THE EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICE ON CUSTOMER SATISFACTION IN CASE OF ETHIO TELECOM DIRE DAWA

Girma Mengesha Birhane-

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THE EFFECT OF SUPPLY CHAIN MANAGEMENT PRACTICE ON CUSTOMER SATISFACTION IN CASE OF ETHIO TELECOM DIRE DAWA

Girma Mengesha Birhane

A Thesis Submitted to the Department of Logistics and Supply Chain Management, College of Business and Economics, School of Graduate Studies, Dire Dawa University, Dire Dawa, Ethiopia

In Partial Fulfillment of the Requirements for the Degree of Master of Art in Logistics and Supply Chain Management

(Specialization: Logistics and Supply Chain Management, 2022)

Declaration

I, Girma Mengesha Birhane, declare that this research entitled "The Effect of Supply Chain Management Practice on customer satisfaction ethio telecom dire dawa is my original work and has not been used by others for any other requirements in any other university and all sources of material used for this thesis have been duly acknowledged.

This research is submitted in partial fulfillment of the requirements of the degree Masters of Arts in logistics and Supply Chain Management.

Declared by:

Name of Student: Girma Mengesha Birhane

Signature: _____

Date: _____

Date of Submission: DDU

Dire Dawa, Ethiopia

Statement of Certification

This is to certify that Girma Mengesha Birhane has carried out the study on the topic entitled "The Effect of Supply Chain Management Practice on customer satisfaction: in case of ethio telecom dire dawa" in a partial fulfillment of the requirements for the Masters of Arts degree in Logistics and Supply Chain Management at Dire Dawa University. It is his original and an authentic work carried by him under my guidance**.**

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Advisor	**Signature**	**Date**

Dire Dawa University

School of Graduate Studies

Final Thesis Approval Sheet

Board of Examiners and Advisor

Name of the Candidate: - Girma Mengesha Birhane ID. No DDU1300106

Title of the Thesis The effect of supply chain management practice on customer satisfaction in case of ethio telecom dire dawa

We, the undersigned, members of the Board of Examiners, have read the thesis and evaluated the final open defense of the candidate. The Thesis is written for partial fulfillment of the requirements for the degree of Master of Arts in logistics and Supply Chain Management.

This is, therefore, to certify that the thesis has been (put √ mark):

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ACRONYMS AND ABBREVIATION

CIWC- Company Integration with Customer

CIWS- company Integration with suppliers,

CRM-Customer Relationship Management

CS-Customer satisfaction

GSCMP-Green Supply Chain Management Practices

ICT- Information Technology and Sharing

INTI- internal integration

IS-Information sharing

IT-Information technology

LD-Logistics design

SCMP-Supply chain management practices

SCM-Supply chain management

SCOR -Supply Chain Operations Reference

SCPE-supply chain performance effectiveness

SDG -Sustainable Development Goal

Abstract

The purpose of this study is to examine the supply chain management practices in ethio telecom. Specifically, the study investigated the effect of, Integration suppliers Practices, Integration Customers Practices, Information Sharing, and Logistics design and internal integration on customer satisfaction. Effective supply chain management practices have become a potentially valuable way of securing competitive advantage through customer satisfaction since competition is no longer between organizations, but among supply chains.

Descriptive and explanatory research design was employed in the study. Stratified random sampling was used to select the appropriate sample of the study and questionnaires were distributed proportionally to the sample drawn. To achieve the objective of the study, primary and secondary data sources were used. Out of 100 respondents' data was collected valid from 80 respondents using closed ended questionnaires. Descriptive analysis namely frequency, percentage, mean and standard deviation; and inferential analysis namely Pearson correlation and multiple linear regression was employed and analyzed using SPSS version 22. The major findings indicate that, most supply chain management practices have significance effect on customer satisfaction with in the case company. In addition to this all of supply chain management practices were moderately practiced with in ethio telecom Dire Dawa. Therefore, in order to achieve advancement in productivity, profitability and customer satisfaction in the long-run, it is better for the company to give due emphasis to the constructs of supply chain management practices and customer satisfaction. The major findings indicate that, most supply chain management practices have significance effect on customer satisfaction with in the case company. In addition to this all of the effects of supply chain management practice on customer satisfaction in case of ethio telecom dire dawa.

Keywords: *supply chain management, Integration suppliers, Integration Customer, Information Sharing, and Logistics design and internal integration and customer satisfaction.*

CHAPTER ONE

INTRODUCTION

This section encompasses background of the study, statement of the problem, objectives of the study, research question, and significance of the study, Hypothesis and organization of the study

1.1 Back Ground of the study

Over the years, the character of competition has changed to the degree that companies no longer compete with the other companies on the basis of quality as traditionally experienced in the1980s (Fawcett et al. 2007). However, the new basis of competition lies outside the walls of organizations, and is determined by how effectively companies tie their operations with their supply chain partners such as suppliers, distributors, wholesalers, retailers and end customers (Mamun, 2011). A Supply Chain can be described as a network connecting different entities, from the customer to the supplier, through manufacturing and services, so that the flow of materials, money and information can be effectively managed to meet the business requirements (Zigiaris, 2000).

Supply chain management supports the business organization to compete in the changing international market. The purpose of Supply chain management is to include activities across and within organizations for providing the customer value. Supply chain management is required for different reasons: improving operations, better outsourcing, increasing profits, enhancing customer satisfaction, generating quality outcomes, tackling competitive pressures, increasing globalization, increasing importance of electronic-commerce and growing difficulty of supply chains (Mamun,2011). According to Council of Supply Chain Management Professionals (2016), Supply chain management contains the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Prominently, it also includes coordination and collaboration with channel partners, which can be suppliers, intermediaries, third-party service providers, and customers. In essence, supply chain management integrates supply and demand management within and across companies.

Supply chain management is the active management of supply chain activities to maximize customer value and achieves a sustainable competitive advantage. It represents a conscious effort by supply chain firms to develop and run supply chain in the most effective and efficient ways possible (Robert Handfield, 2011).

