bi+b1X1+b2X2+b2x2+b3X3+b4X4) +Ei

Where:-*y*=distribution performance

bi =the coefficient of the constant predictor (*Xi*)

b1 - b4= y intercept

X1=Financial capacity

X2=Transport Outsourcing

X3=information system

X4=Donors and Government Relationship

Ei= the difference between the predicted and observed value of y for the i^{th} participant or Error term

Distribution performance = 3.518 + 0.115 (FC) + 0.200 (TO) - 0.125(DG) + error

Table 4.10: Overall Outcome of the Hypothesized Research

Hypothesis	Result	Reference
H1: Financial capacity has a significant positive on distribution performance.	Confirmed	β =0.202, p<0.05
H2: Transport outsourcing will have significant positive impact on distribution performance.	Confirmed	β =0.365, p<0.05
H3: Information System will have a significant positive impact on distribution performance.	Confirmed	β =0.125, p<0.05
H4: Donor and government relationship will have a significant positive impact on distribution performance.	Not confirmed	β = -199, p<0.05

4.8 Discussion of Findings

The researcher was trying to determine those variables, which have impact on distribution performance pharmaceutical products distributers. Now here after the researcher trying to explain the result obtained after running multiple linear regressions and compared with the researchers in the literature were explained. According to Johnson (2006), performance of a distribution function in the public sector is strongly based on capacity and management of the finance function. Distribution is an expensive undertaking, and requires careful channeling and management of funds. Fleet maintenance, dispatch personnel emoluments and other costs should be well handled to ensure continued performance (Stern and Heskett 1969). Cooper (2006) argues that there can never be an effective distribution if an organization is challenged financially. But, this research explains the objective of this facet is to investigate the influence of financial capacity on distribution performance of the distribution companies. As many as of respondents felt that the distribution companies have inadequate finances to effectively discharge its functions. Only four percent felt that its finances are adequate. As, high almost ninety percent of respondents considered financial capacity greatly impacted distribution performance.

Outsourcing has been utilized as a means of reducing costs and maximizing output (Quelin and Duhamel, 2003; Johnson, 2006). Johnson (2006) observes that the key to a successful outsourcing relationship includes understanding the process specifying objectives, establishing internal procedures for evaluating performance against objectives, and

deploying systems that help to manage the function effectively .in this research the findings shows transport outsourcing greatly affects distribution performance.

From the literature we got, use of Information system to manage distribution increases efficiency, predictability and reduce waste in value chains, which has positive impact on all market players (Ceva, 2010). Such tools of information system as cell phone and internet services, radio, and a wide range of digital devices and related tools, including cameras, GIS, a wide range of hand-held computing devices if appropriately used, has a potential of raising efficiency in the following distribution activities: record keeping, monitoring field agent activities, procurement operations, credit and payment tasks, input distribution, measuring productivity, and forecasting (Cooper, 2006). From this research about the first item "information technology affects highly the distribution performance ", almost half percent of respondent confirmed its high effect towards the distribution performance. The second item facilitation role of Information technology is another issue raised by the researcher, by saying "The use of information system decreased the time needed to perform the complete task of the distribution company", majority of respondents has confirmed that the services rendered by information technology decreases the service delivery time. Moreover on the third issue, the majority respondents also felt that "Using information system has been very useful to manage shortage of pharmaceutical products in the country". In general the majority of respondents have shown their agreements almost in all issue concerning the necessity of information systems for high success of the distribution performance. Generally, information system has positive impact on distribution performance.

In this research the literature explained that, the importance of building partnerships among donor and government lies in improvement of service delivery (Cadotte and Stern 1979). When the donors work harmoniously with the host government, they establish a common goal which they can guide in coordinating the use of available resources for effectively moving to achieve the goal. This specifically calls on donors to intensify their efforts to cooperate with the government in distribution of humanitarian supplies to various groups of people (Lambert, Boughton, and Banville, 1986).But, other studies have shown that relations with government and donors have positively impacted on the distribution of humanitarian requirements by different government agencies (Brown 1979; Butaney 1989; Lambert, Boughton, and Banville, 1986).

