



**ADDIS ABABA UNIVERSITY**  
**COLLEGE OF BUSINESS AND ECONOMICS**  
**SCHOOL OF COMMERCE**  
**DEPARTMENT OF MARKETING MANAGEMENT**

**Assessment of Commercial Goods Distribution Management  
Performance; the case of ethio telecom.**

**By: Abera Girma**

**A Thesis submitted to Addis Ababa University School of Commerce for the  
Partial Fulfillment Degree of Master in Logistics and Supply Chain  
Management**

**Advisor: Shiferaw Mitiku (Ph.D.)**

**Addis Ababa, Ethiopia  
June, 2020**

**Addis Ababa University**  
**College of Business and Economics**  
**School of Commerce**

**Assessment of Commercial Goods Distribution Management**  
**Performance: the case of ethio telecom**

**By**  
**Abera Girma**

**Approved by Board of Examiners**

**Busha Temesgen (Ph.D.)**  
Chairman of Graduate Committee

\_\_\_\_\_  
Signature

**29 June 2020**  
Date

**Shiferaw Mitiku (Ph.D.)**  
Advisor

  
\_\_\_\_\_  
Signature

**23 June 2020**  
Date

**Busha Temesgen (Ph.D.)**  
Internal examiner

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**Delesa Daba (Ph.D.)**  
External Examiner

  
\_\_\_\_\_  
Signature

**22 June 2020**  
Date

## Declaration

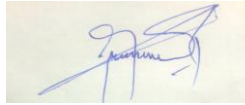
I, Abera Girma declare that this research paper entitled “*Commercial Goods Distribution Management Performance; the case of ethio telecom*” is my original work and has not been presented for degree by others in any other university. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

Student Researcher

Signature

Date

**Abera Girma**



\_\_\_\_\_

## Letter of Certification

This is to certify that Abera Girma has carried out his thesis work on the topic entitled “Commercial Goods Distribution Management Performance; the case of ethio telecom” under my guidance and supervision. Accordingly, I here assure that his work is appropriate and standard enough to be submitted for the award of Master of Arts in Logistics and Supply Chain Management.

Research Advisor

**Shiferaw Mitiku (PhD)**

Signature



A handwritten signature in blue ink, appearing to read 'Shiferaw Mitiku', is written over a horizontal line.

Date

**23/06/2020**

## **List of Abbreviations & Acronyms**

**ADSL** - Asymmetric Digital Subscriber Line

**DMP** - Distribution Management Performance

**EDI** - Electronic Data Interchange

**EFY** - Ethiopian Fiscal Year

**ERP** - Enterprise Resource Planning

**FFD** - Fleet and Facility Division

**ICT** - Information and Communication Technology

**IT** - Information Technology

**OLA** - Operational Level Agreement

**SCD** - Supply Chain Division

**SD** - Sales Division

**Sig** - Level of significance

**SIM** - Subscriber Identity Module

**SPSS** - Statistical Package for Social Sciences

**UVC** - Universal Voucher Center

**WMS** - Warehouse Management System

**WTO** - World Trade Organization

## **Acknowledgments**

First of all, I would like to thank the almighty God for his mercy for giving me the chance of the academic advancement. Next, I would like to take this opportunity to forward my deepest gratitude from the bottom of my heart to my advisor Shiferaw Mitiki (Ph.D.) who contributed a lot for my achievement and his constructive criticism and guidance has greatly improved the content of this thesis. Then, it is my pleasure to extend my gratitude to ethio telecom employees and managers; who are working on commercial goods distribution management activities for their great cooperation in filling questionnaires and responding for interviews to prepare this study. Finally, I would like to extend my heart full gratitude to my wife Ejigayehu Muleta for supporting and strengthening me in conducting my thesis.

# Table of Contents

List of Abbreviations & Acronyms .....	v
Acknowledgments .....	vi
List of Tables .....	x
<b>1. INTRODUCTION .....</b>	<b>1</b>
1.1 Background of the Study .....	1
1.2 Background of the Organization .....	2
1.3 Statement of the Problem .....	3
1.4 Research Question .....	3
1.5 Research Objectives .....	4
1.6 Significance of the Study .....	4
1.7 Scope of the Study .....	5
1.8 Limitations of the study .....	5
1.9 Definition of Terms .....	6
1.10 Organization of the Study .....	7
<b>2. RELATED LITERATURE REVIEW .....</b>	<b>8</b>
2.1 Theoretical Literature Review .....	8
2.1.1 Distribution Management Practice .....	8
2.1.1.1 Planning and Forecasting .....	9
2.1.1.2 Warehouse Management .....	10
2.1.1.3 Transport Management .....	11
2.1.1.4 Collaboration of Participants .....	12
2.1.2 Factors Affecting Distribution Management Performance .....	13
2.1.2.1 Finance .....	14
2.1.2.2 Internal process .....	14
2.1.2.3 Employee Skill .....	15
2.1.2.4 Technology .....	16
2.1.2.5 Infrastructure .....	17
2.1.2.6 Government Regulation .....	18
2.1.3 Distribution Management Performance .....	19
2.1.3.1 Delivery Schedule .....	19
2.1.3.2 Cost Reduction .....	20

2.1.3.3	Profit Maximization .....	20
2.2	Empirical Literature Review .....	21
2.2.1	Distribution Management Practices .....	21
2.2.2	Factors Affecting Distribution Management .....	23
2.2.3	Distribution Management Performance .....	23
2.3	Conceptual Framework .....	25
3.	RESEARCH METHODOLOGY .....	26
3.1	Description of the Study Area .....	26
3.2	Research Approach .....	26
3.3	Research Design .....	27
3.4	Population .....	27
3.5	Data Sources and Types .....	28
3.6	Methods of Data Collection .....	29
3.7	Methods of Data Analysis .....	30
3.8	Data Reliability and Validity Test .....	30
3.9	Ethical Consideration .....	32
4.	DATA PRESENTATION AND ANALYSIS .....	33
4.1	Results discussion and interpretation .....	33
4.1.1	Demographic data presentation and analysis .....	34
4.1.2	Descriptive Analysis .....	35
4.1.2.1	Distribution Management Practice .....	36
4.1.2.1.1	Planning & Forecasting .....	37
4.1.2.1.2	Warehouse Management .....	38
4.1.2.1.3	Transport Management .....	39
4.1.2.1.4	Participants Collaboration .....	40
4.1.2.2	Factor affecting distribution management performance .....	42
4.1.2.2.1	Technology .....	43
4.1.2.2.2	Infrastructure .....	44
4.1.2.2.3	Government Regulation .....	46
4.1.2.2.4	Finance .....	47
4.1.2.2.5	Internal Process .....	48
4.1.2.2.6	Employees Skill .....	50
4.1.2.3	Distribution management performance. ....	51

4.1.2.3.1	Delivery Schedule.....	53
4.1.2.3.2	Profit Maximization.....	54
4.1.2.3.3	Cost Reduction.....	55
4.1.3	Inferential statistics.....	56
4.1.3.1	Correlation analysis.....	56
4.1.3.2	Regression Analysis.....	60
<b>CHAPTER FIVE.....</b>		<b>66</b>
5.	<b>SUMMARY, CONCLUSION AND RECOMMENDATION.....</b>	<b>66</b>
5.1.	<b>Summaries of major findings.....</b>	<b>66</b>
5.2.	<b>Conclusions.....</b>	<b>68</b>
5.3.	<b>Recommendations.....</b>	<b>69</b>
5.4	<b>Recommendations for academicians and future researches:.....</b>	<b>70</b>
<b>REFERENCE.....</b>		<b>71</b>
<b>ANNEX – QUESTIONNAIRES.....</b>		<b>74</b>

## List of Tables

<i>Table 3.1, Population of the study</i> .....	28
<i>Table 3.2: The Cronbach's alpha</i> .....	32
<i>Table 4.1; Demographic Analysis</i> .....	35
<i>Table 4.2; Distribution Management Practice</i> .....	36
<i>Table 4.3; Planning &amp; forecasting dimension</i> .....	37
<i>Table 4.4; Warehouse management dimension</i> .....	38
<i>Table 4.5; Transport management dimension</i> .....	39
<i>Table 4.6; Participants collaboration dimension</i> .....	40
<i>Table 4.7; Factor Affecting Distribution Management Performance</i> .....	42
<i>Table 4.8; Technology dimension</i> .....	43
<i>Table 4.9; Infrastructure dimension</i> .....	45
<i>Table 4.10; Government regulation dimension</i> .....	46
<i>Table 4.11; Finance dimension</i> .....	47
<i>Table 4.12; Internal process dimension</i> .....	49
<i>Table 4.13; Employees' skill dimension</i> .....	50
<i>Table 4.14. Distribution Management Performance</i> .....	52
<i>Table 4.15. Delivery schedule dimension</i> .....	53
<i>Table 4.16. Profit maximization dimension</i> .....	54
<i>Table 4.17. Cost reduction dimension</i> .....	56
<i>Table 4.18 ; Bivariate Pearson's Correlation</i> .....	58
<i>Table 4.19. Collinearity Statistics</i> .....	62
<i>Table 4.20 Regressions Analysis</i> .....	62
<i>Table 4.21 Regressions Analysis</i> .....	63
<i>Table 4.22. Summary of the research findings</i> .....	65

## List of Figures

<i>Figure 2.1, Conceptual Framework</i> .....	25
<i>Figure 4.1; Linearity test</i> .....	61

## Abstract

*The research aimed to assess the ethio telecom commercial goods distribution management performance and attempted to investigate the affecting factors of the distribution performance. It also assessed the company commercial goods distribution management practices. The distribution management related problems in this regard were identified on the preliminary survey and indicated as commercial goods shipment delay which was resulted from poor distribution management practices and low distribution performances. The research has set three objectives stated as: i) to assess the distribution management practices (such as planning and forecasting, warehouse management, transport management and collaboration of distribution participants); ii) to identify the factors affecting distribution management performance and iii) to assess the distribution management performance of ethio telecom commercial goods distribution. Descriptive research design was employed with a census method and questionnaires were distributed to collect primary data. The collected data was analyzed by using descriptive and inferential statistics. The main findings of the study indicated that, there was a remarkable distribution management practices as the mean values of the dimension were above the minimum requirement. The study other finding indicated the influencing factors are significantly affected the distribution management performances as the dimensions mean values indicated greater than the average mean value. It is indicated in the study that there is a positive significant correlations among the dimensions. The study final finding indicated ethio telecom has a reasonable distribution management performance as the dimensions indicated above the minimum requirement mean value. It is concluded from the findings that, ethio telecom has a remarkable performances of commercial goods distribution management which is resulted from the well-done practice and positively influencing factors. It is recommended that, the company should work internally on the relatively low performance and practice areas such as warehouse management and fleet management and externally on the external factors having adverse effect on its distribution management performance.*

**Keywords:** *Commercial goods, Distribution management practice, distribution management performance, Factors affecting distribution management performance.*

# CHAPTER ONE

## 1. INTRODUCTION

*This chapter represents the main contents of the thesis which includes the backgrounds of the study and the organization, the statement of the problem, the research question and objectives, the significance of the study, the scope and limitation of the study, definitions of the terms and the organization of the study. Each part is stated by addressing the research questions and setting the aim of the study.*

### 1.1 Background of the Study

Goods distribution is one of elements of marketing complex and inseparable part of marketing decisions which involves all the decisions about distribution of products to end users. The issues of goods distribution were analyzed by a number of marketing scholars (Berman, 1999; Kim, 1996; Delton, 1997; Frazier, 1999; Kotler, 2003; Rosenbloom, 1999; Stern, 2006; etc.), paying a big attention to the elaboration of the procedures of marketing channel design (Gudonaviciene Alijosiene, 2008).

Goods distribution offers a new boundary for competing successfully, especially if the emphasis is placed on the design and management of superior marketing channel systems. Designing optimal marketing channel systems to boost sales, formulating innovative distribution strategies and managing channels system effectively is not a simple task (Obaji, 2011). The level of the economy has put distribution into a less important position and scarcity or short supply of products. Most management today are interested on profit maximization without due attention to the effect of distribution on the company and economy as a whole. For any organization to be effective there should be effective distribution strategy and management process to convey finished products from the manufacturer to the final customer.

Most firms are internally organized through function but not integrated as a flow of processes which leads to the lack of common thought of an integrated approach within and across organizations (Hoole (2005). Marquez (2010), discussed information sharing is important in the supply chain networks to enable them to be fast and responsive to the

market and makes demand change with lower costs. Sharing critical information is vital to reduce the level of inventory and costs while delivering improved performance level within the supply chain levels.

In addition to finding the related literature on the current distribution management practice and performance, the researcher took the Ethiopian experience in the area of procurement, logistics and distribution management. Based on this, the researcher generally described on how finance, internal process, employees' skill, technology, infrastructure and government regulation impact the distribution management performance of a firm by taking ethio telecom as a case study.

## **1.2 Background of the Organization**

Ethio telecom is the Ethiopian government owned company operating in the telecom sector and providing the telecommunication services. The company has more than 41.92 million of mobile, 22.3 million of data and internet and 1.22 million of voice fixed telephone subscribers. The company supply chain is internally structured as 23 regional departments located at different regional states of the country and 6 zonal departments in Addis Ababa (ethio telecom, 2019). According to the ethio telecom expert response for the preliminary interview (2019), the company provides different products know as commercial goods for the market to enable its customers to use the services provided and to collect revenue from the customers. These products pass the channels of central (commercial) warehouse; regional and zonal warehouses, dealers (distributors), retailers and end users. The company commercial goods distribution is done by the company internal departments such as logistics, fleet management and sales support. It is indicated by the study that the company distribution management practices and performance is on good progress.

### **1.3 Statement of the Problem**

As per the preliminary interview response and the internal process documents of ethio telecom (2019), the ethio telecom commercial goods distribution were performed by the working units such as warehouse management, business logistics, distribution management and fleet management. It is indicated in the response that the commercial goods distribution management of ethio telecom is not being well practiced and not undergoing as it is required. According to the preliminary interview response of the company experts, commercial goods distribution is being delayed from planned shipment schedules from time to time and couldn't fulfill the customers' orders punctually. The challenges of the commercial goods distribution management those had been obstacles for the responsiveness of the customers need were identified and listed. The annual report of the company held at the end of June 2011 EFY also pointed, the supply (distribution) of commercial goods challenge as one of challenges encountered related to distribution planning and forecasting, warehouse management, fleet management, and collaboration of participants which in turn resulted for the commercial goods shipment delay.

The researcher in this regard set research objectives to assess the distribution management practice problems and the performance of distribution management through the formulation of a research questions. The theoretical and conceptual facts with respective to the data collected is tested, analyzed and proved based on the methodology of the research to identify the practice gap, the factors influencing the performance and the performance of the ethio telecom commercial goods distribution management.

### **1.4 Research Question**

The research questions addressed on the research problem were indicated as follows:

- How the distribution management activities (such as planning and forecasting, warehouse management, transport management and collaboration of participants) are being practiced in ethio telecom?
- What are the factor affecting the distribution management performances of ethio telecom's commercial goods distribution?
- What is the commercial goods distribution management performance of ethio telecom?

## **1.5 Research Objectives**

In correlation with the problems discussed, the research set the general and specific objectives addressed by the research findings and focused on answering the research questions.

### **General Objective:**

To assess the overall ethio telecom commercial goods distribution management practices and identify the factors affecting the distribution management.

### **Specific Objectives:**

- To assess the distribution management practices (such as planning and forecasting, warehouse management, transport management and collaboration of distribution participants) of ethio telecom.
- To identify the factors affecting the distribution management performance of ethio telecom commercial goods.
- To assess the distribution management performance of ethio telecom commercial goods distribution.

## **1.6 Significance of the Study**

The study has a great significance to ethio telecom, to someone who desired to conduct further researches in the area and any other party in the industry. Major benefits that could be obtained from the study are: reduce the time used for commercial goods distribution and reduce costs related with distribution delay, indicate ways of maximizing the company market share and profitability, enables the company to lead by the right product at the right time to the right customer principle, benefits the company to use as a guideline and help to improve the internal processes of distribution management and contributes for researches related to the area as a supportive document and reference.

## **1.7 Scope of the Study**

Ethio telecom uses a centralized distribution management system and distributes all commercial goods from the center to different regional and zonal sites national wide. The downstream distribution channel for the commercial goods are commercial warehouse, regional and zonal warehouse, dealers, retailers, franchise and/or owned shops and final customers (ethio telecom *et al*, 2019). The researcher in the assessment focused on and limited to the internal (from commercial warehouse to regional and zonal warehouses) distribution management practice and performance of the commercial goods distribution. Due to the country level and wide scope of the distribution channel of the company commercial goods distribution, it could be unattainable and inaccessible by this research and the researcher get the internal distribution management practice of the ethio telecom being an attractive problems on the pilot survey and had been desired to conduct the assessment on the internal goods distribution management practices and performance. Therefore, this research is limited to the ethio telecom internal commercial goods distribution management practice and performance assessment.