Supply chain management is the oversight of materials, information and finances as they move in a process from supplier to manufacturer to wholesaler to retailer to consumer. Supply chain management involves coordinating and integrating these flows both within and among companies. It is said that the ultimate goal of any effective supply chain management system is to reduce inventory or with the assumption that product is available when required. (Margaret Rouse Whatls.com, 2008)

Today's management has highlighted customer satisfaction as a key factor in corporate success and has stated that enhancing management relationships is critical to the company's success. The contemporary business environment is very different from past ones, and competitiveness is extremely important (Gilaninia et al., 2011). New types of structural reforms, as well as competitive and exchange processes, result in a new communication paradigm for long-term buyer-supplier partnerships (Seyedi, Moosavi, Heidari, 2009). According to Bogale (2015), supply chain expansion attempts to increase profitability, customer response, and the ability to give value to customers, as well as improve connectivity and dependency among enterprises. As a result, taking a more integrated approach to supply chain relationship management is becoming more popular as a means of fulfilling changing client demands (Eyong, 2009). In Ethiopia, the business environment is currently becoming more customer-driven, and competitive. As a result, it is unquestionable that businesses should develop an integrated and efficient system that allows resources to move seamlessly and instantly across the supply chain (Assefa. B, 2011). Yohannes, A. (2015) also claims that Ethiopian manufacturing industries' previous supply chain management practices are traditional in that partners involved across the supply chain act independently in designing, developing, and executing strategies, with little effort made to align strategies with partners doing business with them, such as suppliers, whole sellers, distributors, and customers.

Addis T. (2015) adds that most product and service delivery operations in Ethiopia have a significant performance gap, which could be attributable to a lack of proper supply chain management methods. According to Lazarovic (2007), supply chain management is increasingly seen as a vital business activity for organizations that manufacture or distribute goods. This is because customers' demands for most items are becoming increasingly demanding in terms of response time, choice, and the pursuit of lower pricing. This study looks at small and micro enterprises and tries to figure out how to improve customer satisfaction and supply chain management by using supply chain management practices to achieve competitive performance goals and strategies.

Companies and organizations should place a major emphasis on customer positioning and building strong relationships with buyers of goods in order to flourish and survive in today's economic environment (Yohannes, 2015). The problem is that most businesses are organized functionally rather than as a chain, resulting in a lack of common cooperation both within and across enterprises (Hoole, 2005). According to Mirquez (2010), functionality will result in a reduction in inventory and cost, as well as inhibit essential information sharing between chains. As a result, there will be a lack of trust and a bullwhip effect. According to the authors, supply chain management may be utilized as a strategic weapon to establish a long-term competitive advantage by reducing expenditure without sacrificing customer satisfaction (Lee and Billington, 1992). Due to a lack of integration, collaboration, and the willingness and practice of managing supply chains, Ethiopian businesses are not reaping the full benefits of supply chain management.

Customer satisfaction has been a subject of great interest to organizations and researchers alike. In recent years, organizations are obliged to render more services in addition to their offers. The quality of service has become an aspect of customer satisfaction. It has been proven by some researchers that service quality is related to customer satisfaction (Jenet, 2011). Customer satisfaction attempts to match the level of expectations and perception of customers. However, it is essential to note that the degree of expectation of any customers will depend on their own behaviors' (Walidin, 2007; Waskita, 2007). Meeting a customer's pre-purchase expectations is an important aspect of customer satisfaction that has been described in the marketing and services operations management literature. Supply chain relationships play an important role in achieving the firm's goals (Hendriks, 1997).

Supply Chain Management (SCM) is the process of planning, implementing and controlling the operations of the supply chain with the purpose to satisfy customer requirements as efficiently as possible (Chopraet al., 2002). SCM is the coordination of materials, information and financial flows between and among all participating enterprises. Many organizations have started recognizing SCM as an important key for building sustainable competitive edge for their products and services in global market with crowded customers (Jones, 1998) a SCM practice includes the set of activities undertaken by an organization to promote effective management of its supply chain (Kohet al., 2007). Li et al., (2006), identify five aspects of SCM practice through factor analysis: strategic supplier partnership, postponement, customer relationship, level of Information sharing and quality of information sharing. According to Piotrowicz and Cuthbert son (2015), over the last few decades, the concept of Supply Chain

Management (SCM) has emerged globally as one of the most promising areas of business management, with the main goal of achieving simultaneous cost reduction throughout the supply chain and a perceived increase in the value of the product/service.

The basic goal of supply chain management in Ethiopia is to provide the correct product or service, in the right quantity, at the right time, and for the least amount of money possible, in order to meet customer requirements and internal targets as efficiently as possible.

Supply chain practices are projects that have an impact on the entire supply chain. Despite the fact that these practices have a significant impact on any organization's operational performance, they are influenced by contextual factors such as industry type, firm size, and supply chain length. As a result, the overall goal of this research was to evaluate and investigate the effects of supply chain management practices on ethio telecom's operational performance (Bezabh, 2017).

Supply chain management supports the business organization to compete in the changing international market. The purpose of Supply chain management is to include activities across and within organizations for providing the customer value. Supply chain management is required for different reasons: improving operations, better outsourcing, increasing profits, enhancing customer satisfaction, generating quality outcomes, tackling competitive pressures, increasing globalization, increasing importance of electronic-commerce and growing difficulty of supply chains (Mamun,2011).

Currently the Ethiopian business environment is becoming customer driven, competitive and technology based. Hence, it is unquestionable that companies should build an integrated and efficient system through which resources would flow in a seamless and instantaneous manner across the supply chain (Assefa. B, 2011).

Yohannes (2015) also suggest that the previous practices of Ethiopian manufacturing industries with regard to supply chain management is traditional in that, partners involved across the supply chain act independently in designing, developing and executing strategies with minimum effort made to align strategies with the partners doing business with them particularly suppliers, whole sellers, distributors, and customers.

Fasika, Thiobe& Marcus (2014) get result that, the degree of integration is low when it comes to Ethiopian firms but there were some promising initiatives undergoing. And, also suggests that the current

supply chain integration requires information and communication technologies that enhance data management in great way both from automated sources such software applications.

(Addis T, 2015) adds that, in Ethiopia in most of product and service giving activities have a major gaps regards to their performances and that could be due to lack of adequate SCM practices.

This research will be focusing on Ethio telecom and strives to analyze barriers to satisfy customers as well as applying supply chain management practices, and addresses these by instilling supply chain management practices as a means of executing objectives and strategies for competitive performance. Therefore, the investigator is inspired to conduct a study on the supply chain management practices and their connection with customer satisfaction of Ethio telecom and forward possible suggestions that would enable the company to be competitive.

1.2 Statement of the Problem

Due to the number of competitor companies expanding both locally and internationally, companies not only have to re-establish themselves to produce higher-quality products and services, decrease waste and are able to respond to the market but also to handle their supply chain management efficiently. Organizations are facing different kinds of challenges in their attempt of competing in today ‘s dynamic international markets (Makena, 2014).