The findings of this research in response to the responders, With respect to the relationship between Donor and Government integration and distribution performance, the Pearson Product moment correlation indicated that significant relationship were not observed .The result supports the null hypothesis, which says "There is no significant relationship" between distributors performance and Donors and government integration. This has an implication that the stakeholders integration play not significant role for distributors performance. In order to estimate relation of distribution performance of the distribution company with the stakeholders, the respondents were asked to rate the degree of relations of government and donors with distribution performance. In this case the hypothesis is rejected because; government has less link with private companies this may affect the result in this research.

To triangulate some of the quantitative data with qualitative data interview results from directors on over all the system of distribution, Communication with internal and external stakeholders, distribution network of distribution company and challenges, fleet management were collected. As the director says, distribution performance of their company defined as the companies' activity to fulfill the customers need regarding the demand on the medicine distributing in a good quality and reduced cost. Hence transportation has great role in the delivery of pharmaceutical products. Data regarding their perception of transportation challenges and related issues were collected.

As per the result of the interview the two directors understand pharmaceuticals distribution as the management of flow of pharmaceuticals and Vehicles from distribution company to the retailers and sometimes health facilities. According to them the main Challenges of pharmaceuticals distribution are inaccurate request from branches, Shortage of vehicles, Emergency requests, Shortage of some medicines, hubs/ health facilities did not pick their forecasted amount, far apart of warehouses.

Literature also stated that the main Challenges of pharmaceuticals supply chain of African countries are poor information, communication and consumption data, inadequate storage facilities and a lack of management procedures, pure selection and quantification of demand, a lack of transparent procurement procedures, inadequate storage facilities and capacity, lack of guidelines for good storage procedures, a lack of appropriate planning, monitoring and evaluation and inadequate budget allocation(Prof. Allan Woodburn(2013).

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 Introduction

In this section we discuss the main findings, draw conclusions and make recommendations.

5.2 Summary of Findings

The objectives of the study were to examine factors affecting distribution performance of pharmaceutical products distributors in Ethiopia. This involved looking at the influence of financial capacity, transport out sourcing, and information system and donor and government relationship on distribution performance.

The first parameter of the responders were gender from the result, the majority of responders were male .on the other hand the female staffs in the pharmaceutical distribution company included in the survey were seen very low.

Regarding work experience of the respondents, the majority had less than five years of experience, or eighty seven percent of respondent had less than ten years of experience in the field. It could be possible to conclude that, the majority of management team of pharmaceutical product distributers are moderately experienced in the field, which is below ten years.

Results from quantitative study shows, the total mean score of transport outsourcing was 3.943 with SD = 0.898 which is almost equal to 4; and 2 represent agreement for the issues related for transport outsourcing. Both the percentile and the mean score of this session, indicates that the majority of pharmaceutical product distributors agree that transport outsourcing is positively related to distribution performance.

The study identified that donor and government relation is Avery complicated and dedicate situation. this because most of the multi-national companies can involve in donation program because of social corporate responsibilities but cannot clearly outspoken about it, since it can be taken as promotion which is forbidden in pharmaceutical market. Similarly, government organizations like PFSA have a weak relationship with private sector compared to government organization.

As the result shows, the average score of four items, which are related to financial capacity positive impact on distribution performance ranges 3.49 – 4.05, this could be round to 4. 4 were initially coded as agreement. Both statistical tools has confirmed that the financial capacity of the firm have great impact on distribution.

On the other hand financial capacity plays a great role in the distribution process. Finally, we can conclude that the change in distribution significantly explained by the Financial Capacity, Transport outsourcing and information system. In other words those three factors had significant effect on the change in distribution performance. The respondents strongly associated their firm's performance with the strategy adopted.

5.3 Conclusion

Based on the findings the following conclusions are drawn; the research was aimed at identifying the various factors that affect the performance of distribution logistics. According to the research findings it is clear that the financial capacity, transport outsourcing, information technology and donor and government integration are factors that affect the performance of distribution logistics. The relation with government and donors is also found affecting distribution performance of Distribution Company significantly and positively. Findings, shows the study for distribution performance of pharmaceutical products in the public sector. Outsourcing of transportation is also revealed to have a significant and positive relation with distribution performance. The performance of any public sector distribution is strongly dependent on efficient management of finances of the enterprise. This study confirms this proposition in so far as results of the study show that financial capacity is positively related with distribution performance.