## **1.8 Limitations of the study**

This research investigation did not exhaust all the factors that influence distribution performance at ethio telecom, and therefore there is a need for further research to identify any other factor that affects the distribution management practice and performance. The list is illustrative rather than exhaustive.

The quantitative research method involves structured questionnaire with close ended questions and may lead to limited outcomes outlined in the research proposal. Consequently, the results may not always indicate the actual happening, in a comprehensive way. Furthermore, the respondents have a limited selections of responses based on the selection made by the researcher. Quantitative research is difficult, expensive and requires a lot of time to perform the analysis. In order to curve the methodological limitations, expert in the area was consulted to give their insights in questionnaire preparation to better get the respondents insight with the subject under investigation and somehow curve the limitation in quantitative study.

## 1.9 Definition of Terms

The terms to be used in this research as per their conceptual definition are stated here under.

*Commercial goods:* are goods purchased for sales purpose to enable the customers to use company's services such as SIM cards and devices or goods purchased and sold to recharge the users' airtime service such as voucher cards (ethio telecom, 2019).

*Commercial warehouse:* is the ethio telecom central warehouse used to receive, temporarily store and distribute commercial goods to different destinations where goods are demanded for internal use or for sales service (ethio telecom, 2019).

*Dealers:* are companies which wholly buy and distributes the ethio telecom's commercial goods and distributes to retailers (ethio telecom, 2019).

*Franchise shop:* is a shop that buys and sells the goods of ethio telecom by using the license and logo of ethio telecom (ethio telecom, 2019).

*Owned shop:* is a shop owned by ethio telecom through rental, purchase or building and use for selling goods and services (ethio telecom, 2019).

*Regional warehouse:* are warehouses of ethio telecom located in the regional state of Ethiopia and used to provide goods for the company internal uses and sales services (ethio telecom, 2019).

*SIM card:* a subscriber identity module (SIM) is an integrated circuit that is intended to securely store the international mobile subscriber identity (ethio telecom, 2019).

*Voucher card:* are scratchable cards used by ethio telecom's customers to recharge mobile voice and data and to charge any other ethio telecom prepaid service airtime (ethio telecom, 2019).

*Zonal warehouses:* are warehouses of ethio telecom geographically located in the capital of Ethiopia and used to provide goods for the company internal uses and sales services (ethio telecom, 2019).

## **1.10 Organization of the Study**

The study comprises five main chapters. The first chapter was devoted to the general introduction covering the background of the study, the statement of the problem, the objectives of the study, the significance of the study, the scope and limitation of the study, definitions of terms and the ways of the research study organized. The second chapter was concerned with the reviews of the related literatures comprising the theoretical and empirical. The third chapter was the methodology of the study that was applied to achieve the research objectives including: description of the study area, the research approach, the research design, the population, the data sources and type, the methods of data collection and the methods of data analysis parts is provided. The fourth chapter is the data presentation and analysis part. The final chapter is dealing with the summary, the conclusion and the recommendations part of the study.

## CHAPTER TWO

### 2. RELATED LITERATURE REVIEW

*This part of the thesis mainly states the theoretical and conceptual aspects of the thesis. In this part, the assessment and references of goods distribution theories and concepts is reviewed. The main part stated on the theoretical literature review is the processes of distribution management incorporating: distribution planning and forecasting, warehouse management, goods transportation, collaboration of participants, internal process integration and challenge of distribution management. The factors affecting distribution management and the distribution management performance points are discussed in the conceptual frame work. The empirical literature review is stated with the points of distribution management practices of different countries.*

#### 2.1 Theoretical Literature Review

##### 2.1.1 Distribution Management Practice

According to Kahia George Mike Iravo (2014) distribution management is about performing customers' order fulfillment, sustaining supply and demand, overwhelming space and time problems to achieve efficient and effective movement of goods. According to Hidajet Karaxha and Ilia Kristo (2016), distribution has an important role in marketing and key to success is the integration in distribution structures to ensure the delivery of products in the right time and place. A company has to ensure the efficient products management process to deliver for its consumer lowering costs and building robust relations with their consumers (Yeboah A. Owusu A. and Boakye S., 2013). Distribution management issue is more important for firms to improvement the systems of physical distribution management thorough planning, analyzing costs systems to reduce and the control at the level of its services (Saremi H. and Mosavi S., 2014).

Distribution management denotes to the process of controlling the movement of product from the point of production to the point of sales. Modern distribution management require more than moving products from a point of production to a point of consumption. It involves gathering and sharing relevant information that can be used to identify opportunities of growth and increase competitiveness advantages of the market. Distribution management refers to numerous activities and processes including logistics, shipping, warehousing, inventory control, private trucking fleet operations, packaging, receiving, materials handling, along with plant, store location, planning, and the integration of processes (Will Kenton, 2019). Ostrow (2009) stated as, distribution management basically involves the physical movement of the product and transfer of title to different participants of trade channels. According to L. Wilinski (2009), distribution management is about the planning and organizing activities related to the company storage aspects of number and type, size of the warehouses, level and the structure of inventories and spatial distribution of the warehouses in the distributive network. K. Ficon (2016) stated, distribution management systems depends on the extent of the processes specifically on planning of the distribution processes, organizing, coordination, transportation and storage infrastructures. According to Dent, J. (2011), distribution management is the activities performed on goods transportation, warehousing, protective packaging, order processing and information sharing. According to BR. Williams (2018), distribution management is an essential part of logistics and supply chain management and comprises the activities of forecasting, transportation, warehousing, and delivery. It is indicated in the above scholars' statements that, the activities of distribution management mainly involve: planning and forecasting, warehouse management, transportation management and collaboration of participants.

#### **2.1.1.1 Planning and Forecasting**

According to Aian Rushton, Phil Croucher, Peter Baker, (2014), distribution planning and forecasting is the application of systems on the management of inventories and materials transactions, warehousing and transportation support. Distribution planning is undertaken periodically to ensure the required goods transactions through the system to provide products as required to the right place, at the right time and right quantity. According to

Park, Y.B. (2015), distribution management involves the planning and efficient use of supply chain resources and working with stakeholders. Planning and forecasting is used for setting sales targets to evaluate the sales performance. Planning and forecasting process for the improvement work of the logistics and distribution midpoints which covers the entire logistics and distribution process with its elements.

Distribution planning and forecasting processes encompass the activities of sales planning, stock planning, transport planning and delivery schedule (Aithal, R.K., 2012). Stock planning aims to keep the inventory optimal level and manage the seasonal inventory fluctuations by considering the safety stocks (Shaun Snapp, 2017). According to Aithal, R.K. (2012), distribution planning is developing achievable plan of distributing products from the producers to end users depending on the real transport costs and requirements. Goods transportation planning is about determining goods transportation cost, type and time of delivery of the transportation needed. The type of the product and the urgency of delivery determine the type and the time of the transportation system (Frantisek (2013). Delivery schedule is about determining the optimum methods and time of delivery, by considering the time of orders receiving, the production schedule and the availability of transport (Park, Y.B *et al*, 2015).

#### **2.1.1.2 Warehouse Management**

Many authors concerned about warehouse. Teo (2008), state warehouse management as a place that is used to hold necessary and adequate materials which is needed for firm including finished goods, goods in process of production, raw materials and goods consumed in the process. According to Queiroloet (2012), warehouse activity mainly involves three activities: receiving products from a source, storing products until they are requested for internal or external customers and retrieving the products when they are demanded. The main activity of a warehouse is customer order processing with an objective of facilitating movement of goods from suppliers through the supply chain to the end consumer in a timely and cost-effective manner (Chua, 2008). According to Frazelle (2014), warehouse is a commercial building having appropriate layout and infrastructure of storage installations and facilities used for storage of materials. A warehouse should equip with

appropriate tools and facilities such as cranes and forklifts for goods moving, and loading and unloading.

According to Mal Walker (2018) and Hector Sunol (2019), the warehousing activity involves the activities (processes) of receiving, put-away, storage, picking, packing and shipping. Receiving is the first warehouse process and verifying that warehouse has received the right product, in the right quantity, in the right condition at the right time. As stated by Hector Sunol (2019), a goods receiving involves the transfer of responsibility for the goods to the warehouse. Put away process indicates the movement of goods from the receiving dock to the most optimal storage location. A good system prompt put away staff with a note indicating that stock is in staging waiting to be transported to a storage location which is supported by ERP or WMS and barcode (Mal Walker *et al*, 2018). Storage is the process of placing goods in appropriate storage areas to maximizes the available space in the warehouse and increases labor efficiency. Picking is the process of collecting products from the storage area to fulfill customer orders. Optimizing the process of picking enable firms to reduce costs significantly and increase the warehouse efficiency (Bob Goodman and Erin Kane, 2007). According to Georgios K.D. Saharidis (2013), packing is the process that combines collected items in a sales order and prepares for shipment to the customer. The last warehousing process is shipping which starts by moving of goods from the warehouse to customer. Shipping is considered as successful only if the right order is sorted and loaded, dispatched to the right customer, travels through the right transportation mode and is delivered on time safely (Hencor Sunlon, 2019).

### **2.1.1.3 Transport Management**

The function of transportation regulates the movement efficiency of products with the principles of management, improves cargo's speed, the movement of the product, the quality of the service, costs and usage of objects of logistics. Transportation links the sources of supply chosen in sourcing with the customers decided to serve chosen as a part of the customer service policy (Yungyu T. 2005). Frantisek (2013) describes transportation as a basic element of the logistics activities which runs from vendors to the ultimate customers. Transportation plays a connective role among several steps that result in the conversion of resources into useful goods for consumer (Fair, M. and Williams, 1981). Frazelle (2012)

states, the objective of transportation is to link the delivery points within the response time requirements of customer service policy and the limitations of the transportation infrastructure at the lowest conceivable cost. Tyndall and colleagues (1998) argues that, the modern logistics practices are improving processes to move goods and material between nations in a timely and seamless manner. Well-developed transport and communication infrastructure enables the efficient organized flows of goods and information.

In transport systems, transportation modes are essential components by which mobility is supported and grouped broad categories based on the medium they used as: land, water and air. Each has its own requirements and features and adapted to serve the specific demands of freight and passenger traffic. There is a tendency towards integrating the modes through inter-modality and linking the modes more closely into production and distribution activities (Jean Paul Rodrigue, 2019). Transportation network design in terms of size should be suitable for transportation routes of delivery sequence and frequency. During transport network design process, the types of vehicles best suited to the requirements of the products carry and the customers they will serve. Heavy duty vehicles are not recommended on bumpy or narrow roads that small pick-up trucks could easily pass. Transport having cold storage is required while products need freezing. The transportation design process can also inform financial planning (Zakaria Hammoudan, 2016). According to Sunil Chopra and Peter Meidl (2007), transportation has a large impact on both responsiveness and efficiency of organizations. Fast transportation enables a supply chain to be more responsive but could reduce its efficiency. The type of a transportation a company uses also affects the inventory and facility locations in the supply chain.

#### **2.1.1.4 Collaboration of Participants**

Many companies use a distribution network of independent intermediaries relaying on downstream channel member to sell their products effectively to the other channel member and ultimately to the end user (Gale, 2005). Goods distribution activity involves the internal and external participants' collaboration (Kottler and Keller, 2008). The activity of distribution is undertaken by wholesalers, retailers and finally the end users (consumers). Wholesalers are channel member who are selling goods and services to retailers to resale or

business use. Retailers sell goods to the end users and whose main income is coming from retailing (Kotler and Kevin, 2012). End users are final users of product or services. Firm's internal departments are participants of the distribution management which include marketing, financial, sales, transport and supply chain departments in the delivery of the products to the ultimate consumers (Sunil Chopra and Peter Meidl, 2007).

Germain and Iyer, (2006) specify that internal integration is combining functions and processes within the firm especially in the areas of warehousing, transportation, inventory management, purchasing, demand planning, production and distribution. In order to integrate internal operations, firms need to have cross functional structures which necessitate the consideration of how coordination and integration can be sustained across the intra-firm relationship (Barratt M., 2004). Firms need to streamline their operations and redesign work routines and processes to eliminate redundancy of work to enable savings of cost and time, and increases the quality of services and finally value to customers. Managers have to consider the market and customers' needs as well as resources to plan the coordinated efforts and manage holistically (Bowersox, 1999).

### **2.1.2 Factors Affecting Distribution Management Performance**

Distribution management is progressively becoming a significant factor that can contribute to the realization of successful organizational strategy (Prabhakarsri 2010). In today's competitive and advanced environment, product distribution management is affected in different ways from company's internal aspects and externally from its environment (Kahia George and Mike Iravo, 2014). According to Smriti Chand (2019), distribution management performance is mainly affected externally by the company marketing environment whereas the internal factor is related to the company internal aspects and performances. John O. Achuora (2012) stated, determinants of distribution performance are financial capacity, transport outsourcing, information systems and relations with government and donors. Mirza Hasan. Hosseini (2018) stated distribution management performance is mainly affected by the company internal performances of financial, employee skills and internal process and by the environmental impact of information technology, infrastructure and government regulations.

### **2.1.2.1 Finance**

A financially strong company can design its own channel of distribution and have a tendency to set up its own distribution channels because of its financial performance. Financially strong channels of distribution can distribute the goods well and also can also finance the produces directly or indirectly. Organizations can lift goods from the manufacturers by paying cash immediately which indirectly amounts to finance the manufacturers. In contrast, company which is not financially strong has to settle down for existing channels of distribution because establishing a new distribution channel that requires high amounts of money (N Lokare, 2017). S. Jaideep (2017) also stated, financially sound companies can establish a separate and well-equipped distribution structure for its products and manage own retail outlets by themselves to effectively manage the distribution. However, financially weak companies have to choose for indirect channels to share resources and expertise of channel members. According to Johnson (2006), performance of a distribution functions in organizations strongly based on the capacity and management of the finance function. Cooper (2006) stated that, finances are used to modernize the distribution management activities such as fleet and drivers compensation related activities, buying required stock to manage stock levels, implement and maintain a robust information system and the likes.

*H1: Finance has significant positive impact on ethio telecom commercial good distribution management performance.*

### **2.1.2.2 Internal process**

According to Davenport and Beers (1995), process refers to a structured and measured set of activities with specified business consequences for customers. It is a structured approach to analyze and continually improve the activities of manufacturing, communications, marketing, product distribution and other major elements of a company operation. The need for every process is to meet the organizations customers' requirements through effective management of the processes activities (Zairi (1997).

Scholars stated the importance and impact of firm's integration internally through process to enhance the supply chain performances. According to Claudine Soosay, Mario Ferrer,

Ricardo Santa and Paul Hyland (2015), internal process is acknowledged to increase efficiencies, performance and competitiveness which involve the coordination, collaboration and integration of distribution activities with other functional areas in an organization. According to Stevens (1989), firms' performance is greatly dependent on internal process integration and they need to integrate their operations and functions internally through process. Process integration is a continuous restructuring activity to link relevant business activities and reducing redundant procedures within and across firms. Distribution management performance is determined by the level of company's internal stakeholders' process integration (Haozhe Chen, 2009).

***H2: Internal process has significant positive impact on ethio telecom commercial good distribution management performance.***

### **2.1.2.3 Employee Skill**

Successful distribution demanded a considerable experience and expertise and thus to have effective products distribution performances, companies must possess essential experience, expertise, and capable staffs (S. Jaideep, 2017). According to Hisham Makki and Siddig Balal (2018), developed skill is a fundamental employee competency that affects service performance and the organizational excellence. The level of performance is always determined by the employee skill and performance has significant positive correlation with employees' competency (Xu and Ye 2014). Employee skills are vital for better performance in service businesses and organizations need to pay attention for employee skills to ensure successful service performance (Siddig Balal Ibrahim, 2018). One of the most important factors to enhance and develop employees' skill is training which in turn affect the performance of the operation. Employee skill is an affecting factor of operation performances and similarly the distribution management (Cole, 2001).