To stay competitive, organizations must identify the importance of supply chain management practices that improve not only their own organizational performance, but also coordinate with their supply chain partners to improve their joint performance. Yet, despite the important advances in research and practices, many organizations continue to struggle to understand the complex issues associated with the coordinated planning and supply activities between the members of their supply networks (Makena, 2014).

Today’s to develop and survive in economic competition, Companies and organizations should be given special importance to customer orientation and build strong relationship with the buyer of goods (Yohannes, 2015).The problem in most firms is organized functionally, not integrated as a chain so that, there is lack of common cooperation within and across organizations(Hoole,2005).Mirquez(2010) adds that functionality will lead to a loss in the reduction of the level of inventory and cost and as well it hinders critical information sharing among the chains. This will finally result in lack of trust and bullwhip effect

It is pointed out that, SCM can be used as a strategic weapon to develop a sustainable competitive advantage by reducing investment without sacrificing customer satisfaction, Lee &Billington (1992). Ethiopian firms are not sufficiently getting the benefits of SCM due to lack of the practice of integration, collaboration and not having willingness and the practice of managing supply chains. The traditional way of managing from suppliers to customers is just a buy and sale (Transactional) relationship, Belay (2011).

The effectiveness of supply chain management practices helps to provide many direct and indirect benefits for suppliers and manufacturing companies, where it represents the ability to invent and produce solutions that add more value to (customers) than existing offers, and it also adds great importance for both manufacturing companies, supplier networks, and other parties. The study aims to identify the effects of different dimensions of supply chain management practices (SCMP) on supply chain performance effectiveness (SCPE) of Sudanese manufacturing companies using resources-based view theory (2012) (Balal Ibrahim and Adam Hamid).

According to S.R.a and G.b (2012), supply chain management (SCM) is an area of growing importance among businesses and academic interest. It is based on the concept of firms as part of multiple organizations oriented to the provision of goods and services to the final customer. From this perspective, several studies have confirmed that supply chain integration and collaboration can provide significant benefits to the companies involved. Among these advantages are added value, the creation of efficiencies, and client satisfaction, as represented by inventory reductions, improvements in service delivery and quality, and shorter product development cycles.

However, companies in Ethiopia are facing significant customer challenges, forcing them to adopt Supply chain management practices. Customers are becoming aware of the social and environmental problems caused by manufacturing companies using traditional supply chain management, which does not focus on social and environmental aspects, so manufacturing companies are finding it difficult to respond to customer needs effectively and efficiently with their traditional supply chain network.

Different researcher conducts academic studies on supply chain management practice for instance, Vincent K. Kiprop **(**2015), conducted study on impact of supply chain management practices on the performance of banks in Kenya. This research conceptualizes and develops four dimensions of SCM practice (outsourcing of goods & services, information & communication technology, strategic supplier partnership, and globalization) and tests the relationships between SCM practices, and organizational performance. The study found that outsourcing was important to the banks only when the proper methods

are in use. It also found that information communication technology had a key role in determining the performance of banks as it dictated the mode of transaction and data they displayed to clients. Strategic partnership was also important based on what it planned to achieve in enhancing the performance of banks. Lastly, globalization is equally important as it increases competition and exposes local banks to global scène to experience how performance of banks can be improved.

Even if the study done by Vincent K. Kiprop (2015) was tried to deal with supply chain management practice issues but, it fails to incorporate the supply chain management practice dimensions like level of information sharing, quality of information sharing, customer relation and internal lean practice.

Hague & Islam (2013) studies on Kenyan supermarkets have addressed effectiveness of electronic inventory system son customer service delivery and strategic responses to changes in external environments. Hague & Islam (2013) did a research on SCM practices on customer satisfaction on pharmaceutical firms in Bangladesh. The great benefit of supply chain management is that when all of the channel members including suppliers, manufacturers, distributors and customers, behave as if they are part of the same company, they can enhance performance significantly across the board. Better performance of the supply chain increases customer satisfaction levels.

One major problem is the relative lack of empirical evidence supporting the benefits attributed to supply chain management. Likewise, most of the research related to strategic relationships is dynamic in nature.

Hague & Islam (2013) it describes primarily how two companies can improve their relationships, but it seldom includes an actual supply chain.

Makena (2014) conducted a study on Impact of Supply Chain Management Practices on Organizational Performance: A Case Study of Haco Industries Limited (Kenya). To study the relationship between supply chain management practices and organizational performance, four key dimensions of SCM practices (strategic supplier partnership, customer relationship, information sharing and training practices) were used as independent variables, while market/business and operational performance variables were used to measure the organizational performance. Main findings of the study revealed that there is a high level of practical implementation of SCM practices in Haco Industries limited and that they all had a positive effect on organization ‘s performance. That is, they improved the organization ‘s performance in terms of lowering its operational costs, reduction of lead time, high customer service levels, product quality, fast response to changes in the market and expanding its market share and sales.

A combination of all the four practices studied had a stronger effect on organization performance other than the effect of one which further shows the need to embrace a good combination of SCM practices.

Even though the study conducted by Makena was tried to address the supply chain management practice but, it fails to incorporate the level of information sharing, quality of information sharing and internal lean practice.

Masresha Assefa, (2018) conducted study on the Effect of Supply Chain Management Practice Son Company Performance. The case of Techno style private limited company. The study showed that, Strategic supplier relationship, the level of information sharing, quality of information sharing and lean practices have medium whereas customer relationship has low relation to company performance with the statistical significant level. Even if the study done by Masresha tried to address the supply chain management practice and areas but focused more of on the financial indicators of organizational performance.

Furthermore, different studies from different countries have used similar dimensions when measuring supply chain management practices implementation example: Basnet *et al*., 2000

(New Zealand); Li, *et al.*, 2006 (USA); Kushwaha and Barman, 2008 (India); Choon Ho 2011(Malaysia); Adebayo, 2012 (Nigeria); Ardianto *et al*., 2013 (Indonesia); Qayyum *et al*., 2013(Pakistan); Woldemichael, 2012 (Ethiopia); Mwale, 2014 (Kenya); Mensah *et al.*, 2014 (Ghana);Karimi and Rafiee, 2014 (Iran) just to mention the few, all these studies have indicated to use similar dimensions of supply chain management practices to their particular countries such as strategic supplier relationship, information sharing, outsourcing, customer relationship, lean practices. They indicated positive results to support such practices to be suitable in their respective countries regardless of variation of culture, style of management, geographical background, and ideology, type of industry from one country to another or from one continent to another.