The results obtained provide a good indication of the value of having an effective and efficient distribution network that take into a count the complex interactions that exist in such distribution network which greatly reduce the availability of pharmaceutical products at the right quantity and right time. This will require high investment but, once it is implemented the agency can achieve its objectives primarily and thus can meet the demand of the customers and reduce delay.

The proposed distribution network aims to assess senior operations management to take decisions about facility location, transportation, the frequency of delivery, additional transportation vehicles and cold chain warehouses and vehicles. If managers have commitment for the implementation of this research all demand points can be covered regarding distribution.

This also follows similar findings of the researcher. The finding of positive relationship between utilization of information system and distributive performance of distribution company also corroborates the similar finding Effective and proper utilization of technology will ensure inventory accuracy, comprehensive and timely reporting and enhanced feedback in real time. Furthermore the distribution process has generally not been well-emphasized with regard to the need for establishment, development, maintenance and control over the activities involved. The objective of these guidelines is to assist in ensuring the quality and integrity of pharmaceutical products during all aspects of the distribution process.

5.4 Recommendations

Based on the findings from this study, the following recommendations were proposed,

- ✓ Though all the determinants of distribution performance of pharmaceutical products by distribution companies are found to be directly related with performance, yet there are still some factors that have not been incorporated in the study and which distribution company can address to achieve better results than those currently prevail.
- ✓ The current distribution network of the company at all branches are not capable of evenly distribute the pharmaceutical products. So to avoid these, the agency should implement the proposed distribution network. In addition To have better internal and external integration of the key supply chain processes throughout the supply chain, the agency should implement performance management system do performance evaluation, cooperation, collaboration, information sharing and trust to facilitate the distribution network.

- ✓ It is also recommended for the agency to implement ERP (enterprise resource planning for the integration, of finance, distribution, supply and human resource on a single computer. In addition to these it also helps to organize and manage the agency‘s distribution process by sharing information across functional area. The long pipeline for distribution of pharmaceutical items should be shortened to avoid the high rate of wastage at each stage of the pipeline.

- ✓ Timely distribution of medicines must be ensured possibly. Government must take steps to reduce improper route, traffic jam and extortion problems etc.

- ✓ On the supply chain of local pharmaceutical manufacturers since they are at the infant stage and their contribution is very low to the pharmaceutical need of the county, they must contribute their responsibility on the pharmaceutical products availability.

- ✓ Generally, Loading of pharmaceuticals separately for separate health facility based on the distance where they are located will reduce; wastage of time, mixing of products and facilitate easy delivery of the required items. So the agency shall apply partitioning practice to load pharmaceuticals. To reduce distribution challenges which are faced during receiving the agency should work in coordination with regional health offices, woreda health offices and health facilities and with FMOH.

- ✓ In this research relationship between donor and government has less effect on distribution performance, to identify the exact reasons it need further and detail research on these issues. So the researcher recommends other researchers to conduct further study to identify the effect of donor and government integration in distribution performance of pharmaceutical products distributes in Ethiopia.

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APPENDICES

Appendix A: List of Pharmaceutical Firms in Ethiopia

1. GlaxoSmithKline
2. Micropharma
3. Aurobindo
4. AstraZenca
5. Bayer
6. Leyet
7. EtabInterMedical
8. Badreg
9. CNMakris
10. Abyssinia Trading
11. Afework International Trading
12. Universal
13. Pharmaunion
14. Dat
15. Hosam
16. PVS
17. Saronpharmachemi
18. Setema
19. Valdes
20. Vital
21. Lewi
22. Westpharma
23. Kefyalew
24. Novo Nordisk
25. Amba
26. Sandoz
27. Novartis
28. Denk
29. Tabuk
30. ZAF
31. Beker
32. Bshaw
33. Woyn
34. Sanofi
35. Pfizer
36. Eyasu
37. Merck
38. Grace
39. Mesroy
40. Pharmabirbir
41. Yoha
42. Kare
43. Venus
44. Meditech
45. Labora
46. Afrogerman
47. Cadilla
48. Addis Pharmaceutical Factory
49. Caroga
50. Julphar