***H3: Employees' skill has significant positive impact on ethio telecom commercial good distribution management performance.***

#### **2.1.2.4 Technology**

According to BR. Williams *et al* (2018), successful distribution management utilizes technologies of information system and equipment consistent: software and highly efficient equipment, forecasting tools, warehouse management and fleet management systems. According to Handfield and Nichols (1999), technology helps all actors of supply chain for smooth communication among stakeholders to reduce lead time, paperwork and other unnecessary and redundant activities in a coordinated manner to improve customer inventory management activities and satisfaction . Technological change has important impact on recent developments in the distribution management activities (Dirk Pilat, 2018). A firm can attain a competitive advantage through the use of information technology (Levi, 2005; Porter & Miller, 2005). According to Brian Sheehan (2017), technology has affected modern product distribution through integration of flows of information between sales, marketing, distribution and logistics. Technology improves flexibility and balances product demand and inventory levels, optimizing warehouse management and maximizing distribution efficiency. Advancements in technology has profound effect on the efficiency and operations of product distribution through introducing technical systems and technology based processes into product distribution models, order fulfillment through which companies can benefited from significant improvements on efficiency. According to Karl Siebrecht (2019), the strategies of improving on time delivery is the use of technology to enhance visibility and track inventory, increase speed to delivery with on demand fulfillment and satisfy customer demand with an agile inventory strategy.

Li (2002) classified the information technology outputs (tools) as communication and planning tools. The communication tools of information technology such: web sites, intranet, internet, and extranet are used to facilitate data transfer and communication among distribution stakeholders. Turner (1993) indicates that firms cannot effectively manage cost, offer high customer service, and become leaders in supply chain management without the incorporating information technologies. Li *et al*, (2001) identified information technology tools such as: electronic data interchange (EDI), enterprise resource planning (ERP), internet, and extranets. Distribution management planning tools are intended to integrate the resource planning activities in a firm. ERP tool, which is considered as the backbone of the logistic systems (Bowersox, 2017) allow organizations to integrate all

processing information tasks related to all processes in the value chain that include financial planning, production planning, inventory management, order fulfillment and customer service.

***H4: Technology has significant positive impact on ethio telecom commercial good distribution management performance.***

#### **2.1.2.5 Infrastructure**

According to Atsushi (2011), public infrastructure is one of the determinants of economic growth that affects firms' productivity as well as people's livelihood by reducing production and transaction costs of firms and improving standards. Energy, telecommunications and freight transport are the dominated infrastructure in the logistics and supply chain management (Robert Puentes, 2015). Respectable infrastructure has many advantages for companies operating in logistics and distribution management. With the modern and high quality infrastructures of facilities, steady power and internet connection, a company is probably to have opportunities to perform successfully (Brain Beers, 2019). From logistics and distribution management perspectives, benefits of transport infrastructure are not limited to reducing travel time, but freight transportation infrastructure reduce direct transportation costs result in supply chain improvements and help companies to reduce their operation costs. (Banister and Berechman, 2001). Lakshmanan (2011) indicated that improved freight services lead to growing trade, followed by improved labor supply and technical diffusion. Lowering sourcing cost is about, reducing lead time, fleet operation, warehousing, and inventory costs. Increasing revenue is the advantages of progressive transport infrastructure (David Jacoby and Daniel Hodge (2008). According to Tewodro Ayalew (2016), the economic benefits from infrastructure investments includes the direct economic gain from the construction and maintenance which is related to accessibility change where transport enables larger markets and enables to save time and costs and the indirect impacts is related to the economic multiplier effects where the price of commodities drop and /or product variety increases. S. Jaideep (2017) also indicated infrastructures and facilities such as transportation, communication, warehousing, banking, insurance, supporting government agencies at national and international level, degree of harmony among states of the country, and relations among nations at large affect firm's distribution

performance. In contrast, frequent interruptions of the infrastructure service supply impose much cost on enterprises, hinder their timely business activities and result in large losses of sales opportunities (Robert Puentes *et al*, 2015). Lack of roads and highways can be a difficult and costly obstacle to overcome and businesses rely on planes and cargo boats to transport goods. Developing countries depends on the highway system to transport their products to all the warehouses; as a result delays or poor road quality would significantly impact their availability of products to the market (Wendy A. Garland, 2019).

***H5: Infrastructure has significant positive impact on ethio telecom commercial good distribution management performance.***

#### **2.1.2.6 Government Regulation**

Since rules and regulations of government play vital role on organizations activity, it has direct or indirect impact on product distribution activities (S. Jaideep, 2017). Changing regulations and legislation in various countries can affect a company's supply chains (Ceva 2010). Michael Lipsky (2016), states the basic role of democratic government is making laws to protect people and/or to minimize the damage caused by naturally occurring economic events. According to (Laura Thompson, 2015), every supply chain is impacted by the ever-growing set of government regulations to step in and require a company to fill out paperwork or prepare for an audit by an outside party, the supply chain will slow down as shipments are set aside to be inspected and cataloged. Government policy decision affects the freight transportation system in numerous ways. According to Frank Williams (2019), governments establish regulations and policies to guide or influence business indirectly at the national level more locally as well as states and municipalities. Government regulates and limits the movements of products and could totally block the distribution of some products. According to Peter Drahos (2004), the provision and distribution of goods is mainly affected by the degree of excludability and the regulatory context of the excludability.

***H6: Finance has significant positive impact on ethio telecom commercial good distribution management performance.***

### **2.1.3 Distribution Management Performance**

According to Ilieş Liviu, Turdean, Ana-Maria and Crişan Emil Babeş, (2009), performance refers to the way in which work is done which is either good or a poor performance. Neely (1995), stated performance as the process of measuring the efficiency and effectiveness of activities for the purpose of evaluating the level of activity to find out whether it is going in the right way and if not, to take corrective measures. Measuring performance is a key concern to improve or avoid inconveniences, monitoring customer relations, process and cost control and to maintain quality (Ackerman, 2003). The main instrument for assessing performance is a performance indicator which is known as key performance indicators (KPI). Smith (2000) stated some of the performance indicators as: reducing costs, increasing efficiency, maximizing profit, enlarging customer database and increasing market share in the process of the whole supply chain management process. Schollars, John O. Achuora, Robert M. Arasa, Wambwa Nzioki, George Ochiri and Patrick Muangangi (2017), identified the distribution management performance indicators as: delivery schedule, profit maximization, efficiency and cost reduction,.

#### **2.1.3.1 Delivery Schedule**

Delivery schedule is an important part of a business distribution activity in supply chain in meeting the firms' customers' expectations and delivery requirements. Poor on-time delivery performance impacts not only customers demand, but it is usually an indicator of poor production efficiency and poor materials handling procedures (Steven D. Peterson, Peter E. Jaret, Barbara Findlay Schenck, 2014). Distribution management performance is measured in terms of where, when and how product and services are to be offered for sale. Delivery schedule is all about the essential mechanism used in goods provisioning and logistical supports for the transfer of goods and services as well as the ownership of goods and services delivered to the customers (Stern, 2006). As stated by Obaji, (2011), distribution gives a new border for competing successful market whenever emphasis is placed on the distribution system design and management of marketing channel systems to provide a remarkable customer services. According to Kotler & Keller (2009), successful

product distribution performance is determined by the level of meeting the planned delivery schedule so as to meet customer's expectations and the requirements.

### **2.1.3.2 Cost Reduction**

According to Kotler (2004), distribution management performance is determined in terms of eliminating unnecessary costs and enhancing profit rate, increase customer satisfaction and market share and raise competitive advantages. With the right distribution strategy in place, with the right mode of delivery and at the right speed of delivery to the appropriate place of purchase, cost can be significantly decreased. Failure to deliver these practical points will result in the decrease and loss of customer orders as well as income and the decline of long-term customer loyalty (Drummond and Ensor 2001). The main objective of product distribution management is to find out the most cost effective way of meeting customer needs in relation to purchasing products, wherever they are and wherever. According to Rob O'Byrne (2015), cost activity reduction starts with the identification of cost areas and separating them into variable and fixed costs through focus on the main areas of: on customers service, products, supply points and on delivery fleet areas. According to Baller, A.C. (2019), increasing distribution management performance is also increases reducing costs related to inventory management, improving delivery management and enhancing product availability. According to Haozhe Chen *et al* (2009), companies adopt approaches of conducting analysis of logistics to get opportunities for savings costs that arises within the them and make internal improvements, such as inventory reductions to reduce working capital, warehousing and transportation costs.

### **2.1.3.3 Profit Maximization**

In today's world of just in time delivery, distribution center efficiency is critical to avoid expensive losses of products and sales. In modern distribution midpoint, most companies ensure that products are available when and where they are needed by developing their distribution center to play their part on supply chain smooth operation. Companies used best practices of automatic data collection to advance shipping information, automate operations and modernize shipping platforms (Rob O'Byrne *et al*, 2014). According to Evan Tarver

(2015), companies are focusing on increasing distribution efficiency to earn more revenue and profit through a focus on increasing the efficiency of their distribution management. Efficiency can be increased through increasing the efficiency of distribution channel by maximizing the benefit of channel intermediaries. Intermediaries are the additional companies that take a manufacturer's product and sell it to a company, such as a distributor or a retailer. Intermediaries are experts in their activities and can increase organizations sales volumes; decrease costs and maximizes the profits (Timothy D. Landry, 2009). The ultimate need of a firm is maximizing profits and enhancing its financial performances and increasing market shares through the elimination of unnecessary and redundant activities in the supply chain (Maria-Florina Balcan, Tuomas Sandholm & Ellen Vitercik, 2018).

## **2.2 Empirical Literature Review**

### **2.2.1 Distribution Management Practices**

According to the research conducted by Christina Nelson (2010) on distribution management practice in China, the main distribution models used are privatized channel, concentrated wholesale markets, decentralized distribution systems and online distribution channels. Most Chinese domestic agents and distribution channels are agents of the state-owned system and privatized recently (Li and Fung Group (2010)). The study indicated the distribution demand forecasting is not redeveloped in China and excludes important variables including seasonality, product cannibalization and forecasting cycles and uses weak expectations to forecast sales and infrequently compare forecasts to actual sales to ensure accurateness. The distribution channel networks tend to lack advanced practices in demand planning, inventory management, and logistics networking which leads to higher operational costs (Christina Nelson *et al*, 2010). In China, logistics infrastructure is built and distribution centers are made across the country with the focus of building large interior cities into major multimodal logistics and distribution hubs (Yuekun Lai, and Zhong Chen, 2011). According to Am Cham-China (2014), the most affecting factor of distribution management is the advancement in technology and rapid expansion of the internet. China created online distribution channels (Alibaba and Taobao) and a business to business and business to consumer opportunities and reached a large number of customers. According to the research conduct by Jiang and Prater (2017), Chinese distribution system is dominated

by a three-tier distribution practices sector and slowly shifted from the socialist to the free market mode in recent time. The enforcing factor for the change and modernize China's distribution and logistics system are the country booming economy, the world trade organization entry and the e-commerce.

According to the research conducted by Pinaki Mishr and Kumar Rajagopalan (2013), on goods distribution management in India, the country made a significant expansion in distribution channels with a vast number of retail distribution channels in the country which are mostly family owned businesses. The research indicated, manufacturers use a three-tier selling and distribution structure that has grown over the years and involves redistribution stockiest, wholesalers, and retailers. According to the research, more enterprising retailers provide credit and home-delivery in urban areas and marketers are increasingly outsourcing some of the key functions distribution to courier to get more efficient ways of reaching the consumers. The study of Sahay, B.S. & Mohan, R. (2003), in India indicated most fast moving consumer goods and pharmaceutical companies use clearing and forwarding agents for distribution.

According to the research of Kashyap, P. (2012), the major distribution channel components in India are: the retail network, wholesale network and the logistics infrastructure. The retail network consists: traditional outlets which are spread across urban and rural area. It is very small in terms of area, number of employees, and number of stock keeping units. Traditional retail in India give a number of advantages for consumers such as convenience, at home delivery, credit service and personalized service. According to Prasad & Aryasri (2011) and Avinash G. Mulky (2013), modern retails have the advantages of providing periodic promotional gifts, lowering prices, wider variety, better environment and higher quality brands.

The studies indicated, China and India use similar distribution structure known as the three-tier selling structure and distribution networks. However, the distribution channels of India is inclined to more traditional and done by networked retailers (Kashyap, P., *et al*, 2012). The distribution channel expansion of China is in some extent tends to the government owned and some to the private and India has also made a significant expansion in

distribution channels to the private. China has made major distribution infrastructure of the logistics and distribution hubs and facilitated for the companies involved in product distribution activities. It can be said that the distribution management practice of China and India are similar in most aspects with slight practice differences (Zhong Chen, *et al*, 2011). The distribution management practice and performance of both China and India are satisfactory and satisfying the customers need.

### **2.2.2 Factors Affecting Distribution Management**

Buck Lin (2014) in his research indicated that a very short delivery time eliminate unnecessary costs and increases efficiency and customers' satisfaction. As the greater the delivery time, the greater is the economy of direct shipment to eliminate the costs of handling and maintaining inventory. According to the research conducted by Kahia George and Mike Iravo, (2014), the route selection impacts highly the ability to deliver goods on time/ according to the research, trucks can avoid traffic congestions and minimize the cost of delivery. The research also indicated, the mode of transport used is an aspect that affects distribution performances management. Inflexible modes of transport such as rail or air may not be suitable for short distances while they may be cost-effective for long distance. Road transport could lead to delivery delays due to traffic overcrowding and unpredictable weather which could result in some roads becoming blocked (Aian Rushton, Phil Croucher, Peter Baker, 2014). According to research conducted by John O. Achuora, Robert M. Arasa, Wambwa Nzioki, George Ochiri and Patrick Muangangion (2012), distribution management performance is determined by the firm's financial capacity, government regulations and donors, technology and transport outsourcing which are positively factors affecting distribution performance.

### **2.2.3 Distribution Management Performance**

Researches indicated that, distribution management performance indicators are several from logistics and distribution management perspectives. Tefera Workalemahu (2018) indicated in his research that, scholars are more interested in reviewing more about product distribution management due to its vital role of improving firm performance. The research

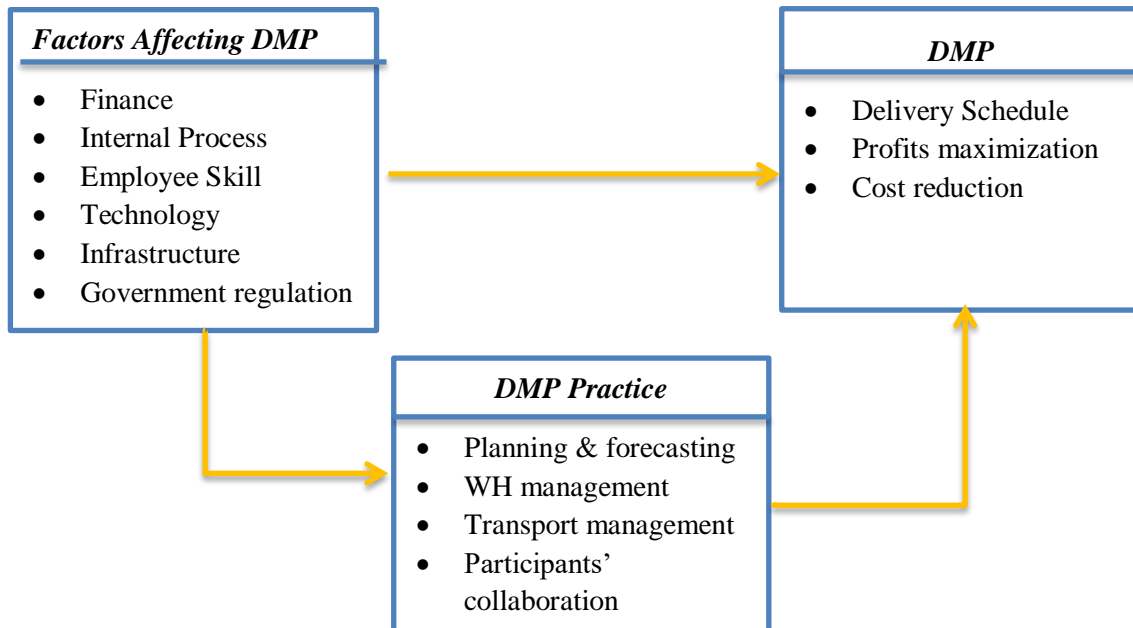
of John O. Achuora, Robert M. Arasa, Wambwa Nzioki, George Ochiri and Patrick Muangang *et al* (2012) revealed that, the use of information technology enhances efficiency in a daily operations for on time and accurate product delivery. Technologies such as track and trace and bar-coding systems enhanced the visibility of logistics end users, enabled customers to track their shipment status and the time of delivery.