Therefore, this study supported such fact of more similarities found between two countries in terms of supply chain management practices implementation is more than the differences. However, as far as my concern most of the researches related to the supply chain managements were carried out in developed countries which have different economic, political, technology, social, legal and cultural status. As a result, it may be difficult to directly apply and generalize that the same practices and collaboration as well

as problems of supply chain management exists in Ethiopia. This is for the reason that Ethiopia has different Economic, technological, political, social, legal and cultural status than other countries.

Hana (2016) also studied the effect of supply chain management practice on customer satisfaction in Ethiopian Sugar Corporation and concludes that the case company's orientation towards supply chain management is traditional that lacks substantial indicators of an integrated, efficient and effective supply chain management. From supply chain management practices the case company has a great problem on information sharing and IT practices in supply chain. These two practices play a decisive role for creating effective and efficient supply chain management. Poor IT facilities lead to poor information sharing and poor information sharing practices makes a supply chain management ineffective. On the other hand, supply chain management need effective internal operation for creating integration with external partners. For making internal operation effective, the human resource is a critical factor and in order to have skilled, committed, and capable employees and managers, to utilize resources effectively and efficiently training plays a significant role; But fail addressing relationship between supply chain management practices and customer satisfactions (Integration suppliers, Integration Customer, Information Sharing, and Logistics design and internal integration) in the case company.

Therefore, since the effort to achieve generalization of the causal relationship between supply chain management practices and customer satisfaction calls for empirical confirmation in diverse environments, especially emerging economies, this paper is to contribute to the debate by testing the relationship between supply chain management practices and customer satisfactions (Integration suppliers, Integration Customer, Information Sharing, and Logistics design and internal integration) in the case company.

Thus, the researcher would be initiated to conduct this study to fill the knowledge gap of previous study and systematically identify the importance of those factors for better supply chain management practices in an Ethio telecom dire dawa.

1.3. Research Questions

Based on the statement of the problem due considerations are also given for the following questions:

1. What is the effect of supplier integration practices on customer satisfaction in the company?
2. How customer integration practices effect on customer satisfaction in the company?
3. What is the effect of information sharing practice on customer satisfaction in the company?
4. How logistics practices affect customer satisfaction in the company?
5. What is the effect of Internal integration practices effect on customer satisfaction in the company?

1.4 objectives of the study

1.4.1 General objectives of the study

The general objective of the study was to investigate the effect of supply chain management practices on customer satisfaction of Ethio Telecom dire dawa.

1.4.2 Specific Objectives of the Study

The specific objectives of the study were; -

- ☞ To examine the effect of supplier integration practices on customer satisfaction in the company.
- ☞ To identify how customer integration practices on customer satisfaction in the company.
- ☞ To examine how effect of information sharing practices on customer satisfaction in Ethio telecom.
- ☞ To examine the effect of logistics design practices on customer satisfaction in Ethio telecom.
- ☞ To determine the effect of Internal integration practices on customer satisfaction in Ethio telecom.

1.5. Hypotheses

Ha1: supplier integration practices have positive and significant effect on customer satisfaction.

Ha2: customer integration practices have positive and significant effect on customer satisfaction.

Ha3: information sharing practices have positive and significant effect on customer satisfaction

Ha4: Logistics design practices have positive and significant effect on customer satisfaction.

Ha5: Internal integration practices have positive and significant effect on customer satisfaction

1.6 Significance of the study

Findings from this study would help to the Ethio telecom, to insight the effect of those supply chain management practices on customer satisfaction and also to look their supply chain management practice gaps and their strength. Academicians/Researchers: The study ‘s findings will be providing a room to other researchers to use it as reference point to their future studies related to this subject matter. It will enable them to see the gap of what is unknown, what needs further research, elaboration and improvement. It added value to the body of knowledge in bridging the gap between theories and practical implementation of supply chain management practices; hence it will provide little understating of the nature and influence of those supply chain management practice on customer satisfaction in Ethio telecom. The study will be useful to academics, researchers, policymakers, business practitioners, and management units in the case company. Specifically, the research will aid in the identification of bottlenecks, waste, problems, and improvement opportunities in supply chain practices, as well as its contribution to the operational performance of service companies in Ethiopia.

Last but not least, successful completion of the study will enable the researcher to fulfill and specialize the requirements for the award of Master degree in logistics and supply chain management offered by the Dire Dawa University.

1.7 Scope of the Study

The study geographically delimited to is Ethio Telecom Company in Dire Dawa, Ethiopia. Supply chain management encompasses vast areas of managerial practices. However, it is difficult and unmanageable to conduct the study in all areas that summarizes supply chain management in terms of time, finance, and research manageability. The subject scope of this study is also delimited to the company’s point of reference towards (Integration suppliers, Integration Customer, Information Sharing, and Logistics design and internal integration). Because Even if there is Ethio telecom which is available in Ethiopia the researcher geographically delimited Ethio telecom in Dire Dawa, Ethiopia. Supply chain management encompasses vast areas of managerial practices. However, it is difficult and unmanageable to conduct the study in all areas that summarizes supply chain management in terms of time, finance, and research

manageability. A number of literatures show many different perspectives of supply chain practices (Tan et al., 2002; Chen &Paulraj 2004; and Lie, 2002 and 2005). The same with Chen and Paulraj, Min and Mentzer (2004) also examined in their study long-term relationship, information sharing, cooperation process integration and supply chain leadership underlying the supply chain management practices.

Lie et al (2005, 2006); identified supply chain management practices in form of strategic supplier partnership, customer relationship, and information sharing.). These different writer's perspective suggested a multi-dimensionality of SCM that covers set of activities and processes from upstream, firm's internal operations to downstream of the supply chain. Thus, the literature portrays SCM practices from a variety of different perspectives with a common goal of its objectives. The researchers take Integration suppliers, Integration Customer, Information Sharing, and Logistics design and internal integration that have been taken as a strong practice and give suggestion on their relations with the end customers in their studies. Therefore, the scope of this study will delimit to relate supply chain management practices with downstream of supply chain of ethio telecom. In addition, this study is also limited to the company's point of reference towards Integration suppliers, Integration Customer, Information Sharing, and Logistics design and internal integration.

1.8 definitions of Key Terms

- Supply Chain Management Practices: the set of activities undertaken by an organization to promote effective management of its supply chain (Li et al. 2006).
- Strategic supplier partnership: The long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits (Li et al. 2006).
- Supplier relationship management: Participation between an organization and key suppliers is, as previously stated, a fundamental and basic SCM practice. Buyers collaborate with suppliers to ensure that information materials meet guidelines and quality requirements in order to deliver high-quality products. 2017 (Abdul Shukor).