Appendix B: Descriptive statics

Reliability Analysis			
		Cronbach's Alpha	N of Items
1	Financial Capacity	.792	4
2	Transport Outsourcing	.818	5
3	Information System	.828	5
4	Donors And Government Relationship	.851	5
5	Distribution Performance	.745	4
Overall		.886	23

General information of respondents

Table 2					
Total respondents = 170		Frequency	Percent	Valid Percent	Cumulative Percent
Gender of the Respondents	female	47	27.6	27.6	27.6
	male	**123**	72.4	72.4	100.0
Age of the respondents	21-30yrs	26	15.3	15.3	15.3
	31-40yrs	**98**	**57.6**	57.6	72.9
	41-50	30	17.6	17.6	90.6
	Above 50yrs	16	9.4	9.4	100.0
Job position of respondents in the company	medical representative	65	38.2	38.2	38.2
	Technical manager	69	40.6	40.6	78.8
	Product Manager	33	19.4	19.4	98.2
	Pharmacist	3	1.8	1.8	100.0
Work experience of respondents in the company	Lessthan 1year	20	11.8	11.8	11.8
	1-5year	**86**	**50.6**	50.6	62.4
	5-10years	43	25.3	25.3	87.6
	Above 10yrs	21	12.4	10.6	98.2
Age of the company in distribution in Ethiopia	under 5yrs	12	7.1	7.1	7.1
	6-10yrs	40	23.5	23.5	30.6
	11-15yrs	36	21.2	21.2	51.8
	16-25yrs	**59**	**34.7**	34.7	86.5
	over 20yrs	23	13.5	13.5	100.0

Table 3.2 : FINANCIAL CAPACITY					
		Frequency	Percent	Mean	Std. Deviation
I believe financial capacity has great impact on performance of distributers in the country	Strongly Disagree	7	4.1	3.49	1.028
	Disagree	23	13.5		
	Neutral	43	25.3		
	Agree	73	42.9		
	Strongly Agree 57	24	14.1		
Good financial Capacity improves availability of pharmaceutical products in the country.	Strongly Disagree	5	2.9	3.59	1.107
	Disagree	29	17.1		
	Neutral	36	21.2		
	Agree	61	35.9		
	Strongly Agree 58.8	39	22.9		
Availability of funds leads to have highest stock in the distribution company.	Strongly disagree	1	.6	3.77	1.038
	Disagree	27	15.9		
	Neutral	28	16.5		
	Agree	68	40.0		
	Strongly Agree 67.1	46	27.1		
The greater financial capacity improves the sustainable delivery of pharmaceutical products.	Disagree	14	8.2	4.05	0.931
	Neutral	27	15.9		
	Agree	65	38.2		
	Strongly agree 75.8	64	37.6		
Overall FINANCIAL CAPACITY				3.7265	0.86613

Table 3.2: TRANSPORT OUTSOURCING					
		Frequency	Percent	Mean	Standard deviation
Outsourcing of transport affects performance of distributers in higher degree.	Disagree	15	8.8	4.08	0.967
	Neutral	28	16.5		
	Agree	56	32.9		
	Strongly Agree 74.7	71	41.8		
Better transportation in the company results in a fast frequent deliveries of pharmaceutical products.	strongly Disagree	2	1.2	3.99	1.046
	Disagree	20	11.8		
	Neutral	21	12.4		
	Agree	61	35.9		
	Strongly Agree74.7	66	38.8		
Vehicle Availability in distribution has role in good distribution performance.	Disagree	23	13.5	3.91	1.016
	Neutral	27	15.9		
	Agree	63	37.1		
	Strongly Agree 70.6	57	33.5		
Transport outsourcing takes higher responsibilities in scheduling all distribution routs to scattered customers.	Disagree	29	17.1	3.92	1.046
	Neutral	13	7.6		
	Agree	71	41.8		
	Strongly Agree 75.3	57	33.5		
Transport outsourcing is special process on quality delivery and fast delivery of pharmaceutical products.	strongly Disagree	5	2.9	3.82	1.122
	Disagree	23	13.5		
	Neutral	25	14.7		
	Agree	61	35.9		
	Strongly Agree68.8	56	32.9		
TRANSPORT OUTSOURCING				3.9435	0.89897