A study by Anderson (1997), indicated that coordination and communication among agents, distributors and retailers in distribution management activities improved the channel member efficiency which is implied in cost saving performance. According to the research conducted by (Asiamah Yeboah, Alfred Owusu, Solomon Boakye & Samuel Owusu- Mensah, 2013), effective distribution provides customers with convenience through the provision of products on a scheduled delivery (the right product, at the right place, at the right time). Numerous empirical studies have indicated that effective goods distribution management leads to profitability of a firm (Anderson. 1994; Eklof, 1999; Ittner and Larcker 1996; Fornell 1992; Zeithaml 2000). Anderson and Sullivan (1993) stated that, a firm's future profitability is largely dependent on satisfying current customers through right product delivery on the right time, at the right places.

### 2.3 Conceptual Framework

From the previously conducted studies of the related topics, to indicate the relationship between the factors affecting distribution management performance and the distribution performance the below diagram of conceptual framework is proposed. The framework shows, the factors impacting distribution management performance and distribution performance indicators. Accordingly, the study followed the below proposed conceptual framework as illustrated in Figure 2.1 below.

**Figure 2.1**, Conceptual Framework.



Source: Adapted from Angelmar, Reinhard and Louis (1998) and adjusted by the researcher.

## **CHAPTER THREE**

### **3. RESEARCH METHODOLOGY**

*This chapter is about the research methodology which consist the methodology of the study, description of the study, research approach, research design, population, data source and type, methods of data collection, ethical consideration, methods of data analysis and the data reliability and validity parts.*

#### **3.1 Description of the Study Area**

The area for the study was the ethio telecom internal commercial goods distribution practice and performance in which the activities of distribution management are undertaking by the company sales division, supply chain division and fleet and facility division. The three divisions were selected to address the practical activities of commercial goods distribution management in the company. The sales division was selected to measure the planning forecasting aspects of good distribution and the logistics activities aspects were assessed from the supply chain division. The fleet and facility division was selected to assess the aspects of resources assignment (trucks and forklifts) to mobilize the goods from commercial warehouse to regional and zonal warehouses. The specific area for the study was the area in which the real practical activities of the internal commercial goods distribution is being undergone known as the business logistics in sales division, the distribution management and warehouse management in the supply chain division and the fleet management in fleet and facility division of the ethio telecom.

#### **3.2 Research Approach**

The research approach used is a mixed (qualitative and quantitative) method of research approach. According to Jennifer Wisdom (2013), the basic premise of mixed research approach is that the integration enables to get complete and synergistic utilization of data rather than conducting a distinct quantitative and qualitative data collection and analysis.

The essential principle of mixed methods research is that multiple kinds of data could be collected with different strategies and methods that reflects complementary strengths. Mixed research approach creates the opportunity to compensate for inherent method weaknesses, capitalize on inherent method strengths, and offset inevitable method biases (Michael R. Harwell, 2018). In this research, the qualitative methods was used to collect qualitative data; more specifically the data which cannot be measured using the scientific methods and the quantitative method was used for the data collected through primary data collection instruments which includes questionnaire and measured and analyzed by using the scientific methods.

### **3.3 Research Design**

The research design employed by the researcher was descriptive and explanatory research designs. According to Creswell, John W. (2014), descriptive research design is used to provide answers to the questions of what is associated with a particular research problem. Descriptive statistics allows understanding specific set of observations. Explanatory research design focuses on explaining the aspects of the study in a detailed manner. It helps to give the survey and research design a better focus and significantly limits any unintentional bias information (Muhammad Yousaf, 2017). Explanatory research, also called causal research is conducted to identify the extent and nature of cause-and-effect relationships. Causal research can be conducted to assess influences of specific changes on existing standards and various courses (Zikmund, W.G., Babin, J., Carr, J. & Griffin, M. (2012).

### **3.4 Population**

The targeted population of the study was 71 respondents and no sampling procedure was applied. According to Yadolah Dodge (2013), a census method is the most appropriate method of collecting information for survey conducting on full set of observation objects belonging to a given population and used when a number of populations are small in size.

The researcher employed the census method of population and selected all the concerned head quarter (corporate) staffs of the ethio telecom due to the fact that they have a direct involvement on the distribution management process and practice of the company commercial goods distribution. The census method is preferred for the intention that to increase the accuracy of the survey by involving all the concerned staffs (respondents). The company working units having direct involvements are the ethio telecom business logistics, distribution management, warehouse management and fleet management sections. The total number of the staffs (census) that were identified to collect the data was 71 staffs. The researcher took all the working unit staffs as a total population through census method as it is illustrated in the below table.

Table 3.1; Population of the study

Segment	No. of Staffs	Percentage
Business Logistics staffs	13	18.3
Distribution Management staffs	20	28.2
Warehouse Management staffs	30	42.2
Fleet Management staffs	8	11.3
<b>Total Population</b>	<b>71</b>	<b>100</b>

Source: ethio telecom HR (2019).

### 3.5 Data Sources and Types

In the survey conducting process, both qualitative and quantitative data type was collected from all the relevant sources of secondary and primary. The primary data has a nature of both qualitative and quantitative data whereas the secondary data is the qualitative type.

#### Secondary data

The secondary data source was the related data that has already been published in books, newspapers, magazines, journals, online portals and the ethio telecom internal records through the application of appropriate set of criteria to select secondary data and used in the

study to increase the levels of research validity and reliability. The criteria employed was include, but not limited to date of publication, credential of the author, reliability of the source, quality of discussions, depth of analyses, the extent of contribution of the text to the development of the research area.

### **Primary data**

The primary data source and collection method was the questionnaires of closed-ended and few open-ended questions and one-on-one (conversational) interviews. Semi structured questionnaires and interview was used to collect primary data from the respondents which were designed to address the specific research objectives. The questionnaire and interview questions' response of the ethio telecom's corporate staffs those have direct involvement on the internal distribution management of commercial goods was the primary data sources. Four staffs (two managers and two professionals) were selected and interviewed and their responses are incorporated in the survey data.

### **3.6 Methods of Data Collection**

Warner (2016) developed a data collection procedure knows for the randomized response technique, which enable researchers to obtain sensitive information while ensuring privacy to respondents. This method encourages the respondents and increases their cooperation and motivation and reduces falsely report of their attitudes.

The researcher followed the data collection procedure and applied the predefined approaches and method based on the procedures developed by Warner *et al* (2016) and (Kwanghee Jung, 2015). Accordingly, formal and informal pilot survey research were conducted to get the problem area and to determine the study area and the scope. The population of the study was determined based on the research study population of the methodology. Questionnaires were prepared and distributed for the respondents based on the population determined in the methodology. Structured interview questions was prepared and provided for the selected interviewees. The interview was conducted through: telephone and zoom meeting conference.

### **3.7 Methods of Data Analysis**

The data collected was analyzed and interpreted by using both qualitative and quantitative techniques. The data collected by open ended questions was analyzed qualitatively whereas closed ended questionnaires were analyzed quantitatively. The researcher used a descriptive statistics analysis to analyze quantitative data such as the percentage, frequency, mean and, standard deviation.

Inferential statistics of Pearson's correlation was used to show the relationship and the strength as well as direction of associations between variables. The inferential statistics used in the analysis was regression to indicate interdependence of the independent and dependent variables. The relationship strength between the variables and the impact of independent on dependent variable and statistical significance were assessed. The data analysis tools and software was used to understand, interpret, and derive conclusions. The SPSS (V-20) software was utilized in the data analyzing process.

### **3.8 Data Reliability and Validity Test**

#### **Data Validity Test**

Validity is different in type to test which comprises content, face, internal and external validity (Bryman and Bell, 2007). Content validity was ensured by formulating the questions in understandable words and meanings. Questionnaires included a various questions was prepared based the professionals, expertise and staffs knowledge on the distribution management practice and performance in ethio telecom. The questionnaire was also initially evaluated by the distribution management professionals, manager and employees and they ensured that the contents of the questionnaire were good and easy to understand; which indicated that the instrument fulfills the validity content. The questionnaire was also checked by the professionals, managers and employees to see the contents such as its visibility and size and they suggested that it is acceptable; this implies that it fulfills face validity. The questionnaire included the entire distribution participant (census) as a result it fulfills the external validity or the study addressed the whole population.

Questionnaires were given to eight respondents; for one manager and seven employees, after fulfilling the above stated validity measurements and the reliability of the questionnaire has been checked during the pretest session with the above sample of respondents and ensured that their responses were almost similar. After performing the necessary modifications based on feedback provided, the questionnaires were distributed to the respondents.

### Data Reliability Test

However, the researcher believed the instrument is valid, the reliability or internal consistence of the data was measured using the Cronbach's Alpha method. Cronbach's alpha is known for good measure of reliability which values ranges from 0 to 1. The values in between 0.8 and 1 indicates a considerable reliability, values between 0.70 and 0.80 indicate an acceptable reliability while values below 0.70 are considered less reliable and unacceptable (Mohsen Tavakol and Reg Dennick, 2011). Accordingly, the data consistency reliability was checked using Cronbach's alpha through the use of SPSS (v-20) software and determined based on the below table.

Table 3.2; Cronbach's alpha internal consistency

Cronbach's alpha	Internal consistency
$0.9 \leq \alpha$	Excellent
$0.8 \leq \alpha < 0.9$	Good
$0.7 \leq \alpha < 0.8$	Acceptable
$0.6 \leq \alpha < 0.7$	Questionable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

Source: Mohsen Tavakol and Reg Dennick, (2011).

Accordingly, the Cronbach's alpha test significance result value is 0.807 and the data reliability tested is found to be good. The coefficient values for all variables are accepted and highly reliable.

### **3.9 Ethical Consideration**

Ethical issues should be considered in the process of conducting a research. According to Leedy & Ormarod (2010), a research ethical issue is concerned on protecting respondents from any probable harm related their respond. The respondents had to have informed consent, right to privacy and honesty with professional colleagues. Accordingly, the respondents in the study were selected with full consent and informed to respond for the questionnaires with confidence and understanding the purpose of the study. The researcher assured the respondents that, the collected data will be used only for intended purpose and the information will be kept confidentially. Consequently, the researcher in this regard kept the responses of the respondents honestly and confidentially.

## CHAPTER FOUR

### 4. DATA PRESENTATION AND ANALYSIS

*This chapter is about the data presentation and analysis in which results of the findings are discussed, analyzed and interpreted. The data collected is presented and discussed by using the descriptive statistics such as percent, frequency, mean and standard deviation and analyzed through inferential statistics such as correlation and regression. The distribution management practice, the factors affecting distribution management performance and the distribution management performance of the study case organization is presented, discussed analyzed.*

#### 4.1 Results discussion and interpretation

The data analysis and interpretation were carried out based on the data collected through questionnaire from four units (business logistics, warehouse management, distribution management and fleet management) which were directly involving in the activities of commercial goods distribution. The data was analyzed using Statistical Package for Social Science (SPSS V-20). Based on the methodology research design and data collecting tools, it was intended to collect the data from 71 respondents and the questionnaires were distributed accordingly. The questionnaires were distributed for the respondents through the outlook email group to all the respondents. Due to the national and global effects of COVID-19 virus, some staffs were out of office and couldn't get them to respond for the questionnaires. However, the researcher called telephone on these respondents to respond their views of the questionnaires online. In addition, four staffs (two managers and two professionals) were selectively interviewed and their responses were analyzed and combined with the questionnaire responses.

The data presentation, analysis, discussion and interpretation of the results are presented in the following subheads: first, the study variables were analyzed and described from

statistical point of view through use of frequencies, means and standard deviations. Second, the researcher used a correlation analysis, through Pearson's correlation to measure the degree of association between different variables under consideration. Finally, regression analysis was used to test the effect of independent variables on dependent variable and to check their significance level.

#### **4.1.1 Demographic data presentation and analysis**

Releasing censuses demographic characteristics is important before analyzing data to make clear and meaningful for the reader. Information related to personal and demographic status of respondents was requested and provided by using the percent and frequency. Table (4.1) represents the general characteristics of the respondents in terms of gender, educational qualification and years of experiences. The other personal and demographic dimensions were intentionally left out as they are not important for this research.

**Gender:** The gender distribution of respondents in ethio telecom covers 43 (60.6%) of male and 28 (39.4%) of female. This implies that the gender distribution of ethio telecom employees involving in commercial goods distribution activities is inclined to male employees dominant.

**Educational qualification:** Most of the respondents hold bachelor's degree with 57 (80.3%) respondents, while 14 (19.7%) respondents hold second degree and above. This shows that most of the respondents have a good academic qualification to understand the concept of the variables and answer the research questionnaires.

**Years of experience:** the experiences of most respondents are more than ten years with experiences of 53 respondents (74.7%), above ten years, 15 respondents (21.1%) between six to ten years and the rest 3 respondents (4.2%) have worked in the company below five years. This indicates that most of the respondents selected have good experience regarding the company and their response can be considered genuine.

Table 4.1; Demographic analysis

Dimensions	Measurement	Frequency	Percent
Respondents Gender	Male	43	60.6
	Female	28	39.4
Working Experience	1-5 years	3	4.2
	6-10 years	15	21.1
	11-15 years	42	59.2
	Above 16 years	11	15.5
Academic Status	First Degree	57	80.3
	Masters	14	19.7

Source: Survey result, 2020

#### 4.1.2 Descriptive Analysis

Mean is a measure of central tendency that offers a general picture of the data without unnecessarily covering one with each of the observations in the data set. The mean of respondents in each dimensions of distribution management suggest that the average amount that each dimension has positive or negative response of respondents. In this case, the mean of each item together with their respective dimension of the overall mean was calculated in order to conclude the commercial goods distribution management practice, performance and the factors affecting its performance. The mean statistical values of the items were based on the 5 point Likert's scale and demonstrated through the following assumptions: if the mean (M) score is less than 2.5 it implies that the respondents "disagree" with the statement, if the mean score is equal to 2.5 it indicates that the respondents prefer to say "Neutral", and finally if the mean score is greater than 2.5 it implies that the respondents "agree" with the statement.

Accordingly, the mean scores have been computed for all the distribution management practice and performance that includes planning and forecasting, warehouse management, fleet management, collaboration of participants' and also distribution management performance dimensions and the factors affecting distribution management performance by equally weighting the mean scores of all the items under each dimensions and factors. The

average mean results of each distribution management practice dimension together with their respective variables was separately presented, analyzed and interpreted as follows.

#### 4.1.2.1 Distribution Management Practice

**Objective 1,** To assess the distribution management practices of planning and forecasting, warehouse management, transport management and participants' collaboration.

To examine the objective, the researcher used a descriptive statistics; mean (M), mean of mean (MM), standard deviation (SD) and mean of standard deviation (MSD).

Table 4.2; Distribution Management Practice

Descriptive Statistics		<i>N=71</i>
Dimensions		MSD
Planning and Forecasting	3.87	0.80
Warehouse Management	3.38	0.70
Transport Management	4.08	0.74
Participants' Collaboration	4.17	0.70
Overall average	3.88	0.74

Source: Survey result, 2020

Table 4.2 shows that the mean value of the variables is between 3.38 and 4.17 with standard deviations between 0.70 and 0.80. The overall mean of the four variables is 3.88 with standard deviation 0.74, which mean there is an agreement among ethio telecom employees that the commercial goods distribution management practice is satisfactory (acceptable). Based on the means result of the variables, participant's collaboration is relatively is the highly implemented practice with the mean value of 4.17. This is due to the fact that the common consent on the requirement of collaboration among ethio telecom distribution participants on goods commercial goods distribution activities is high. According to the interview responses, ethio telecom distribution management participants give the highest priority for the commercial goods distribution from any other goods distribution. Warehouse management dimension shows the relatively least practice dimension with the mean value of 3.38. This shows that the company warehouse management practice is relatively low, but it

doesn't mean that it is low performance in the distribution management because its mean value is above 2.5. The interview response indicated that, the warehouse environment is not convenient and the tools (forklifts) used is not modern and suitable for the operation. The storage space limitation is also indicated as a challenge in the response. The transport management and the planning and forecasting are the practices with mean values 4.08 and 3.87 respectively.

Based on the comments from the survey on the distribution management practice, the cumulative company distribution management is on a better practice due to the fact that the mean value of distribution management practices: planning and forecasting, warehousing, transport management and participants' collaboration result shows the mean values of more than 2.5. This means, the respondents are agreed there is an acceptable distribution management practices in the company. In addition, the survey result shows the same to Dent, J. *et al* (2011) for the distribution management activities. Therefore, ethio telecom has a good practice implementation of goods distribution management as the interviews response also indicated the same result with the questionnaires' response. The detail dimension results are discussed below.