- Customer relationship management: It refers to the entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction. (Bezabh, 2017

- Operational Performance: relates with the manufacturing plant's capabilities to more efficiently produce and deliver products to the customer. Operational performance refers to the strategic dimensions by which company chooses to compete Manufacturing capabilities and resources should focus on developing competitive priorities as the achievement of competitive advantage depends on the effective translation of competitive priorities into strategic capabilities). Operational performance has multiple dimensional, namely, flexibility, delivery, quality and cost. (Mallikarathna & Silva, 2019).

1.9. Organization of the paper

The study was organized into five chapters: The first chapter was containing the introduction part dealing with back ground of the study, the problem statement, Objectives of the study, basic research questions and significance of the study, scope and hypothesis of the study. The second chapter was discussing the literature review about supply chain management practices and customer satisfaction. In chapter three, the research methodologies were presented. In chapter four, the collected raw data was analyzed, presented and interpreted. Finally, chapter five was contains, summary of findings, conclusions, recommendations, limitations and forwarded suggestions.

CHAPTER TWO

2. LITERATURE REVIEW

2. THEORETICAL REVIEW

2.1. Overview of Supply Chain Management

According to Mentzeret al.2016, who broadly examined different definitions of the terms 'Supply Chain and 'Supply Chain Management', offered, in consequence, the following synthesized definitions: A supply chain is a "set of three or more entities directly engaged in the upstream and downstream flow of products, services, finances, and information begin from a source to the customer.

According to Christopher 1998, defined supply chain as "a network of organizations that are engaged, through upstream and downstream linkages in the varies processes and activities that create value in the form of products and services in the hand of the ultimate consumer.

From the Council of Supply Chain Management Professionals (2010) defined supply chain as" the material and informational interchanges in the logistical process, stretching from acquisition of raw materials to delivery of finished products to the end user. All vendors, service providers, and customers are links in the supply chain" (CSCMP, 2014),

Senge (1990) argues, would, however, go missing, if and when the whole is broken into parts. This theory is thus tailored toward systematically explicating the dynamics that characterize the SCM practices. For instance, the strategic supplier partnership, postponement, customer relationship and information sharing that are in place within and across supply chain should be all taken into account for a sound understanding of these practices. The primacy of taking such an integrated approach is paramount as the lack of which would not ensure whether all the vital components are adequately looked into (Tsoukas, 1996; Schlange, 1995). The systems thinking theory thus sheds insight into the efficacy of various SCM enablers on organizational outcomes, such as customer satisfaction**.**

2.1.1 Concepts of Supply Chain Management

A supply chain is made up of all parties directly or indirectly involved in fulfilling a customer's request. Not only do manufacturers and suppliers play a role in the supply chain, but so do transporters, warehouses, retailers, and even customers. The supply chain encompasses all tasks involved in receiving and fulfilling a customer request inside each firm, such as a manufacturer. New product creation, marketing, operations, distribution, financing, and customer support are just a few of these functions (Ullrich, C.A, 2014). In recent years, corporations have become more interested in supply chain management as they have realized that the actions taken by one member of the network have an impact on the profitability of other members of the chain (Silver, 1998). This is because the new source of business competitiveness is based on how well corporations link their operations with their supply chain partners, such as suppliers, manufacturers, distributors, wholesalers, retailers, and end customers (Silver, 1998). Supply chain management is thus used to coordinate activities and connect them with downstream, upstream, and internal supply chain processes (Ross, 1998).

2.2. Supply Chain Management practices

Supply chain management practices have been defined as a set of activities undertaken in an organization to promote effective management of its supply chain (Li et al., 2006). SCM practices involve suppliers in strategic and operational decision-making, encouraging information sharing and searching for new ways to integrate upstream activities. It also involves developing customer contacts through the use of customer feedback to integrate the downstream activities and delivering orders directly to customers at point of use. To effectively achieve these goals, it is necessary to locate closer to the market, help suppliers and vendors develop just-in-time capability, create a compatible information platform and create supply chain management teams for quality and operational efficiency (Chow et al., 2008).

According to Muhammad (2004), this variable refers to several activities or practices related to operational function of firms. It is used to measure the supply chain management adoption and its level practices. Related practices are divided into six dimensions namely strategic supplier partnership, customer relations practices, information sharing, information quality, lean system and postponement.

According to Adebayo, 2012, the five constructs cover upstream (strategic supplier partnership) and downstream (customer relationship) sides of a supply chain, information flow across a supply chain (level of information sharing and quality of information sharing), and internal supply chain process (Internal Lean Practices).

2.2.1. Supplier and Customer Relationship (SCR)

Supplier and customer relationship is defined as a set of firms' activities in managing its relationships with customers and suppliers to improve customer satisfaction and synchronize supply chain activities with suppliers, leverage suppliers' capacity to deliver superior products to customers. This is due to the ultimate objective of SCM is to deliver products to the satisfaction of end customers (Tan, 2001). Close customer relationship allows a company to be more responsive in fulfilling customers' demand and differentiate its product from competitors, sustain customer loyalty, &dramatically extend the value it provides to its customer through improving customer satisfaction by proactively seeking customers' needs and requirements. The ability to build a close relationship with customers will bring companies in to a long-lasting competitive edge (Bowersox et. al, 1999).

Supply chain management suggests that firms need to integrate with their suppliers and customers to achieve both financial and non- financial growth objectives. In today's competition, firms with a superior ability to provide services that customers perceive as valuable incur an important competitive advantage (Tan, 2001).

2.2.2. Strategic supplier partnership

It is the long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits (Li et al, 2006). Strategic partnerships with suppliers enable organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. Suppliers participating early in the product-design process can offer more cost effective design choices, help select the best components and technologies, and help in design assessment (Tan et al., 2002). Supplier partnerships and strategic alliances refer to the co-operative and more exclusive relationships between organizations and their up-stream suppliers and downstream customers (A. Gunasekaran et al, 2004).

Today many firms have taken bold steps to breakdown both inter and intra firm barriers to form alliances, with the objective of reducing uncertainty and enhancing control of supply and distribution channels. Such alliances are usually created to increase the financial and operational performance of each channel member through reductions in total cost and inventories and increased sharing of information (Maloni and Benton, 1997).

Rather than concerning themselves only with price, manufacturers are looking to suppliers to work co-operatively in providing improved service, technological innovation and product design. This development has produced a significant impact by expanding the scope of SCM through greater integration of suppliers with organizations (A. Gunasekaran et al, 2004) The relationship **is** designed to control the strategic, tactical and operational capabilities of individual participating organizations to help them achieve major ongoing mutual benefits (Jie et al., 2007). A strategic partnership emphasizes direct, long-term association and encourages mutual planning and problem solving efforts (Gunasekaran, 2001). Strategically aligned organizations can work closely together and eliminate wasteful time and effort.