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Table 3.3: Information System					
		Frequency	Percent	Mean	Standard deviation
Using information technology affects distribution performance distributers in higher degree.	Strongly Disagree	2	1.2	3.79	1.06
	Disagree	27	15.9		
	Neutral	23	13.5		
	Agree	70	41.2		
	Strongly Agree69.4	48	28.2		
The use of information system decreased the time needed to perform the complete task of the distribution company.	Strongly Disagree	3	1.8	3.68	1.123
	Disagree	32	18.8		
	Neutral	29	17.1		
	Agree	59	34.7		
	Strongly Agree62.3	47	27.6		
Using information system has been very useful to manage shortage of pharmaceutical products in the country	Strongly Disagree	3	1.8	3.78	1.143
	Disagree	33	19.4		
	Neutral	16	9.4		
	Agree	64	37.6		
	Strongly Agree69.4	54	31.8		
The role of information systemis very high in profitability and its competitiveness efficiency of the company.	Strongly Disagree	6	3.5	3.88	1.156
	Disagree	23	13.5		
	Neutral	19	11.2		
	Agree	59	34.7		
	Strongly Agree71.8	63	37.1		
The use/application of information system decreases the cost of the pharmaceutical products.	Strongly Disagree	3	1.8	3.85	1.097
	Disagree	25	14.7		
	Neutral	23	13.5		
	Agree	62	36.5		
	Strongly Agree70	57	33.5		
INFORMATION SYSTEM				3.7976	0.93934