#### 4.1.2.1.1 Planning & Forecasting

Table 4.3; Planning & forecasting data

Dimensions	Statements	M	SD
Planning and Forecasting	Planning and forecasting of ethio telecom goods distribution is based on the customers' demand and avoid the seasonal inventory fluctuation.	3.8	0.749
	Planning and forecasting of ethio telecom goods distribution order preparation is based on the available stocks and avoid the backorders.	3.94	0.735
	The number of orders to be fulfilled and the number of trucks required for goods distribution activity is planned and forecasted by determining the warehouse loading capacity.	3.9	0.7
	Goods distribution delivery schedule in ethio telecom is planned and forecasted based on the available resources such as tools, forklift and transport trucks.	3.83	0.878
	Overall average	3.87	0.8

Source: Survey result, 2020

Respondents were given the statements (dimensions) that denote the commercial goods distribution management practice of ethio telecom and to show the extent to which they agreed with distribution management practices of: planning and forecasting, warehouse management, transport management and collaborations of stakeholders. Their responses are given in table 4.3 above.

It is indicated that the distribution management practices mean value is between 3.38 and 4.17 with the standard deviation between 0.70 and 0.80. The overall mean value of distribution management practices is 3.88 with standard deviation 0.74, which means there is an agreement among employees' that there is a better distribution management practice within the company. The planning and forecasting practice with the mean value of 3.87 and standard deviation 0.8 indicated that the company has a better planning and forecasting practice of commercial goods distribution management. Based on the comments from the survey of distribution management practice, it is an improved practiced as the average mean value result showed the mean of more than 2.5. This means the respondents agreed with better implementation of the planning and forecasting practice on commercial goods distribution activity in ethio telecom.

#### 4.1.2.1.2 Warehouse Management

Table 4.4; Warehouse management data

Dimensions	Statements	M	SD
Warehouse Management	Ethio telecom warehouse storage areas are designated as a receiving, staging, storing, picking and packing areas and avoided goods distribution delay.	3.42	0.75
	Ethio telecom warehouse space is enough to accomplish the warehousing operations.	3.23	0.76
	Ethio telecom warehouse environment is convenient and suitable for warehousing operations.	3.38	0.641
	Ethio telecom customers' orders are fulfilled timely and efficiently and minimized the seasonal inventory fluctuations.	3.61	0.765
	Material handling tools used in ethio telecom warehouse operations are suitable and appropriate.	3.25	0.731
	Overall average	3.38	0.7

Source: Survey result, 2020

Warehouse management is one of the activities in distribution management. The preceding table 4.4 indicated the mean value of each item related to the distribution management practices in the warehousing activities. The respondents show their agreement on a good practice of warehousing with the mean value (M) =3.38 and standard deviation score of (SD) =0.7 which indicated there is an agreement among ethio telecom employees on the good practice of warehousing in regards of managing the distribution management activities of commercial goods. The warehousing activity practice indicated the relatively the lowest values of mean and standard deviation, (M) = 3.38 and (SD) = 0.7 respectively. Most of the survey respondents are from the warehouse management of the ethio telecom (as shown on methodology part) and they indicated their agreement levels that the company material handling tools usage and practice is the lowest compared to the other measuring *criteria*. The interview response of the survey also indicated the relative low level practice of the warehousing is related to the warehouse space shortage and the inconvenient warehouse environment and tools used for goods movement. Based on the comments from the survey, the warehouse management practice is on a good track due to the fact that the averages mean value result indicated more than 2.5 which mean the respondents are agreed as there is a good practice of warehouse management practice of commercial goods distribution management in ethio telecom. Therefore, it is concluded that the company has a satisfactory practice of warehouse management practice.

#### 4.1.2.1.3 Transport Management

Table 4.5; Transport management data

Dimensions	Statements	M	SD
Transport Management	Trucks assigned in ethio telecom for goods transportations are suitable and convenient.	4.06	0.735
	Ethio telecom assigns trucks for goods transportation on the time of request and fulfills the trucks demand and requirement.	4.2	0.689
	Ethio telecom assigns trucks based on the goods volume and type.	4.2	0.71
	Ethio telecom assigns trucks by determining the geographical and destination distance aspects.	3.89	0.82
	Overall average	4.08	0.74

Source: Survey result, 2020

Transport management is one of the activities of distribution management. Table 4.5 indicated the mean value of each item related to the distribution management practices of ethio telecom goods transport management activities. The respondents presented their agreement level on a better transport management practice with the mean value of (M) =4.08 and standard deviation score of (SD) =0.74. This indicated that there is an agreement among employees of the company on the satisfactory practice of transport management in regards of managing the company commercial goods distribution management activities. The survey respondents indicated their agreement levels that the goods transport management practice is low compared to the other measuring dimensions. The interview response also indicated the company is managing goods transportation activities by its own available trucks and recommended it should focus on its main mission and should outsource the transport management services to decrease the transport related problems.

Based on the comments from the survey, the transport management practice is on a better footpath due to the fact that the averages mean value result indicated more than 2.5 which mean the respondents are agreed on there is a good practice of transport management on commercial goods distribution management in ethio telecom. Therefore, it can be concluded that the company has a realistic practice of transport management.

#### 4.1.2.1.4 Participants Collaboration

Table 4.6; Participants collaboration data

Dimensions	Statements	M	SD
Participants' Collaboration	There is a high collaboration among ethio telecom distribution participants on commercial goods distribution activities.	4.24	0.597
	There is high common consent on the requirement of collaboration among ethio telecom distribution participants on goods commercial goods distribution activities.	4.27	0.696
	There is goods distribution process integration among ethio telecom distribution participant units.	4.24	0.686
	There is a high information flow among ethio telecom participants on commercial goods distribution activities.	3.94	0.809
	Overall average	4.17	0.7

Source: Survey result, 2020

The other dimension of distribution management is participants' collaboration. It is described in table 4.6 that the mean value of participants' collaboration is between 3.94 and 4.27 with the standard deviation between 0.60 and 0.81. The overall mean value of the participants collaboration is  $(M) = 4.17$  with standard deviation  $(SD) = 0.70$ , which mean there is an agreement among ethio telecom employees on the relatively best practice of distribution management participants collaboration in respective to the other distribution management functions dimension. The highest mean value  $(M) = 4.27$  is indicated on the dimension of common consent on the requirement of collaboration among the company employees measuring point. The interview response also indicated that the commercial goods distribution management in ethio telecom is given the highest priority among the stakeholders. The respondents also indicated on the questionnaire open ended question response that the ethio telecom distribution participants' collaboration is an exemplary for other company stakeholders' activities. This indicates that the collaboration among ethio telecom commercial goods distribution management participant (stakeholders) collaboration is high. The study is similar with the findings of Anderson *et al* (1997), which indicated that coordination and communication among participants of distribution management activities improved efficiency which is implied in cost saving performance.

Based on the remarks from the survey, the participants' collaboration practice is relatively on a best track due to the fact that the averages mean value result  $(M) = 4.27$  indicated more than 2.5 which mean the respondents are agreed as there is a relatively best practice of collaboration in the ethio telecom commercial distribution management. Therefore, the company has a realistic practice of distribution participants' collaboration.

In a generalized manner, the descriptive analysis results of the study indicated that ethio telecom has a good commercial goods distribution management practices.

#### 4.1.2.2 Factor affecting distribution management performance

This part of the survey describes dimensions of the factors affecting distribution management performances such as technology, infrastructure, government regulation, finance, internal process and employees' skill. The results are presented as follows and the researcher used a descriptive statistics like Mean and Standard Deviation to deal with the below objective.

**Objective 2,** To identify the factors affecting distribution management performance of ethio telecom commercial goods.

Table 4.7 below indicated the results of the factors affecting the ethio telecom commercial good distribution management performance which is presented by using a descriptive statistics.

Table 4.7; Factor affecting distribution management performance.

Descriptive Statistics		N=71	
Dimensions	MM	MSD	
Information Technology	4.29	0.66	
Infrastructure	4.12	0.64	
Government Regulation	2.98	0.86	
Finance	4.18	0.67	
Internal Process	3.77	0.81	
Employees' Skill	4.22	0.69	
Overall average	3.93	0.72	

Source: Survey 2020

It is indicated in table 4.7 above that the average mean value of the factors that affect distribution management performance is between 2.96 and 4.44 with standard deviation between 0.566 and 0.951. The overall mean value is 3.93 with standard deviation 0.72, which indicate that there is an agreement among ethio telecom employees that there is a positive impact of the factors. As shown in table above (Table 4.6), the information technology impact is relatively the highest on the distribution management performance with mean value of 4.29 and government regulation is the lowest with a mean value of 2.98.

Based on the observations from the survey of the factors affecting distribution management

performance, the ethio telecom commercial goods distribution management is positively impacted by the factors such as financial capacity, internal process, employees ‘skill, information technology, infrastructure and government regulation. It is due to the fact that, the aggregate mean value of all the factors result show more than 2.5 which means the respondents are agreed on the positive impact of the factor on the distribution management performance for ethio telecom. The survey interview response also indicated that the factors have a positive impact in advancing the distribution of commercial goods. Therefore, the ethio telecom commercial goods distribution management performance is positively affected by the factors. The detail dimension results are discussed below.

#### 4.1.2.2.1 Technology

Table 4.8; Technology dimension data

Dimensions	Statements	M	SD
Technology	Utilizing technologies in ethio telecom enhanced its performance of managing the seasonal inventory fluctuations.	4.44	0.603
	Utilizing technologies in ethio telecom enhanced cycle time’s performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	4.35	0.612
	Utilizing technologies in ethio telecom enhanced its performance of seasonal inventory fluctuation management of its distribution to determine its inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs.	4.27	0.696
	Utilizing technologies in ethio telecom enhanced the cycle time’s performance of its distribution to sustain the efficient product provisioning and profit maximizing.	4.11	0.747
	Overall average	4.29	0.66

Source: Survey result, 2020

Distribution management performance affecting factors were identified and provided for the respondents to describe their level of agreement and their responses are presented in table 4.8 above. As described in the table the mean value of the technology dimension is between 4.41 and 4.44 with the standard deviation between 0.603 and 0.747. The overall mean value of the technology variable is 4.29 with standard deviation 0.66. This means there is an agreement among the company employees that the company distribution management performance is positively impacted by the technology factor. The technology positive

impact on the company distribution management performance is the highest with the mean value of 4.44, whereas the relative lowest impact is with mean value of 2.96.

Based on the comments from the survey response, the ethio telecom commercial goods distribution management performance is positively impacted by the technology factors due to the fact that the mean value of the factor result shows more than 2.5. This means the respondents are agreed on the positive impact of technology on the commercial goods distribution management performance the company. The survey interview result also indicated, the company is highly employed the information technology systems in the supply chain activities. The response stated, the commercial goods distribution management and sales activities are fully automated and integrated through ERP and CRM system. The study is similar with the findings of Achuora, Robert M. Arasa, Wambwa Nzioki, George Ochiri and Patrick Muangang *et al* (2012) which revealed that, the use of information technology enhances efficiency of on time and accurate product delivery. Therefore, the company’s commercial goods distribution management performance is positively affected by the technology factor.

#### 4.1.2.2.2 Infrastructure

Table 4.9; Infrastructure dimensions

Dimensions	Statements	M	SD
Infrastructure	Infrastructure enhanced the seasonal inventory fluctuation performance of ethio telecom to effectively manage the inventory levels of its distribution.	4.31	0.623
	Infrastructure enhanced cycle time’s performance of ethio telecom distribution management to shorten the length of delivery time and increase the sales efficiency.	4.27	0.608
	Infrastructure enhanced seasonal inventory fluctuation performance of ethio telecom distribution management to determine the inventory level in the warehouse; limit wastes, prevent shortages & reduce costs.	4.11	0.708
	Infrastructure enhanced the cycle time’s performance of ethio telecom distribution management to sustain the efficient product provisioning and profit maximization.	3.8	0.624
	Overall average	4.12	0.64

Source: Survey result, 2020

It is indicated in table 4.9; the mean value of the infrastructure variable is between 3.80 and 4.31 with the standard deviation between 0.608 and 0.708. The overall mean of the infrastructure variable items is 4.12 with standard deviation 0.64. This means there is an agreement among the company employees that the ethio telecom commercial goods distribution management performance is positively impacted by the infrastructure factor. The infrastructural positive impact on the company distribution management performance is the highest with the mean value of 4.31, whereas the relative lowest impact is with mean value of 3.80.

Based on the comments from the survey response of the infrastructure factors on the distribution management performance of the ethio telecom, it has positively impacted by the infrastructure factors due to the fact that the mean value ( $M = 4.12$ ) of the factor result show more than 2.5. This means the respondents are agreed on the positive impact of infrastructure on the distribution management performance of ethio telecom. The survey interview result also indicated that, the company information and communication technology (ICT) infrastructure is one of the dominant infrastructural factors to enhance the commercial goods distribution management performance of the company. The survey open ended questions respond also revealed the ICT infrastructure installed for internal integration of the ERP and CRM systems enabled the company to increase the effectiveness and efficiency of the distribution management. Therefore, the company's commercial goods distribution management performance is positively affected by infrastructure factor.

### 4.1.2.2.3 Government Regulation

Table 4.10; Government regulation dimension

Dimensions	Statements	M	SD
Government Regulation	Government regulation enhanced the ethio telecom commercial goods distribution performance to effectively manage the seasonal inventory fluctuation of its distribution at inventory levels.	3.15	0.951
	Government regulation enhanced the ethio telecom cycle time's performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	3.06	0.86
	Government regulation enhanced the ethio telecom performance of seasonal inventory fluctuation management of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs.	2.96	0.818
	Government regulation enhanced the ethio telecom cycle time's management performance of its distribution to sustain the efficient product provisioning and profit maximizing.	2.73	0.81
	Overall average	2.98	0.86

Source: Survey result, 2020

The government regulation factor impact measuring dimension in table 4.10 indicated that, the mean value of the variable is between 2.96 and 3.15 with the standard deviation between 0.810 and 0.951. The overall mean of the government regulation variable items is 2.98 with standard deviation 0.86. This means there is an agreement among the company employees that the ethio telecom commercial goods distribution management performance is positively impacted by the government regulation. However, the average mean relatively showed the impact is approaching to the neutral level of the dimension measurement which is relatively the lowest dimensional value. The government regulation positive impact on the company distribution management performance is relatively the highest with the mean value of 3.15, whereas the relative lowest impact is with mean value of 2.96.

Based on the observations from the survey result of the government regulation factors on the distribution management performance of the ethio telecom, it is slightly positive impacted by the due to the fact that the mean value (M) = 2.98) which is more than 2.5. This *means* the respondents are relatively inclined to the neutral level and most respondents are agreed

on the positive impact of government regulation on the commercial goods distribution management performance of ethio telecom. The survey interview result also indicated that, the positive impact of the government regulation is insignificant on the distribution management of the ethio telecom distribution management rather it inclined to the negative impact due to unexpected decision by government direction that could affect the company distribution management activities such as movement time restriction on heavy trucks. Therefore, the company’s commercial goods distribution management performance is slightly positively affected by government regulation factor.

#### 4.1.2.2.4 Finance

Table 4.11; Finance dimension

Dimensions	Statements	M	SD
Finance	Financial capacity enhanced the ethio telecom seasonal inventory fluctuation management performance of its distribution to effectively manage the inventory levels.	4.41	0.623
	Financial capacity enhanced the ethio telecom cycle times management performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	4.23	0.566
	Financial capacity enhanced the ethio telecom the seasonal inventory fluctuation management performance of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs	4.15	0.749
	Financial capacity enhanced the ethio telecom cycle time’s performance of its distribution to sustain the efficient product provisioning and profit maximizing.	3.92	0.751
	Overall average	4.18	0.67

Source: Survey result, 2020

The mean value of the financial capacity variable is between 3.92 and 4.41 with the standard deviation between 0.566 and 0.751 as it is indicated in the above table 4.11. The overall mean of the finance variable is 4.18 with standard deviation 0.674. This means there is an agreement among the company employees; the ethio telecom distribution management performance is positively impacted by the financial factor. The financial capacity positive impact on the company distribution management performance is the highest with the mean value of 4.41, whereas the relative lowest impact is with mean value of 3.92.

Referring the comments from the survey of the financial impact on the commercial goods distribution management performance of the ethio telecom, it is positively impacted by the financial factor due to the fact that the mean value (M) = 4.18) which is more than 2.5. This means the respondents are agreed on the positive impact of financial capacity on the commercial goods distribution management performance of ethio telecom. The survey interview result also indicated that, the company is financially strong to manage the distribution of commercial goods effectively. The survey open ended questions response also revealed that the company financial strength enabled the company to enhance its distribution management performances by acquiring the advanced technologies and automated systems in its supply chain activities. Therefore, the company’s commercial goods distribution management performance is positively affected by financial capacity factor.