. Supply Chain Management Practices Supply chain management practices are defined by Tan et al. (2002) as a set of activities carried out in an organization to enhance effective supply chain management. Supply Chain Management procedures involve supply and material management challenges, operations, information technology and sharing (ICT), and customer service. According to Moberg. (2002), other components such as technology, cost, inventory management, competitiveness, and external regulations must be managed successfully in order to accomplish the business goals of each supply chain member, resulting in value creation for the end customer. There are five perspectives or dimensions to supply chain management. Integration with suppliers and customers, internal integration, information sharing, and logistics design are all examples of these (Perry &Sohl, 2000; Lazarevic et al., 2007).

2.2.3. Internal Operation

In addition to the upstream and downstream integration, SCM also emphasize on the importance of both effectiveness and efficiency of firm's internal operations on its performance. This is due to a significant element of SCM practice is an internal operations and they are the basis for developing a competitive advantage before embarking into external integrations. Poor internal operations can lead to failure in coordinating with external partners (Handfield & Nichols, 1999).

To judge the SCM practice as an effective and value adding the internal operation should be flexible in responding to changing market needs, which is expressed on the basis of agility principles. This means that, a production system must be able to perform rapid change over in both order patterns and mass customization (Lambert &Cooper, 2000).

Thus, the effectiveness of SCM can be examined by the ultimate effect it would have on customer satisfaction through responsiveness and lower price resulting from lean internal operations. Automated orders and automated productions are the key enablers to realize the quick response program (Perry and Sohal, 2000).

2.2.4. Information Sharing

Information sharing is an important aspect in achieving perfect integration in a supply chain. Cross functional integration and inter organizational integration requires the visibility of information across the supply chain. Poor information sharing between partners in a supply chain will result in poor coordination that will lead to many serious problems such as high inventory levels, inaccurate forecasts, low resource utilization, and high production costs (Whang, 2000).

Indeed, information sharing is highly considered as the way to reduce demand uncertainty (Lee, 2002). Many studies have reported that information sharing can bring many benefits to both suppliers and buyers, such as inventory reduction, and reduced manufacturing costs (Yu et al, 2001).

The way companies share information whatever the confidential level or not; determines the success of the collaboration (Raghunatahan, 2003). The nature of information to be across the supply chain differs based on the degree of integration, institutional trust and availability of infrastructure that facilitate the practice (Lazarevic, et al., 2007).

2.2.4.1. Level of information sharing

Level of information sharing refers to the extent to which critical & proprietary information is communicated to one's supply chain partner (Moberg et al, 2002). Many researchers have suggested that the key to make supply chain effective and efficient is making available undistorted & up-to-date marketing data at every node within the supply chain (Balmier et. al.1996; Childhouse&Towill, 2003).

The impact of information sharing on SCM depends on what information is shared, quality on shared information, and company's capability in using and translating the information in to a supply chain

strategy and operational activities (Moberg et al, 2002). Basically, Information sharing can vary from strategic to tactical & from information about logistics activities to general market & customer information (Mentzer et al. 2004).

2.2.4.2 Quality of information sharing

Quality of information sharing includes aspects such as the accuracy, timelines, adequacy, & credibility of information exchanged. As information sharing is vital, its major impact on supply chain management depends on what information is shared, when & how it is shared, & with whom it is shared (Monczka et. al., 1998; Moberg et. al. 2002)

Having, different interests & opportunities by supply chain participants affect the quality of information. Given these predispositions ensures that, the quality of the shared information becomes a critical aspect of effective supply chain practice (Feldman & Muller 2003). Therefore, organizations need to view their information as a strategic asset & ensure that it flows with minimum delay & distortion (Feldman et al. 2003).

2.2.5. Information Technology (IT)

Nowadays, since IT is involved in every step of operation in each company, therefore it is not surprising that organizations' Supply Chain Management supported by adopting IT. Talluri, (2000) makes the comment that the advances in IT systems have given opportunities for organizations' to transform the way they manage their business.

In SCM, IT is highly regarded as a major enabler in achieving effective SCM. As a supply chain spans many organizations in developing products to customers both up-stream, downstream and many functional areas within a company, the implementation of IT allows the companies to increase communication and coordination of various value adding activities with their partners and between functions within their own operation (Simchi- levi et al, 2000).

In addition, to advance development of the internet technology offers significant opportunities for cost reduction, increasing flexibility, increasing response time, and improving customer services (Lee and Whang, 2001).Li et al, (2005) reviled that, the objectives of IT in SCM are; to provide the information

availability and visibility to supply chain partners, to enable the collaboration with organizations in the supply chain and to allow the decision making based on the total supply chain information.

2.2.6 Training

Lee and whang, (2000) argue that information visibility throughout a supply chain will bring significant impact if companies do not have a capability to utilize the information in effective ways. Hence companies need to consider the skills requirements and education when integrating their value-adding activities with their partners (Gattoma& Clark, 2003). 15

The major concept of SCM is collaboration and seamless integration between various value adding activities with in individual companies and across different organizations along a supply chain (Lazarevic, et al., 2007). Beginning this concept in to practice requires significant changes in corporate culture as well as a new level of human performance. Successes full implementation of SCM concept largely depends on human aspects of organizations (Bowersox et al, 2000; Mentzer, et. al. 2004).

2.2.7 Supplier Integration is the extent to which suppliers and manufacturers coordinate decisions related to inventory management, collaborative planning, forecasting, replenishment, and the flows of physical resources (Wong et al., 2011). An integrated supply chain can be defined as an association of customers and suppliers who, using management techniques, work together to optimize their collective performance in the creation, distribution, and support of an end product.

2.2.8 Customer integration is the component of customer relationship management which puts technology in place that allows customers to process their own transactions and to have direct contact with the organization. This means that the need for middlemen is reduced. It is a way for the organization to do business with substantial savings on human resources.

2.2.9 Logistics Design: - logistics is an integral part of the corporate plan and that factors related to these functions are used as inputs in the overall planning process. Logistics Design is a series of concepts in the field of supply chain management involving product and design approaches that help to control logistics costs and increase customer service level.

2.2.10 Internal integration

in essence refers to information sharing between internal functions, strategic cross-functional cooperation, and working together. Prior to supply chain management thinking, companies relied on internal integration to gain competitive advantage and company performance.