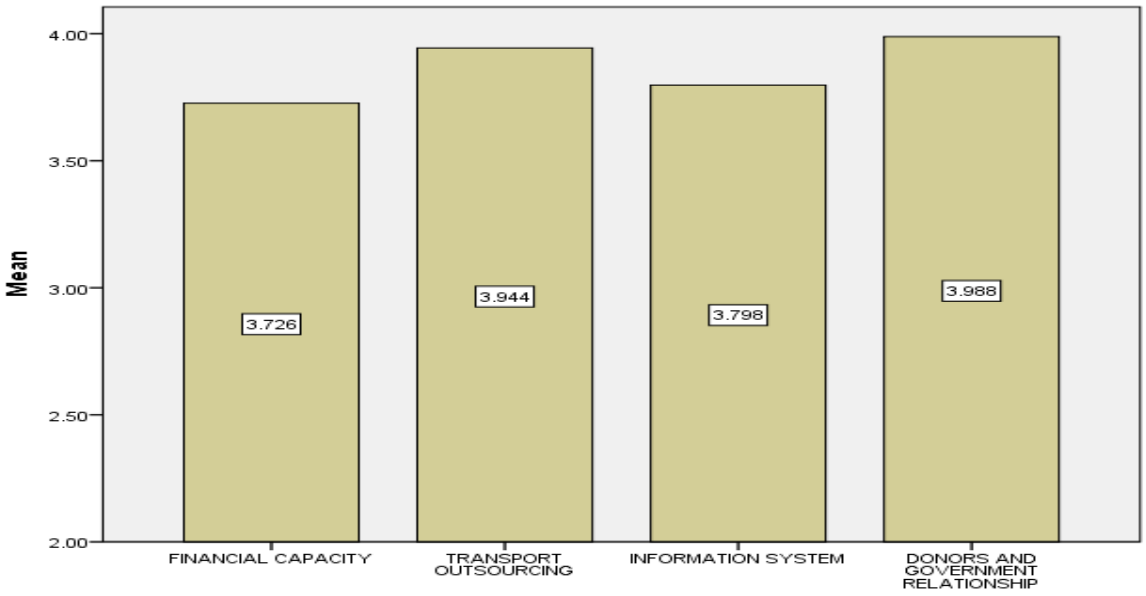

Table 3.4: DONORS AND GOVERNMENT RELATIONSHIP					
		Frequency	Percent	Mean	Standard deviation
Good coordination in the procurement of drugs between parent ministries, donors and the distribution company is very high in distribution practices.	Strongly Disagree	2	1.2	4.25	0.897
	Disagree	9	5.3		
	Neutral	13	7.6		
	Agree	66	38.8		
	Strongly Agree 85.9	80	47.1		
The relationship among /between government and distributers leads in high improvement of distribution performance.	Strongly Disagree	1	.6	4.15	0.891
	Disagree	14	8.2		
	Neutral	8	4.7		
	Agree	82	48.2		
	Strongly Agree 86.4	65	38.2		
The god relationship between government and distributer provides good result in availability of pharmaceutical products.	Strongly Disagree	2	1.2	3.95	0.993
	Disagree	20	11.8		
	Neutral	16	9.4		
	Agree	79	46.5		
	Strongly Agree 77.7	53	31.2		
Strong association between distributer and the government reduces the cost of distribution of pharmaceutical products.	Strongly Disagree	5	2.9	3.74	1.045
	Disagree	25	14.7		
	Neutral	15	8.8		
	Agree	89	52.4		
	Strongly Agree 73.6	36	21.2		
The legal issues of the country is directly related to sustainable distribution of pharmaceutical products.	Strongly Disagree	8	4.7	3.85	1.104
	Disagree	18	10.6		
	Neutral	16	9.4		
	Agree	78	45.9		
	Strongly Agree 75.3	50	29.4		
DONORS AND GOVERNMENT RELATIONSHIP				3.9882	0.78287

Table 3.5: DISTRIBUTION PERFORMANCE					
Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Financial capacity of the distribution company has impact on the distribution performance of the company.	170	2	5	4.26	.811
Information system of the distribution company has impact on the distribution performance of the company.	170	2	5	4.50	.682
Transport outsourcing of the distribution company has impact on the distribution performance of the company.	170	2	5	4.58	.573
The relationship between government and donors of the distribution company has impact on the distribution performance of the company.	170	2	5	4.53	.546
DISTRIBUTION PERFORMANCE	170	2.80	5.00	4.4841	.49403
Valid N (listwise)	170				

Regression analysis

Table 5.5: Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.537[a]	.288	.271	.42183
a. Predictors: (Constant), DONORS AND GOVERNMENT RELATIONSHIP, FINANCIAL CAPACITY, INFORMATION SYSTEM, TRANSPORT OUTSOURCING				

Table 5.6: ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.887	4	2.972	16.700	.000[b]
	Residual	29.361	165	.178		
	Total	41.247	169			
a. Dependent Variable: DISTRIBUTION PERFORMANCE						
b. Predictors: (Constant), DONORS AND GOVERNMENT RELATIONSHIP, FINANCIAL CAPACITY, INFORMATION SYSTEM, TRANSPORT OUTSOURCING						

Multi colleniarty Coefficients[a]

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	FINANCIAL CAPACITY	.593	1.685
	TRANSPORT OUTSOURCING	.351	2.845
	INFORMATION SYSTEM	.400	2.497
	DONORS AND GOVERNMENT RELATIONSHIP	.723	1.383

3 Coefficient table

Table5.7: Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.518	.191		18.463	.000
	FINANCIAL CAPACITY	.115	.049	.202	2.366	.019
	TRANSPORT OUTSOURCING	.200	.061	.363	3.277	.001
	INFORMATION SYSTEM	.066	.055	.125	1.208	.229
	DONORS AND GOVERNMENT RELATIONSHIP	-.125	.049	-.199	-2.570	.011
a. Dependent Variable: DISTRIBUTION PERFORMANCE						

Normality assumption test for regression

Table 4.11 Skewness/Kurtosis presentation **Skewness/Kurtosis**

	N	Statistics		Std. Error	
	Statics	Skewness	Kurtosis	Skewness	Kurtosis
FINANCIAL CAPACITY	170	-.472	-.812	.186	.370
TRANSPORT OUTSOURCING	170	-.816	-.464	.186	.370
INFORMATION SYSTEM	170	-.663	-.731	.186	.370
DONORS AND GOVERNMENT RELATIONSHIP	170	-1.014	.774	.186	.370
DISTRIBUTION PERFORMANCE	170	-1.112	1.503	.186	.370
	170				