#### 4.1.2.2.5 Internal Process

Table 4.12; Internal process dimension

Dimensions	Statements	M	SD
Internal Process	Internal process of ethio telecom enhanced the seasonal inventory fluctuation performance of its distribution to effectively manage the company’s inventory levels.	4	0.811
	Internal process of ethio telecom enhanced cycle time’s management performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	3.86	0.798
	Internal process of ethio telecom enhanced the seasonal inventory fluctuation management performance of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs	3.69	0.748
	Internal process of ethio telecom enhanced the cycle time’s management performance of its distribution to sustain the efficient product provisioning and profit maximizing.	3.54	0.892
	Overall average	3.77	0.81

Source: Survey result, 2020

As shown in the above table 4.12, the mean value of the internal process variable is between 3.54 and 4.00 with the standard deviation between 0.748 and 0.982. The overall mean of the internal process variable items is 3.77 with standard deviation 0.81. This means that there is an agreement among the ethio telecom employees that the company commercial goods distribution management performance is positively impacted by internal process. The internal process positive impact on the company distribution management performance is the highest with the mean value of 4.00, whereas the relative lowest impact is with mean value of 3.54. Referring the comments from the survey response of the internal process factors on the commercial goods distribution management performance of the ethio telecom, it's positively impacted by the internal process factor due to the fact that the mean value (M) = 3.77 result indicated more than 2.5. This means that the respondents are agreed on the positive impact of internal process on the distribution management performance of ethio telecom. The survey interview result also indicated that, the company internally integrated the activities of the whole supply chain procedurally and by information technology system bases to manage the distribution of commercial goods effectively. The survey open ended questions response also revealed that the company has the internal operational level agreement (OLA).

Therefore, the company's commercial goods distribution management performance is positively affected by the internal process factor.

#### 4.1.2.2.6 Employees Skill

Table 4.13; Employees' skill dimension

Dimensions	Statements	M	SD
Employees' Skill	Employees' skill enhanced the ethio telecom seasonal inventory fluctuation performance of its distribution to effectively manage the company's inventory levels.	4.34	0.653
	Employees' skill enhanced the ethio telecom cycle time's management performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	4.31	0.667
	Employees' skill enhanced the ethio telecom seasonal inventory fluctuation management performance of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs	4.21	0.715
	Employees' skill enhanced the ethio telecom cycle time's management performance of its distribution to sustain the efficient product provisioning and profit maximizing.	4.03	0.736
	Overall average	4.22	0.69

Source: Survey result, 2020

It is all agreed that human resource is the key factor for companies' success or failure. Table 4.13 above showed, the mean value of the employees' skill variable is between 4.34 and 4.03 with the standard deviation between 0.653 and 0.736. The overall mean of the employees' skill variable items is 4.22 with standard deviation 0.69. This means that there is an agreement among the ethio telecom employees that the company commercial goods distribution management performance is positively impacted by the employees' skill. The employees' skill positive impact on the company distribution management performance is the highest with the mean value of 4.34, whereas the relative lowest impact is with mean value of 4.03. The study of Hisham Makki and Siddig Balal *et al* (2018), indicated the same result to the finding that stated, developed skill is a core employee competency that affects service performance and organizational excellence. The finding is also similar with the findings of Hisham Hakki and Sidig Balal (2018), which indicated the employees' competency and service performance significant related. It is also similar with the finding of Xu and Ye *et al* (2014) who stated as the level of performance is always determined by

the employee skill and performance has significant positive correlation with employees' competency.

Denoting the comments from the survey responses of the employees' skill on the commercial goods distribution management performance of ethio telecom, its performance is positively impacted by the employees' skill due to the mean value of  $(M) = 4.22$  indicated more than 2.5. This means that the respondents are agreed on the positive impact of employees' skill on the distribution management performance of ethio telecom. The survey interview result also indicated the company employees are skill full and developed their competency through periodic trainings which are purchased and given to them from external academic and training centers and internally by its own training institute called Telecom Excellence Academy (TExA). The survey result (demographic analysis) also indicated the company employees are academically advanced and most employees developed the experiences of distribution management activities. Therefore, the company's commercial goods distribution management performance is positively affected by employee' skill factor.

In a generalized manner, the descriptive analysis results of the study indicated the factors such as finance, internal process, employees' skill, technology, infrastructure and government regulations were influencing the ethio telecom commercial goods distribution management performance.

#### **4.1.2.3 Distribution management performance.**

This part of the survey describes distribution management performances indicators (dimensions) such as delivery schedule, profit maximization and cost reduction. The results are presented by using a descriptive statistics to deal with the below objective.

**Objective 3,** To assess the distribution management performance of ethio telecom commercial goods distribution.

Table 4.14 indicates the distribution management performance results of the ethio telecom commercial goods distribution management.

Table 4.14; Distribution Management Performance.

Descriptive Statistics		<i>N=71</i>
Dimensions	M	MSD
Delivery Schedule	4.12	0.76
Profit Maximizations	3.91	0.87
Cost Reduction	3.65	0.85
Overall average	3.82	0.86

Source: Survey Result 2020.

As shown in table 4.14, the average mean value of the of commercial goods distribution management performance variables is between 3.65 and 4.12 with standard deviation between 0.76 and 0.87. The overall mean value of the four dimensions is 3.82 with standard deviation 0.86, which indicate that there is an agreement among ethio telecom employees that there is a high distribution management performance. As shown on the table above there is a relatively higher performance of distribution management on the delivery schedule with the mean value of 4.12. With a mean value of 3.65 the company has the relative lowest performance of distribution management performance in regards of cost reduction dimension.

Based on the comments from the survey response, the ethio telecom commercial goods distribution management performance is progressive in terms of the variables: delivery schedule, profit maximization and cost reduction. The mean value of the aggregate distribution management performance dimensions showed more than 2.5. This means the respondents are agreed there is a notable commercial goods distribution management performance in ethio telecom. The survey interview result also indicated there is an overall periodic enhancement on distribution management performance as commercial goods distribution is the backbone for the overall company revenue. It indicated, the company paid more attention on the commercial goods distribution than ever and the efficiency in commercial goods distribution management is the main reason for the periodic enhancement of the company revenue. Therefore, the company has notable performance as the survey likert's and the interview result indicated the same for the distribution management performance.

#### 4.1.2.3.1 Delivery Schedule

Table 4.15; Delivery schedule dimension

Dimensions	Statements	M	SD
Delivery Schedule	Ethio telecom effectively managed its distribution and ensures real-time delivery.	4.25	0.712
	Ethio telecom effectively managed its distribution in regardless of avoiding seasonal inventory fluctuations and ensures the customer responsiveness.	4.21	0.773
	Ethio telecom effectively managed its distribution functions and reduced the demand and supply gaps.	4.11	0.766
	Ethio telecom effectively managed its distribution functions and enhanced the customer satisfaction.	3.89	0.803
	Overall average	4.12	0.76

Source: Survey result, 2020

Table 4.15 indicated the mean value of the variable is between 3.89 and 4.25 with the standard deviation between 0.712 and 0.803. The overall mean value of delivery schedule dimension is 4.12 with standard deviation 0.76; which means there is an agreement among employees of ethio telecom that the company has efficient and real time delivery schedule. The company has the efficient delivery schedule performance of real time delivery with mean value of 4.25 (highest) and the relative lowest performance of delivery schedule respective to customer satisfaction with mean value 3.89. The lowest performance measuring dimension indicated, the ethio telecom customer satisfaction is low (high negative customer satisfaction impact) in this regard compared to the other dimensions. Remarking on the comments from the survey responses on commercial goods distribution management performance of ethio telecom, delivery schedule dimension is relatively the highly enhanced performance due to the mean value of (M)=4.12 indicated more than 2.5. This indicated that the respondents are agreed delivery schedule is the highest distribution management performance on ethio telecom commercial goods distribution.

#### 4.1.2.3.2 Profit Maximization

Table 4.16; Profit maximization dimension

Dimensions	Statements	M	SD
Profit Maximizations	Ethio telecom efficiently managed the seasonal inventory fluctuations of its distribution and maximized its profit.	4.15	0.889
	Ethio telecom efficiently managed the cycle time performance of its distribution and shortened the product delivery time, avoids time wastes and enhanced its profits.	4.03	0.81
	Ethio telecom efficiently managed its distribution management functions in the way that it limit wastes/surplus, avoid damages and prevent shortages and enhanced its profits.	3.94	0.86
	Ethio telecom efficiently managed its distribution functions and enhanced its sales performance and maximized its profits.	3.7	0.947
	Ethio telecom efficiently managed its distribution functions and increased its distribution coverage and market share performances.	3.72	0.848
	Overall average	3.91	0.871

Source: Survey result, 2020

To measure the profit maximization performance, related measuring dimensions were provided for the respondent to show their level of agreement. The responses presented in table 4.16 shows; the mean value of the profit maximization variable is between 3.70 and 4.15 with the standard deviation between 0.947 and 0.810. The overall mean value of profit maximization variable items is 3.91 with standard deviation 0.87, which means there is an agreement among employees of ethio telecom that the company has efficient profit maximization performance on commercial goods distribution. The company has the efficient profit maximization performance with the dimension of managing the seasonal inventory fluctuations with mean value of 4.15 and the relative lowest performance with the dimension respective to managing its distribution functions and enhancing sales performance with mean value 3.70. This indicated ethio telecom sales performance is low in relation to the other profit maximization performance dimension. The study is similar with the study of Evan Tarver *et al* (2015), on distribution efficiency stating that focusing on

increasing distribution efficiency is maximizing the company revenue and profit. The studies of Anderson (1994); Eklof, 1999; Ittner and Larcker 1996; Fornell 1992; Zeithaml 2000) and Anderson and Sullivan (1993) indicated that effective goods distribution management leads to profitability of a firm.

Remarking on the comments from the survey response of distribution management performance of ethio telecom, profit maximization is the observed to be the second best performance of ethio telecom performance measuring dimensions due to the fact that the mean value of the profit maximization (M)=3.91 is more than 2.5. This indicated that the respondents are agreed the profit maximization performance of the ethio telecom on commercial goods distribution is the second dominant distribution management performance.

#### 4.1.2.3.3 Cost Reduction

Table 4.17; Cost reduction dimension

Dimensions	Statements	M	SD
Cost Reduction	Ethio telecom efficiently managed its distribution functions and eliminated surplus inventory and product obsolescence at the warehouse, limit wastage and avoid damages.	3.7	0.852
	Ethio telecom efficiently managed its distribution functions and insured the cost effective operations on the distribution functions.	3.73	0.878
	Ethio telecom efficiently managed its distribution functions and provides cost effective service to its customers.	3.69	0.803
	Ethio telecom efficiently managed its distribution functions and shortened the distribution lead time (the time which elapses between the receipt of customer's order and the delivery of goods).	3.49	0.86
	Overall average	3.65	0.85

Source: Survey result, 2020

Cost reduction performance measuring dimensions were provided for the respondent to show their level of agreement by using Likert's scales and their responses are indicated in table 4.17 with the mean value of the cost reduction variable between 3.49 and 3.73 and the standard deviation between 0.803 and 0.878. The overall mean value of cost reduction

variable items is 3.65 with standard deviation 0.85, which means there is an agreement among employees of ethio telecom that the company has effective cost reduction performance on commercial goods distribution management. The company has the effective cost reduction performance on the dimension of cost effective distribution functions with mean value of 3.73 and the relative lowest performance on the dimension of shortening distribution lead time with mean value 3.49. The mean value indicated that ethio telecom goods delivery is costly in relation to the other cost reduction performance dimension. The interview and open-ended questions response also indicated, the cost reduction activities of the company is relatively weak which is related to transportation, limiting wastes, disposal (holding cost) and long delivery time. The finding is similar with the findings of Baller, A.C. *et al* (2019), which stated increasing distribution management performance is reducing distribution costs which are related to inventory, improving delivery and enhancing product availability.

Based on the comments from the survey response, ethio telecom commercial goods distribution management performance of cost reduction is the observed to be the better due to the fact that the mean value of the cost reduction dimension ( $M$ ) = 3.65 shows more than 2.5. This indicated that the respondents are agreed the overall cost reduction performance of the ethio telecom is satisfactory. Generally, the descriptive analysis results of the study indicated that ethio telecom has enhanced performance of commercial goods distribution management.

### **4.1.3 Inferential statistics**

#### **4.1.3.1 Correlation analysis**

**Objective 3.** To determine the relationship between factors affecting distribution management performance and distribution management performance ethio telecom.

Correlations are the measure of the linear relationship between two variables. A correlation coefficient has a value ranging from -1 to 1. Values that are closer to the absolute value of 1 indicate that there is a strong relationship between the variables being correlated whereas values closer to 0 indicates that there is little or no linear relationship. To go through the above research objective, the researcher used Bivariate Pearson's Correlation ( $r$ ) among independent variables, dependent variables, and between independent and dependent

variables. Correlation coefficients indicated the strength and direction of relationship whereas the p-value indicates the significance of relationship.

Table 4.19 below shows, Bivariate Pearson's Correlation (r) among independent variable, dependent variables and between independent and dependent variables.

Table 4.18; Bivariate Pearson's Correlation

		Correlations										No = 71
Dimen sions	Person 's Correla tion	Techn ology	Infras tructu re	Gov't Regul ation	Finan ce	Intern al Proces s	Emplo yees' Skill	Delive ry Sched ule	Profit	Cost	DMP	
Techno logy	Correla tion	1	.536**	.292*	.606**	.578**	.435**	.533**	.558**	.585**	.672**	
	Sig.		0.000	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
Infrastr ucture	Correla tion		1	.312**	.471**	.506**	.537**	.374**	.573**	.625**	.634**	
	Sig.			0.008	0.000	0.000	0.000	0.001	0.000	0.000	0.000	
Govern ment Regula tion	Correla tion			1	.404**	.365**	.365**	.277*	.518**	.494**	.522**	
	Sig.				0.000	0.002	0.002	0.019	0.000	0.000	0.000	
Financ e	Correla tion				1	.942**	.474**	.526**	.449**	.621**	.636**	
	Sig.					0.000	0.000	0.000	0.000	0.000	0.000	
Intern al Process	Correla tion					1	.466**	.526**	.480**	.636**	.655**	
	Sig.						0.000	0.000	0.000	0.000	0.000	
Emplo yees' Skill	Correla tion						1	.490**	.632**	.554**	.676**	
	Sig.							0.000	0.000	0.000	0.000	
Deliver y Sched ule	Correla tion							1	.439**	.487**	.760**	
	Sig.								0.000	0.000	0.000	
Profit Maxim ization	Correla tion								1	.675**	.863**	
	Sig.									0.000	0.000	
Cost Reduct ion	Correla tion									1	.866**	
	Sig.										0.000	
DMP	Correla tion										1	
	Sig.											

Source: Survey result 2020

The correlation between distribution management affecting factors and distribution management performance is indicated in table 4.18 above. The result of correlation matrix between each distribution management performance affecting factors and distribution management performance dimensions are analyzed as follow: Bivariate Pearson correlation (r) table (4.18) shows that the relationships among factors of distribution management variables are strong, since r value ranges between 0.292 and 0.942 and p values are less than 0.013. Therefore, the result showed that there are strong positive and significant relationships among distribution management factor variables. The relationships among distribution management performance dimensions are also strong and significant since r value ranges between 0.439 and 0.675 and p values are less than 0.001. These results indicate that there is a strong positive and significant relationship among distribution management performance dimensions. As indicated in the above table there is a high significant positive correlation between distribution management factors and distribution management performance with correlation coefficient of 0.632( $r=0.632$ ) or and  $p<0.001$ . Therefore, distribution management performance and the factors affecting distribution management have a substantial correlation. The correlation between technology and distribution management performance have a correlation coefficient value of 0.672( $r=0.672$ ) and  $p<0.001$ , which shows that technology and distribution management performance have a strong, significant and positive relationship. The relationship between infrastructure and distribution management performance have a coefficient value of 0.634( $r=0.634$ ) and  $p<0.001$ , which indicates that infrastructure and distribution management performance have a significant and strong relationship. In addition, the correlation between government regulation and distribution management performance have a correlation coefficient value of 0.522( $r=0.522$ ) and  $p<0.001$ , which also shows they have a strong, significant and positive relationship. The correlation between finance, internal process and employees' skill with correlation coefficient values of 0.636 ( $r=0.636$ ), 0.655 ( $r=0.655$ ) and 0.676 ( $r=0.676$ ) respectively with  $p<0.01$  each have a significant positive relation with the distribution management performance.