2.3. The Concept of customer Satisfaction

Customer satisfaction can be felt in a variety of circumstances and is linked to both goods and services. It's a highly subjective evaluation that's heavily influenced by customer expectations. Customer satisfaction is also based on the customer's interaction with the firm as well as personal consequences. A pleased customer in the commercial sector is defined by some researchers as "one who gains significant added value" to his or her bottom line, a description that might equally apply to public services (Hanan, Mick, and Petter, 2010). Customer supply relationships are also defined as supply chain strategies that necessitate a whole systems view of the chain's links that operate together efficiently to achieve customer satisfaction at the point of delivery to the consumer. As a result, by eliminating needless expenses, movements, and handling, costs must be reduced throughout the supply chain. The emphasis is on efficiency and added value, or the perception of value by the end-user. In today's competitive business world, customer expectations are more important than ever for marketing managers, and making sure customers are happy is very important to them.

Hines (2004) also defines customer supply relationship as: supply chain strategies require a total systems view of the links in the chain that work together efficiently to create customer satisfaction at the end point of delivery to the consumer. As a consequence, costs must be lowered throughout the chain by driving out unnecessary expenses, movements, and handling. The main focus is turned to efficiency and added value, or the end-user's perception of value.

In today's competitive business environment marketing managers are more influenced from customer expectation and meeting the demand for customer satisfaction is very important for them. Every organization must define customer satisfaction regarding their market. So customer satisfaction could not be defined only standard or quality of product. Customer satisfaction is about relationships between the customer and product or service and the provider of a product or service (Nicholas, 2009).

The food industries need to make commitments to learn what customers need and set strategies that implement customer friendly process relationship rather than the existing one buy-sell traditional

relationship. This is because; in most cases customers base their purchasing decisions on the service they receive, not just on price. Therefore, quality and availability of the product that provides superior service to the customers is very important for the firm (Makweba& Xu, 2009).

Customer satisfaction can be felt in a variety of circumstances and is linked to both goods and services. It's a highly subjective evaluation that's heavily influenced by customer expectations. Customer satisfaction is also based on the customer's interaction with the firm as well as personal consequences. A pleased customer in the commercial sector is defined by some researchers as "one who gains significant added value" to his or her bottom line, a description that might equally apply to public services (Hanan, Mick, and Petter, 2010). Customer supply relationships are also defined as supply chain strategies that necessitate a whole systems view of the chain's links that operate together efficiently to achieve customer pleasure at the point of delivery to the consumer. As a result, by eliminating needless expenses, movements, and handling, costs must be reduced throughout the supply chain. The emphasis is on efficiency and added value, or the perception of value by the end user. In today's competitive company environment, marketing managers are more impacted by consumer expectations than ever before, and achieving customer satisfaction is crucial to them.

2.4 Customer Satisfaction and Supply Chain Management Practices

While managers in a supply chain that includes external organizations must engage with people outside of their own company, mutual understanding between managers of departments within the company must be achieved in this situation. On the other hand, the term "supply chain management" has been used to represent the planning and control of materials and information flows, as well as logistics activities, not only within a firm but also between enterprises (Cooper et al., 1997).

2.5 Empirical study

While managers in a supply chain that includes external organizations must engage with people outside of their own company, mutual understanding between managers of departments within the company must be achieved in this situation. On the other hand, the term "supply chain management" has been used to represent the planning and control of materials and information flows, as well as logistics activities, not only within a firm but also between enterprises (Cooper et al., 1997).

According to Handfield and Nicholas (1999), to stay competitive, businesses must manage a network of upstream firms (suppliers) that provide inputs and a network of downstream firms (customers) that

provide suppliers. Fostering trust with the right partners has a significant impact on current and future business performance. The goal of supply chain management is to meet the needs of the final customer. The customer is an essential component of the supply chain, and the major goal of the supply chain is to meet consumer needs while also making a profit. As seen by Childerhose and Towill (2000), typical supply chain activities begin with a customer order and end when the consumer is satisfied with their item and pays for it.

Alvarado&Kotzab (2001) include in their list of SCM practices concentration on core competencies, use of inter-organizational systems such as EDI, and elimination of excess inventory levels by postponing customization toward the end of the supply chain. Tan et al. (2002) identify six aspects of SCM practice through factor analysis: supply chain integration, information sharing, supply chain characteristics, customer service management, and geographical proximity and JIT capability.

Chen &Paulraj (2004) use supplier base reduction, long-term relationship, communication, cross-functional teams and supplier involvement to measure buyer–supplier relationships. (Perry &Sohl, 2000; Lazarevic, 2007) identify the basic dimensions/perspectives of supply chain management practices which are supplier and customer relationship, information sharing, internal operation, information technology and training.

Dinberu (2016) tried to study Supply Chain Management Practices and Performance of Ethiopian Public Merchandise Business Enterprise. This study examines the relationship of supply chain management practices (strategic supplier partnership (procurement and supply management), transportation and logistics management, customer relationship management, level of information sharing, and internal lean practice) with operational and organizational performance. The finding confirmed that, among supply chain management practices; strategic supplier partnership, customer relationship management have statistically significant contribution to the competitiveness of the enterprise. Supply chain practices are related to supply and materials management issues, operations, information technology and sharing (ICT) and customer service (Tan, 2002). Supply chain practice also includes: technology, cost competitiveness, inventory management and external regulation (McMullan, 1996).

All those have to be managed effectively to realize supply chain's strategic position which allows competitive advantage. Joseph, Namusarge & Biraori (2014) conclude from their study that technology adoption is critical in determining effectiveness of the supply chain function in the public sugar sector.

Supply chain practice depends on business strategy and collaboration in the organization, plan and execution, logistic performance and information technology and its implementation in the organization and including five distinctive dimensions: strategic supplier partnership, customer relationship, level of information sharing, quality of information sharing and postponement (Li et al., 2006). 17

Fazila, (2009) studied that supply chain management practices which are information sharing, customer relationship and strategic supplier partnership has strong impact on competitive advantage respectively. Alirezaet al. (2011) study on Malaysia Electronic Industry to present a model for supply chain performance by employing supply chain design, supply chain information sharing, and flexibility and delivery components as independent variables influencing supply chain performance.

While managers in a SC involving external organizations have to deal with the people outside of its own company, in this situation mutual understanding have to be reached between the managers of departments inside the company itself. However, the term SCM has been used to describe the planning and control of materials and information flows as well as logistics activities not only internally within a company, but also externally between companies (Cooper et al, 1997). Due to the increasing number of players and forces, a supply chain may develop into a supply network which will require a more complex and complicated management system. The idea of improving products and services through SCM; including to reduce the production time and cost without compromising the product quality, is that the managers have to work cooperatively with other organizations in the SC (Handfield &Nichols, 1999).