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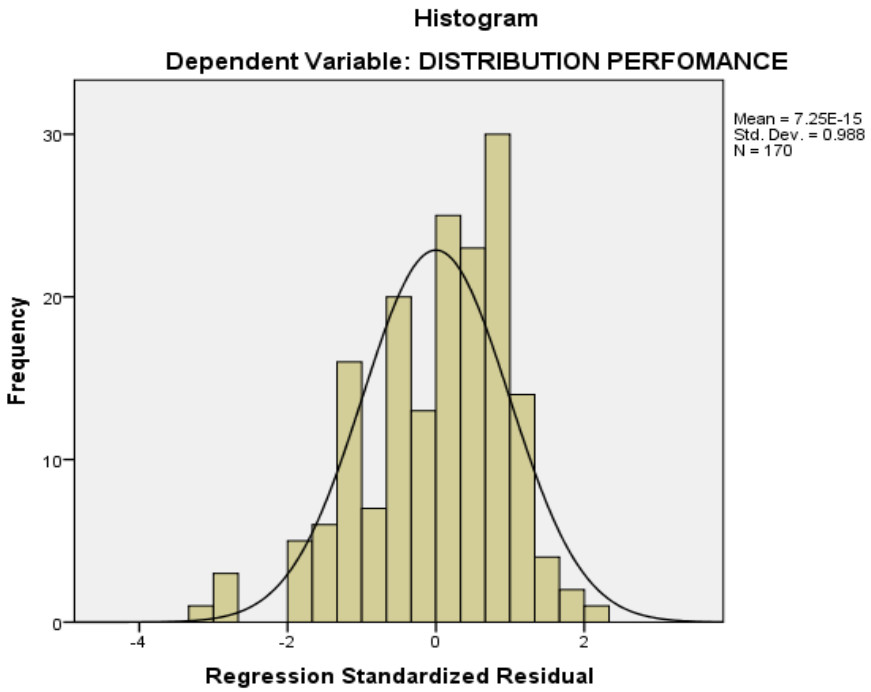

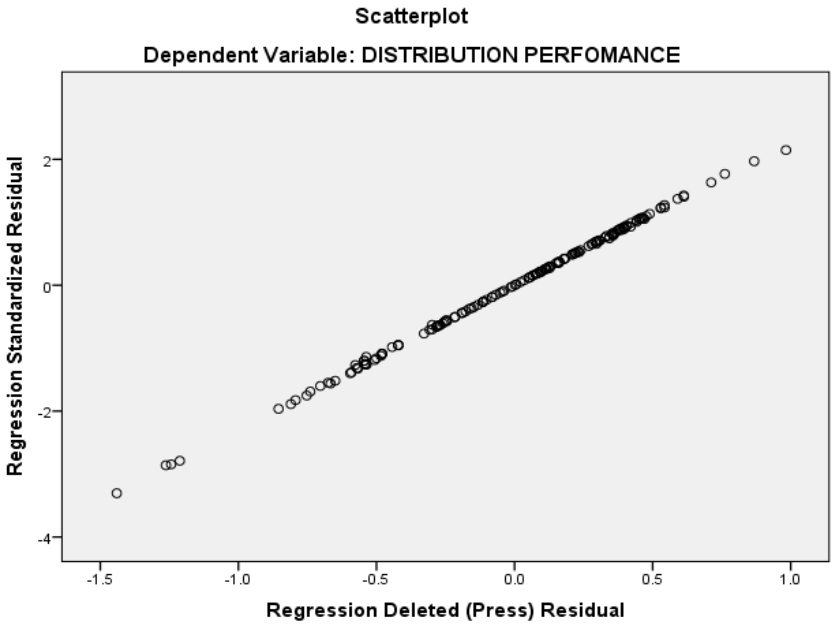

Appendix C : Questionnaire

Addis Ababa University

School of Commerce

School of Graduate Studies

Questionnaire for Medical representatives, Technical manager, Product manager and Manager of Pharmaceutical products importer companies.

Dear respondent,

My name is Netsanet Getachew. I am a student in the post graduate program at the Addis Ababa University School of commerce. I am conducting a research on the topic: "Factors affecting distribution Performance of Pharmaceutical Products distributers in Ethiopia "to fulfill the partial requirement for the Master of Marketing Management (MA). Hence, this questionnaire is designed to collect the necessary information/data to write the thesis on the subject under caption. To this effect, I will be grateful if you kindly take a few minutes of your precious time to complete this questionnaire. Do not write your name or any other form of identification on the questionnaire. All the information in this questionnaire will be treated in confidence.

Part- I: Personal and General Information

Direction: Please put a check mark (√) on the box

Name of the Company (Optional).....