It is observed from the above results that, the correlation result between distribution management performance dimensions and distribution management affecting factors

dimensions are strong and have significant relationships. As it's indicated in table 4.19, there is a significant positive correlation between delivery schedule and employees' skill with correlation coefficient of 0.490( $r=0.490$ ) and  $p<0.001$ . Therefore, delivery schedule and employees' skill have a strong correlation. The correlation between profit and employees' skill have a correlation coefficient value of 0.632( $r=0.632$ ) and  $p<0.001$ , which shows that employees' skill and profit have a strong significant and positive relationship. Moreover, the relationship between cost and employees' skill have a coefficient value of 0.554( $r=0.554$ ) and  $p<0.001$ , which indicates that cost reduction and employees' skill integration have a significant and strong positive relationship. In a similar way as seen in table 4.18, all the dimensions of the factors affecting distribution management performance (technology, infrastructure, government regulation, finance, internal process employees' skill) have a significant and strong positive relationships with the distribution management performance dimensions (delivery schedule, profit maximization and cost reduction). The correlations between technology and government regulation showed a relatively low coefficient values of 0.292 ( $r=0.292$ ) and  $p=0.013$ . However, the overall correlation between government regulation and distribution management performance have a strong and significant positive relationship with a coefficient value of 0.522 ( $r=0.522$ ) and  $p<0.001$ . These showed that, the overall government regulation and the distribution management performance dimensions are significantly correlated. Through the correlation analysis, the results of the study showed that there are strong inter-relationships and interactions among the elements of the affecting factors and distribution management performances. The result showed that the relationships within distribution management affecting factor variables are strong, since  $r$  value ranges between 0.292 and 0.942 and  $p$  values are less than 0.013. Therefore, the result showed that there are strong positive and significant relationships among the factors affecting distribution management performance variables. The relationships within distribution management performance dimensions are also strong and significant since  $r$  value ranges between 0.439 and 0.675 and  $p$  values are less than 0.001. The study results indicate that there is a positive strong and significant relationship within the distribution management affecting factors and the performances dimensions. The result of the study conducted by Tefera Workalemahu (2018), on distribution management performance indicated the same result with this correlation results. In conclusion, the study

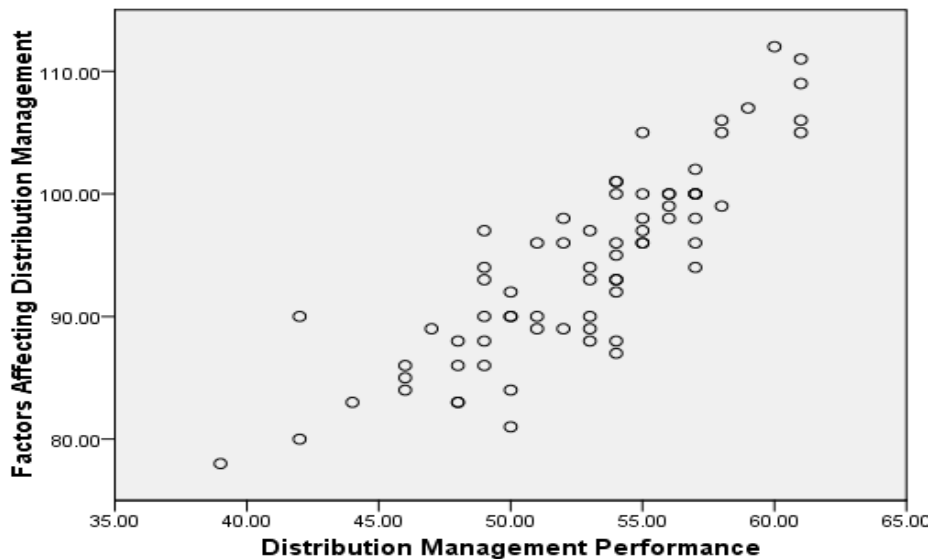
indicated that the relationship between affecting factors of distribution management performance and distribution management performances are strong due to the fact that r value ranges from 0.522 to 0.866 with p value less than 0.001.

#### 4.1.3.2 Regression Analysis

Multiple regression analysis was used to analyze the effect of factors affecting the distribution management performance variables on distribution management performance variables. The regression analysis was conducted to know by how much the independent variable describe the dependent variable. The regression analysis was conducted between the factors affecting distribution management performance (independent variable) and distribution management performance (dependent variable). In order to enable the use of multiple regressions, the models of validity, reliability, and multi-collinearity should be fulfilled. Accordingly, the study addressed content validity through the review of literature and adapting instruments used in previous researches. Reliability tests were made using Cronbach's Alpha and found to be a test significance result value of 0.807. The remaining detail assumptions are discussed as follows:

#### Linearity test

The relationships between independent and dependent variables as shown in figure (Figure 4.1) below is linear.



Source: survey 2020

### Multi collinearity test

VIF (Variance Inflation Factor) and tolerance are used to test multi-collinearity. If VIF is less than 10 and tolerance is more than 0.1, the model does not violate the multi-collinearity assumption.

Table 4.19; Collinearity statistics

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Technology	0.55	1.83
	Infrastructure	0.56	1.78
	Government Regulation	0.79	1.27
	Finance	0.1	9.97
	Internal process	0.11	9.47
	Employees' skill	0.63	1.6

a. Dependent Variable: Distribution Management Performance.

Source: survey 2020

As shown on the above table (table 4.19), all the independent variables have a tolerance value above 0.01 and the values of VIF are less than 10. Therefore, there is multi-collinearity within the independent variable of the study. Table 4.19 shows the regression of the independent variables of factors affecting distribution management performance against the dependent variable (distribution management performance).

$R^2$  shows the fitness of the model for multiple regressions and explains the variance of independent variable on dependent variable.

Table 4.20; Multiple Regressions Analysis (ANOVA).

Model Summary				
Model	R	R Square	Adjusted R Square	Sig.
1	.857a	0.734	0.709	.000b
a. Predictors: (Constant), employee skill, government regulation, technology, infrastructure, internal process, finance.				
b. Dependent Variable: Distribution Management Performance				

Source: Survey 2020

The model for the regression was:  $Y_1 = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$ . From the model summary result it can be seen that the independent variables explain the dependent variable with a percentage of 73.4. As shown on the table (4.7) the model is fit and significant as  $R^2$  is 0.734 (73.4%) and p value is less than 0.01. Since  $R^2$  is 0.734 (73.4%). It indicates that the five variables technology, government regulation, finance, internal process and employees' skill influencing distribution management performance significantly at 95% confidence interval. Hence, as the constant and B values are known the model will be: Distribution Management Performance = 3.482+.304 (Technology) +.222 (Government Regulation) + .309 (Finance) + .262 (Internal Process) +.308 (Employees' Skill) + 0.05e or  $Y = 3.482 + .304X_1 + .222X_2 + .309X_3 + .262X_4 + .308X_5 + 0.05e$ .

Table 4.21 shows the significant effect of each independent variable on dependent variable.

Table 4.21 Regressions Analysis

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.482	4.039		0.862	0.392
	Technology	3.304	0.948	0.304	3.486	0.001
	Infrastructure	1.498	0.911	0.142	1.645	0.105
	Government Regulation	3.194	1.045	0.222	3.057	0.003
	Finance	1.642	2.182	0.309	2.028	0.003
	Internal Process	1.577	0.567	0.262	2.781	0.006
	Employees' Skill	2.895	0.765	0.308	3.784	0.000

a. Dependent Variable: Distribution Management Performance.

Source: Survey 2020

Table 4.21 shows that there is a positive impact of technology on distribution management performance due Beta =.304 and p (.001)>.05. It means, technology has a significant effect on distribution management performance and the hypothesis is accepted. Infrastructure has a significance level of (Beta= .142, and p (0.105)>0.05) which means infrastructure has insignificant effect on distribution management performance and the hypotheses is rejected. Government regulation has a positive impact on distribution management performance due to (Beta= .222, p (.003) <0.05). This means that government regulation significantly affects

the distribution management performance and the hypothesis is accepted. Finance has also a positive significant influence on distribution management performance with a coefficient value of  $Beta=.309$  and value of  $p (.003)$  is below  $0.05$ . Internal process has also a positive significant influence on distribution management performance with a coefficient value of  $.262$  and the value of  $p (0.006)$  which is below  $0.05$ . Employees' skill also has a positive significance impact on distribution management performance with a coefficient value of  $Beta=.308$  and value of  $p (.000)$  which is below  $.05$ .

It is indicated and can be conclude from table 4.21 that, all the factors variables have a significant and positive impact on distribution management performance of ethio telecom commercial goods distribution management performance excluding the infrastructure impact. Employees skill has the highest impact ( $Beta=0.308$  and  $p=0.000$ ) on distribution management performance which is followed by the variables of technology ( $Beta=0.304$  and  $p=0.001$ ), finance and government regulation ( $Beta=.309$  and  $.222$  respectively and,  $p=0.003$  each), internal process variable ( $Beta=.262$  and  $p=.006$ ) and finally infrastructure variable having insignificant impact ( $Beta=.142$  and  $p=0.105$ ).

The finding of the regression analysis of the study showed that the all variables of the factors affecting distribution management performance have significant and positive impacts on ethio telecom commercial goods distribution management performance except the infrastructure variable. It is believed in this study that the highest impact of employees' skill among the affecting factor variables is due to the fact that human resources (employees) are the key factor to succeed the ultimate goal of any organization. For technology to be the second highest impacting distribution management performance, it's believed by the researcher for the fact that it is the key factor for succeeding organizations as it has key role in every company activities nowadays. It is indicated that, the coefficients of predictor variables are statistically significant at below  $5\%$  for the dimensions of the employees' skill, technology, finance, government regulation and the internal process hypothesizes are accepted. Infrastructure is not significant and as a result null hypothesis related to the dimension is failed to reject.

In general, the regression analysis of the study indicated that the factors have a positive strong impact. Accordingly, it can be taken in the study that the factors affecting the commercial goods distribution management performance of ethio telecom are: finance, internal process, employees' skill, technology and government regulations. Infrastructure has insignificance and not considered as the factors affecting distribution management of the company.

Table 4.22. Summary of the research findings

Hypothesis drawn at the beginning	Person correlation coefficient with level of confidence	correlation coefficient Result	Hypothesis after analysis
There is a positive relationship between finance and distribution performance	0.309 person correlation coefficient at 0.003 level of confidence interval.	Significant positive	Accepted
There is a positive relationship between internal process and distribution performance	0.262 person correlation coefficient at 0.006 level of confidence interval.	Significant positive	Accepted
There is a positive relationship between employees' skill and distribution performance	0.308 person correlation coefficient at 0.000 level of confidence interval.	Significant positive	Accepted
There is a positive relationship between technology and distribution performance	0.304 person correlation coefficient at 0.001 level of confidence interval.	Significant positive	Accepted
There is a positive relationship between infrastructure and distribution performance	0.142 person correlation coefficient at 0.105 level of confidence interval.	Insignificant negative	Rejected
There is a positive relationship between government regulation and distribution performance	0.222 person correlation coefficient at 0.003 level of confidence interval.	Significant positive	Accepted

## **Hypothesis Accepted**

H1:- There is a positive relationship between finance and distribution performance.

- Finance and distribution performance are positively related and finance influence distribution performance significantly.

H2:- There is a positive relationship between internal process and distribution performance

- Internal process and distribution performance are positively related and internal process influence distribution performance significantly.

H3:- There is a positive relationship between employees' skill and distribution management performance

- Employees' skill and distribution performance are positively related and employees' skill influence distribution performance significantly

H4:- There is a positive relationship between technology and distribution performance.

- Technology and distribution performance are positively related and technology influence distribution management performance significantly.

H6:- There is a positive relationship between government regulation and distribution performance

- Government regulation and distribution performance are positively related and government regulation influence distribution performance significantly.

## CHAPTER FIVE

### 5. SUMMARY, CONCLUSION AND RECOMMENDATION

*This part of the thesis is about the summary, conclusions and the recommendations of the study. The practices, the factors affecting performances and the performances of ethio telecom commercial goods distribution management is provided in summarized form with the conclusions drawn from the findings. The recommendation of the gaps observed in the findings with the indication of the further study areas are presented in this part.*

#### 5.1. Summaries of major findings

The study demonstrated the distribution management practices, performances and the factors affecting the distribution management performance of ethio telecom commercial goods distribution management.

With the objective of assessing the distribution management practice of ethio telecom commercial goods distribution management, the practice of distribution management was assessed with the dimensions of planning and forecasting, warehouse management, transport management and participants' collaboration. Accordingly, the study identified that the overall commercial goods distribution management practice of the company is high as the overall average mean value (M=3.88) indicated. From the four dimensions under the study, the company has the highest practice result with the participant's collaboration dimension with mean value of 4.17. Next, transport management with the mean value 4.08; then, planning and forecasting with the mean value of 3.87 and finally, warehouse management dimension with the mean value of 3.38 which is relatively the lowest; but it is not to mean that it is low practice.

The second objective of the study was identifying the influences of the factors such as technology, infrastructure, government regulation, finance, internal process and employees' skill affecting on the performance of the ethio telecom commercial goods distribution management. The study discovered the factors affecting distribution management performance of the company and revealed they have a positively significant impact on the company distribution management performances with the overall mean average value of 3.93. Technology has the highest significant impact on the performance from all the factors with the mean value of 4.29. Employees' skill has the second highest impact with the mean value of 4.22 and followed by finance, infrastructure and internal process with the mean values of 4.18, 4.12 and 3.77 respectively. Government regulation has the relative lowest impact on distribution management performance with the mean value 2.98. But, it does not mean by relatively lowest is the low impact due to the fact that the mean value is greater than the required mean value of 2.5.

The last objective of the study was identifying the performances of ethio telecom commercial goods distribution management in terms delivery schedule, profit maximization and cost reduction dimensions. The study indicated, the company has a high performance of commercial goods distribution management with the overall mean value of 3.89. Ethio telecom has the highest distribution management performance in terms of delivery schedule with the mean value of 4.12 and relatively the lowest performance in terms of reducing cost with a mean value of 3.65. The other variable of the performance measuring dimension is a profit maximization which has a relatively moderate mean value of 3.91.

Based on the correlation analysis, the results of the study showed that there are strong inter relationships and interactions among the components of distribution management affecting factors and among the dimensions of distribution management performances and also between the affecting factors and performance dimensions. The relationships among factors of distribution management performance variables are strong, since  $r$  value ranges between 0.292 and 0.942 and  $P$  values are less than 0.013. The relationships among distribution management performance dimensions are also strong and significant since  $r$  value ranges between 0.439 and 0.675 and  $p$  values are less than 0.001. Finally, the study indicated there

is a high significant positive correlation between distribution management performance affecting factors and distribution management performance with correlation coefficient of 0.632( $r=0.632$ ) and  $p<0.001$ .

The results of regression analysis of the study showed that the distribution management performance affecting factors have a significant and positive impact on the commercial goods distribution management performance of the ethio telecom. It is indicated in the study that all the factor variables have a significant and positive impact on distribution management performance of ethio telecom excluding the infrastructure variable. The study shows that the employees' skill has the highest positive significance impact on distribution management performance with a coefficient  $Beta=.308$  and value  $p=.000$ . The other dimensions such as: technology with coefficient value ( $Beta=.304$ ) and  $p=.001$ ), finance  $Beta=.309$  and  $p=.003$ , government regulation,  $Beta=.222$  and  $p=.003$  and internal process,  $Beta=.262$  and  $p=0.006$  indicated a positive significant influence on distribution management performance. The study infrastructure dimension result indicated the coefficient value of ( $Beta=0.142$  and  $p=0.105$ ) which means it has insignificant effect on the commercial goods distribution management performance and the null hypotheses of the dimension is accepted.

## **5.2. Conclusions**

Objective of the study was set to assess the practice and identifying the status of the commercial goods distribution management in ethio telecom. Accordingly, the study demonstrated the overall commercial goods distribution management practice of the company is satisfactory. However, the study indicated some distribution activities showed poor practice and considered as the gap of the findings. The gap was identified as there was a shortage of the storage spaces, inconvenient warehouse environment and use of inappropriate tools in warehouse operation. The second study objective was identifying the influencing factors of commercial goods distribution management performance. Consequently, the conducted study discovered that the overall impacts of the factors of distribution management performance are high and positive on the distribution management

performance of the company. The study identified as a gap that government regulation is least positively impacting factor of commercial goods distribution management performance. The last objective of the study was identifying the company commercial goods distribution management performance. The study revealed that, the overall commercial good distribution management performance is progressive. Nevertheless, study identified as a gap that there was a wastage of resources such as inappropriate use of trucks and tools.