1. Gender Female ☐ Male ☐
2. Age 21-30 ☐ 31-40 ☐ 41-50 ☐ Above 50 ☐
3. What is your job position in the pharmaceutical company?
   a) MedicalRepresentatives☐ b) Technical manager ☐
   c) Product manager ☐d: Pharmacist☐
4. How long have you worked for the company?
   a) Less than 1year☐ b)1-5 yrs☐
   c) 5-10 yrs☐ d) Above 10 yrs☐
5. For how long has your company been in distribution in Ethiopia?
   a) Under 5 yrs☐ b)6-10 yrs☐ e) Over 20 yrs☐
   c) 11-15 yrs☐ d) 16-20 yrs☐

Part Three: Survey on Distribution Performance Items

Direction: This part of the questionnaire intends to find your towards the distribution performance of PFSA .please thick the number that you feel most appropriate ,using the scale from 1to 5 {where 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4=Agree, 5= Strongly Agree}

	STATEMENT	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
To what extent do you agree with the following statements regarding companies Financial Capacity?						
FS	**Financial Capacity**					
FS.1	I believe financial capacity has great impact on performance of distributors in the country.					
FS.2	Good financial capacity improves availability of pharmaceutical products in the country.					
FS.3	Availability of funds leadstohave highest stock in the distribution company.					
FS.4	The greater finance in the distribution company improves the sustainable delivery of products.					
To what extent do you agree with the following statements regarding companies in using Transport Outsourcing?						
T.O	**Transport Outsourcing**					
TO.1	Outsourcing of transport affectsperformanceof distributers in a higher degree.					
TO.2	Better transportation results in fast frequent deliveries of pharmaceutical productsin the company.					
TO.3	Vehicle availability in distribution companyhas high impact on performance of distribution.					
To.4	Transport outsourcing takes higher responsibilities in scheduling alldistribution routes to scattered customers.					
To.5	Transport outsourcing especial process on quality delivery and cost reduction of products to be delivered.					
To what extent do you agree with following statements regarding companies using Information System?						
IS	**Information System**					
IS.1	Using information technology affects distribution performance of distributers in higher degree.					

	STATEMENT	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
IS.2	The use of information System decreased the time needed to perform the complete task of the distribution company.					
IS.3	Using information system has been very useful to manage shortage of pharmaceutical products in country.					
IS.4	The role of information system is very high in profitability and its competitivenessefficiency of the company.					
IS.5	The use /application ofinformation system decreases the cost of the pharmaceutical products.					
To what extent do you agree with following statement regarding companies of donors and Government Relationship?						
DG	**Donors andGovernment Relationship**					
DG.1	Good coordination in the procurement of drugs between parentMinistries, donors and the distribution company is very high in distribution practices.					
DG.2	The relationship among/between government and distributersleads high improvement of distribution performance.					
DG.3	The relationship betweendistributers and governments provides good result in availability of pharmaceutical products.					
DG.4	Strong association between distributer and the government reduces the cost of distribution pharmaceutical products.					
DG.5	The legal issues of the country is directly related to sustainable distribution of pharmaceutical products of the distributers.					
To what extent do you agree with following statement regarding company's distribution performance?						
Dp.1	Delivery schedule of the distribution company has an impact on distribution Performance.					
Dp.2	Quality of the products delivered by the distribution company hasimpact on distribution Performance.					
Dp.3	Quantity required and delivered in the distribution process has impact on distribution Performance.					
Dp.4	Distribution cost of the distribution company has impact on distribution Performance.					

Thank You for Taking Your Precious Time to Complete This Questionnaire!!!!

Appendix D: Interview Questions

Interviews with the director, Medical Representatives and product manager of the agency

1. How do you define distribution performance of your company?
2. What are the major challenges and opportunities of pharmaceutical supply chain in Ethiopia?
3. .Do you believe that your agency provide the right quantity and quality of pharmaceutical products for the customers? If not why?
4. What about the tariffs and incentives from the government when you import from outside and inside?
5. Do you believe that your agency provide the right quantity and quality of pharmaceutical products for the customers? If not why?
6. How do you evaluate the average lead time for your immediate customers?
7. How do you evaluate the affordability and availability of pharmaceutical products by your agency?
8. Do you believe that there is delay in providing service? If yes, why this happens? And what efforts your agency made to reduce the delay.

Thank you!