The study demonstrated a well-done practice of ethio telecom commercial goods distribution management and a positive impact of the influencing factor had significantly contributed for the distribution management performance improvement of the company.

### **5.3. Recommendations**

Assessing and identifying the strength and the weakness of the commercial good distribution management practice of ethio telecom is one of the objectives of the study. Accordingly, the assessment study indicated that the practices of the company in this regard are above the average and satisfactory. The other objective of the study was to identify what factors affected the company commercial goods distribution management performance at what level. Based on the assessment study, the impact level measuring dimensions indicated that the factors are positively affecting and enhanced the ethio telecom distribution management performance. The third objective is determining the level of the company distribution performance. The finding indicated that, the company performance is progressive. However, based on the analysis and conclusions outlined, some areas of the study such as warehouse, transport and government regulations dimensions indicated a relatively lower practice and performance. Consequently, the researcher recommended the company to work more on narrowing the gaps on the below aspects.

- It is recommended that ethio telecom should work more on the activities of modernizing and standardizing the warehouse management through: acquiring and applying the proper material handling tools, build sufficient storage areas and creating conducive warehouse environment.

- It is recommended that ethio telecom should work on the activities of reduce costs related to commercials goods distribution management through; limit wastes and shortages and timely disposal of non-using inventories.
- Ethio telecom should work on minimizing the adverse effect of external factors such as government regulations which could have contrary effect on distribution management performance by communicating with concerned government offices.

#### **5.4 Recommendations for academicians and future researches:**

The study is devoted to the government owned telecom service providing company, ethio telecom. It would also be interesting to expand this study to other service providing companies to conduct further study in the area of goods distribution management practice and performance in order to compare the consequences and stand on the differences, and provide the suitable interpretations. In addition, it would be desirable to study additional factors influencing distribution management performance other than considered in this study context.

## REFERENCE

- Aithal, R. K. (2012). Marketing channel length in rural India: Influence of the external environment and rural retailer buyer behavior. *International Journal of Retail & Distribution Management*, 40 (3), 200–217.
- Aliev, R.A., Fazlollahi, B., Guirimov, B.G., Aliev, R.R. (2007). *Fuzzy-genetic approach to aggregate production–distribution planning in supply chain management*. Information Sciences, 177(20), 4241-4255.
- Angelmar, Reinhard and Louis W. Stern, "Development of a Content Analytic System for Analysis of Bar-gaining Communication in Marketing," *Journal of Marketing Research*, 15 (February), 93-102, 1998.
- Barratt M. (2004), "Understanding the meaning of collaboration in the supply chain", *Supply Chain Management: An International Journal*, Vol. 9, No. 1, 2004, pp. 30-42.
- Ben-Shlomo Y, Brookes S, Hickman M. (2013). *Lecture Notes: Epidemiology, Evidence-based Medicine and Public Health*. 6th ed. Wiley-Blackwell, Oxford.
- Bowersox, Donald J., Closs, David J. and Cooper, Bixby M. (2002) *Supply Chain Logistics Management*, McGraw-Hill, New York, p.4, p.161, p.37, p.45, pp 222-225, p.261.
- Ceva. (2010) "Logistics and Competitive Strategy," *European Management Journal*, 11(2), 126-138.
- Creswell, J.W., (2013). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, SAGE Publications.
- Cooper, F.(2006) "Global complexities challenge how IT managers handle distribution," *Journal of Marketing*, Fall. 47, p. 96.
- Chopra S., Meindil P., (2005). *Supply Chain Management*, 4th ed., Dorling Kindersley Pvt. Drummond, G. and Ensor, J. (2001). *Strategic Marketing Planning and Control*, 2<sup>nd</sup> edition. Butterworth-Heinemann.

- Denzin NK, Lincoln YS (2000). *Handbook of Qualitative Research*. London: Sage Publications.
- Gichuru, M. (2012). Critical success factors in business process outsourcing of logistics companies in Kenya, *Unpublished MBA Project*, University of Nairobi.
- Glass, G. V & Hopkins, K.D. (1996). *Statistical Methods in Education and Psychology*. 3rd Edition. Englewood Cliffs, NJ: Prentice-Hall.
- Jebreen, I., (2012). Using Inductive Approach as Research Strategy in Requirements Engineering. *International Journal of Computer and Information Technology*, 01(02), pp.162–173.
- Kotler, Ph. (1997): *Marketing Management: Analysis, Planning, Implementation, and Control*, Ninth Edition, Prentice-hall, Inc. 1997., Prijevod, MATE, Zagreb.
- Leedy P.D. & Ormrod J.E. (2010) *Practical Research: Planning and Design*. (9th ed). Pearson Educational International, Boston
- Sahay, B.S. & Mohan, R. (2003). Supply chain management practices in Indian industry. *International Journal of Physical Distribution & Logistics Management*, 33 (7), 582-606.
- Soiferman, K.L., (2010). *Compare and Contrast Inductive and Deductive Research Approaches*. University of Manitoba.
- Trochim, W.M.K., 2000. *Introduction to Validity*. Social Research Methods. 2nd ed., Cincinnati, Ohio: Atomic Dog Publishing.
- Wilson, J. (2010). *Essentials of Business Research: A Guide to Doing Your Research Project*” SAGE Publications, p.7.
- Sanchis, R., Poler, R. (2016). A cloud platform to support collaboration in supply networks. *International Journal of Production Management and Engineering*, 4(1), 5-3.

- Stadtler, H. (2005). Basics of supply chain management. In: Stadtler, H., Kilger, C. (Eds.), *Supply Chain Management and Advanced Planning Concepts, Models, Software and Case Studies*, Berlin, pp. 7–28.
- Stank, T.P., Davis, B.R. & Fugate, B.S. (2005). A strategic framework for supply chain oriented logistics. *Journal of Business Logistics*, 26 (2), pp. 27-45
- Beatriz Andrés, Raquel Sanchis, Jacques Lamothe, Leila Saari, Frederic Hauser. Integrated production-distribution planning optimization models (*International Journal of Production Management and Engineering*, Valencia Universitat Politècnica de València, 2017, 5 (1), p. 31-38. 10.4995/ijpme.2017.6807. hal-01618007.)
- Park, Y.B. (2015). An integrated approach for production and distribution planning in supply chain management. *International Journal of Production Research*, 43(6), 1205-1224.
- Jang, Y.J., Jang, S.Y., Chang, B.M., Park, J. (2002). A combined model of network design and production/distribution planning for a supply network. *Computers & Industrial Engineering*, 43(1).
- Aian Rushton, Phil Croucher, Peter Baker, (2014), *The handbook of Logistics & Distribution Management*, 4th edition,
- Srivastava, S.K. (2006). Logistics and supply chain practices in India. *VISION –The Journal of Business Perspective*, 10 (3), 69-79.

## ANNEX – QUESTIONNAIRES

ADDIS ABABA UNIVERSITY  
SCHOOL OF COMMERCE

### A THESIS QUESTIONNAIRE FOR THE PARTIAL FULFILMENT DEGREE OF MASTER IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

Questionnaire to be filled by the employees of ethio telecom in Business Logistics, Warehouse Management, Distribution Management and Fleet Management Units (Sections).

#### **Dear Respondents,**

This questionnaire is designed to collect information in order to undertake a research titled “*Assessment of ethio telecom commercial goods distribution management performances, the case of ethio telecom*” for the partial requirement of the Degree of Masters of Arts in Logistics and Supply Chain Management from the Addis Ababa University, School of Commerce. The information you provide will be valuable for the successes of the research project. Please be honest and objective while filling the questionnaire. The information you give is used only for academic purpose and will be kept confidential.

*Please do not hesitate to contact me through the below information for any uncertainty:*

*Name: Abera Girma; E-mail: [aberagirma40@gmail.com](mailto:aberagirma40@gmail.com) or Mobile: +251 911 50 4998.*

Thank you for your cooperation and timely response in advance.

#### **Section I – Demographic Information**

Please check the appropriate box that corresponds to your response from the given preferences by using the ‘X’ mark as seen as:

1. Sex: Male  Female

2. Years of service in ethio telecom?

Below 5 year  6-10 years  11-15 years  Above 16 years

3. Education Status?

10/12 complete  Diploma  Degree  Masters & above

## Section II – Statement of the Survey

### 1. Distribution management planning and forecasting assessment

Please put the 'X' as  on the scale box number that best expresses your opinion in each statement from the following by using the scale boxes below:

*1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly Agree.*

No.	Statements	Scale				
		1	2	3	4	5
<b>1.</b>	<b>Planning and forecasting practice</b>					
1.1	Planning and forecasting of ethio telecom goods distribution is based on the customers' demand and avoid the seasonal inventory fluctuation.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.2	Planning and forecasting of ethio telecom goods distribution order preparation is based on the available stocks and avoid the backorders.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.3	The number of orders to be fulfilled and the number of trucks required for goods distribution activity is planned and forecasted by determining the warehouse loading capacity.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.4	Goods distribution delivery schedule in ethio telecom is planned and forecasted based on the available resources such as tools, forklift and transport trucks.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<b>2.</b>	<b>Warehouse management practice</b>	<b>Scale</b>				
2.1	Ethio telecom warehouse storage areas are designated as a receiving, staging, storing, picking and packing areas and avoided goods distribution delay.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.2	Ethio telecom warehouse space is enough to accomplish the warehousing operations.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.3	Ethio telecom warehouse environment is convenient and suitable for warehousing operations.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.4	Ethio telecom customers' orders are fulfilled timely and efficiently and minimized the seasonal inventory fluctuations.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.5	Material handling tools used in ethio telecom warehouse operations are suitable and appropriate.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

<b>3.</b>	<b>Transport management practice</b>	<b>Scale</b>				
3.1	Trucks assigned in ethio telecom for goods transportations are suitable and convenient.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.2	Ethio telecom assigns trucks for goods transportation on the time of request and fulfills the trucks demand and requirement.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.3	Ethio telecom assigns trucks based on the goods volume and type.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.4	Ethio telecom assigns trucks for distribution by determining the geographical and destination distance aspects.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<b>4.</b>	<b>Participants collaboration practice</b>	<b>Scale</b>				
4.1	There is a high collaboration among ethio telecom distribution participants on commercial goods distribution activities.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
4.2	There is high common consent on the requirement of collaboration among ethio telecom distribution participants on goods commercial goods distribution activities.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
4.3	There is goods distribution process integration among ethio telecom distribution participant units.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
4.4	There is a high information flow among ethio telecom distribution participants on commercial goods distribution activities.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

## 2. Factors Affecting Distribution Performance

<b>No.</b>	<b>Statement</b>	<b>Scale</b>				
1	Influence of Technology on Distribution Performance	1	2	3	4	5
1.1	Utilizing technologies in ethio telecom enhanced its performance of managing the seasonal inventory fluctuations.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.2	Utilizing technologies in ethio telecom enhanced cycle time's performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

1.3	Utilizing technologies in ethio telecom enhanced its performance of seasonal inventory fluctuation management of its distribution to determine its inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.4	Utilizing technologies in ethio telecom enhanced the cycle time's performance of its distribution to sustain the efficient product provisioning and profit maximizing.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<b>2.</b>	<b>Influence of infrastructure on distribution performance</b>	<b>Scale</b>				
2.1	Infrastructure enhanced the seasonal inventory fluctuation performance of ethio telecom to effectively manage the inventory levels of its distribution.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.2	Infrastructure enhanced cycle time's performance of ethio telecom distribution management to shorten the length of delivery time and increase the sales efficiency.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.3	Infrastructure enhanced the seasonal inventory fluctuation performance of ethio telecom distribution management to determine the inventory level in the warehouse; avoid damages, limit wastes, prevent shortages and reduce costs.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.4	Infrastructure enhanced the cycle time's performance of ethio telecom distribution management to sustain the efficient product provisioning and profit maximization.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<b>3</b>	<b>Influence of government regulation on distribution performance</b>	<b>Scale</b>				
3.1	Government regulation enhanced the ethio telecom commercial goods distribution performance to effectively manage the seasonal inventory fluctuation of its distribution at inventory levels.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.2	Government regulation enhanced the ethio telecom cycle time's performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.3	Government regulation enhanced the ethio telecom performance of seasonal inventory fluctuation management of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.4	Government regulation enhanced the ethio telecom cycle time's management performance of its distribution to sustain the efficient product provisioning and profit maximizing.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

<b>4</b>	<b>Influence of finance on distribution performance</b>	<b>Scale</b>				
4.1	Financial capacity enhanced the ethio telecom seasonal inventory fluctuation management performance of its distribution to effectively manage the inventory levels.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
4.2	Financial capacity enhanced the ethio telecom cycle times management performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
4.3	Financial capacity enhanced the ethio telecom the seasonal inventory fluctuation management performance of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
4.4	Financial capacity enhanced the ethio telecom cycle time's performance of its distribution to sustain the efficient product provisioning and profit maximizing.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<b>5.</b>	<b>Influence of internal process on distribution performance</b>	<b>Scale</b>				
5.1	Internal process of ethio telecom enhanced the seasonal inventory fluctuation performance of its distribution to effectively manage the company's inventory levels.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
5.2	Internal process of ethio telecom enhanced cycle time's management performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
5.3	Internal process of ethio telecom enhanced the seasonal inventory fluctuation management performance of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
5.4	Internal process of ethio telecom enhanced the cycle time's management performance of its distribution to sustain the efficient product provisioning and profit maximizing.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<b>6.</b>	<b>Influence of Employee Skill on Distribution Performance</b>	<b>Scale</b>				
6.1	Employees' skill enhanced the ethio telecom seasonal inventory fluctuation performance of its distribution to effectively manage the company's inventory levels.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
6.2	Employees' skill enhanced the ethio telecom cycle time's management performance of its distribution by shortening the length of delivery time and increasing sales efficiency.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
6.3	Employees' skill enhanced the ethio telecom seasonal inventory	1	2	3	4	5

	fluctuation management performance of its distribution to determine the inventory level in the warehouse and avoid damages, limit wastes, prevent shortages and reduce costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4	Employees' skill enhanced the ethio telecom cycle time's management performance of its distribution to sustain the efficient product provisioning and profit maximizing.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

### 3. Distribution Management Performance

No.	Statements	Scale				
<b>1.</b>	<b>Delivery schedule performance</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1.1	Ethio telecom effectively managed its distribution and ensures real-time delivery.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.2	Ethio telecom effectively managed its distribution in regardless of avoiding seasonal inventory fluctuations and ensures the customer responsiveness.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.3	Ethio telecom effectively managed its distribution functions and reduced the demand and supply gaps.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
1.4	Ethio telecom effectively managed its distribution functions and enhanced the customer satisfaction.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
<b>2.</b>	<b>Profit maximization performance</b>	<b>Scale</b>				
2.1	Ethio telecom efficiently managed the seasonal inventory fluctuations of its distribution and maximized its profit.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.2	Ethio telecom efficiently managed the cycle time performance of its distribution and shortened the product delivery time, avoids time wastes and enhanced its profits.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.3	Ethio telecom efficiently managed its distribution management functions in the way that it limit wastes/surplus, avoid damages and prevent shortages and enhanced its profits.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.4	Ethio telecom efficiently managed its distribution functions and enhanced its sales performance and maximized its profits.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
2.5	Ethio telecom efficiently managed its distribution functions and	1	2	3	4	5

	increased its distribution coverage and market share performances.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>3.</b>	<b>Cost Reduction performance</b>	<b>Scale</b>				
3.1	Ethio telecom efficiently managed its distribution functions and eliminated surplus inventory and product obsolescence at the warehouse, limit wastage and avoid damages.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.2	Ethio telecom efficiently managed its distribution functions and insured the cost effective operations on the distribution functions.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.3	Ethio telecom efficiently managed its distribution functions and provides cost effective service to its customers.	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>
3.4	Ethio telecom efficiently managed its distribution functions and shortened the distribution lead time (the time which elapses between the receipt of customer's order and the delivery of goods).	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>

### SECTION III - Open-ended Questions

1. How do you evaluate and summarize the overall goods distribution management practice of ethio telecom in regards of planning and forecasting, warehouse management, transport management and participants' collaboration?

---



---

2. What are the impacts of the factors affecting distribution management performance such as technology, infrastructure, government regulation, finance, internal process and employees' skill?

---



---

3. How do you evaluate and summarize the overall goods distribution management distribution performance of ethio telecom? Please mention some points on the below space provided.

---



---

**Thank you for your Response!!!**

**Stay Safe and Blessed!**