Moslem (2013), conducted research on impact of supply chain management practices on competitive advantage in manufacturing companies of Khuzestan province (Iran) by using strategic partnerships with supplier, customer relationship, information sharing, Quality of information sharing and internal lean practices as independent variables affecting the competitive advantage. The result from this study was indicates as there is relationships between SCM practices and competitive advantage.

These mechanisms are managing for customer satisfaction, clearing the barriers, building the foundation, using the tools and managing customer satisfaction. All these arms of the mechanisms will be analyzed and explained in the subsequent chapters (Scott, 2003).

Makena (2014) conducted a study on Impact of Supply Chain Management Practices on Organizational Performance: A Case Study of Haco Industries Limited (Kenya). To study relationship between supply chain management practices and organizational performance, four key dimensions of SCM practices

(strategic supplier partnership, customer relationship, information sharing and training practices) were used as independent variables, while market/business and operational performance variables were used to measure the organizational performance. Main findings of the study revealed that there is a high level of practical implementation of SCM practices in Haco Industries ltd and that they all had a positive effect on organization's performance. That is, they improved the organization 's performance in terms of lowering its operational costs, reduction of lead time, high customer service levels, product quality, fast response to changes in the market and expanding its market share and sales. A combination of all the four practices studied had a stronger effect on organization performance other than the effect of one which further shows the need to embrace a good combination of SCM practices

Customer focus delivers customer satisfaction and builds customer loyalty. If firms are customer focused, they will understand their key competitors well and the corresponding competitive forces. Moreover, they monitor and understand their level of pricing, product quality, product availability, and service quality and customer satisfaction. Higher level of customer satisfaction leads higher level of customer loyalty, high level of revenue and market share in the end it drives to high level of profitability (Best,2009).

Customer satisfaction is the degree to which a customer perceives that an individual, firm or organization has effectively provided a product or service that meets the customer's needs in the context in which the customer is aware of and / or using the product or service. Satisfaction is not inherent in the individual or the product but is a socially constructed response to the relationship between a customer, the product and the product provider/maker. To the extent that a provider / maker can influence the various dimensions of the relationship, the provider can influence customer satisfaction (Nicholas, 2009).

While managers in a SC involving external organizations have to deal with the people outside of its own company, in this situation mutual understanding have to be reached between the managers of departments inside the company itself. However, the term SCM has been used to describe the planning and control of materials and information flows as well as logistics activities not only internally within a company, but also externally between companies (Cooper et al, 1997).

According to Handfield and Nicholas (1999), to stay competitive, business enterprises are responsible to manage a network of upstream firms (suppliers) that provide inputs and a network of downstream firms (customers) suppliers, and fostering trust with the right partners have a great impact on current as well as future business performances.

The objective of supply chain management is to satisfy the requirement of the end customer. Customer is an integral part of the supply chain and the primary purpose of a supply chain is satisfying customer needs and generating profit for itself in the process. The routine supply chain activities begin with a customer order and end when a satisfied customer has paid for his purchase (Childerhose&Towill, 2000).

Customers could be satisfied if they are mainly being a part and parcel of the system that delivers the product and services, giving direct input regarding their expectation (Fawcett et al, 2007). As the essence of supply chain management is a pull system and starts from the customer, the role and involvement level would lead in the end of the satisfaction of the customer (Best, 2009). Business enterprises today focus on their Supply Chain Management (SCM) to improve product quality and lead time due to stiff competition from global markets and increased levels of customer's expectation (Tracey, Lim, &Vonderembse, 2005).

Mustafa (2014) conclude in his study, supply chain management practice has strong significant influence on both operational and organizational performance. Christopher (1998) also stated that an effective SCM is a powerful tool to achieve competitive advantage for all parties in the supply chain. According to Tan (2001), the ultimate goal of SCM is to integrate various members of the supply chain in a seamless manner to achieve a high level of customer satisfaction, and thus a long-term competitive advantage.

2.6 The Gap of the Study from Previous Studies

Generally, from above literature reviews it can be easily understandable that the work on supply chain management measurements/ practices and its influences on different perspectives of the organization and overall supply chain partners increasing and yields good backgrounds. However, there is no much researches done on supply chain management practices in the ethio telecom especially in Ethiopia and the relationship of supply chain management practices with customer satisfaction cannot be seen studied in detail. Despite the increase of empirical research in the last few years, important differences in lack of consensus about the definition and dimensionality of the supply chain management practices.

2.7. Conceptual framework of the research

The conceptual model (figure 2.1) depicts the relationship between supply chain management and customer satisfaction. According to the framework, SCM practices will have both direct and indirect effects on customer satisfaction.

Independent variables **Dependent variables**

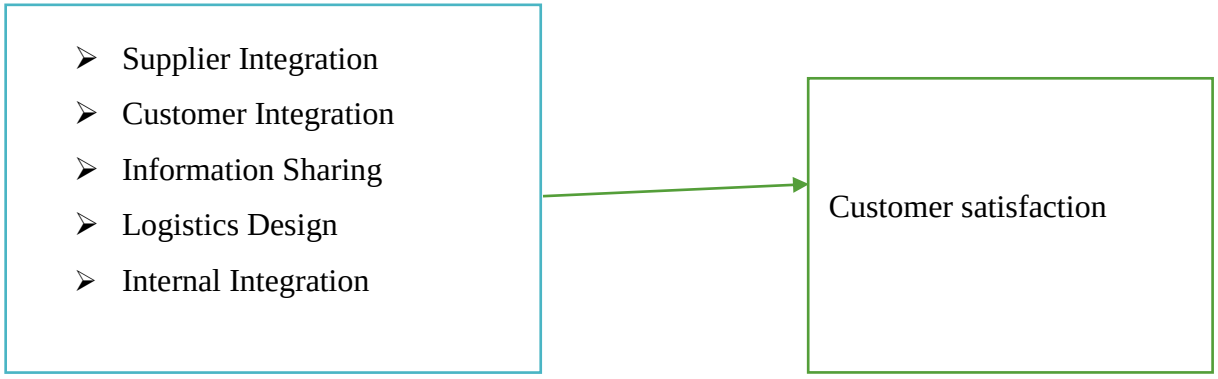

Figure 2.1 conceptual model

Source: Hana Feleke (2016) with modification

CHAPTER THREE

RESEARCH METHODOLOGY

3. Introduction

This chapter includes: description of the study area, research approach, research design, target population and sample size, data source and type, data collection tools, data collection procedure, ethical considerations, method of data analysis and presentation, validity test and reliability test.

This Section describes the research design, sampling technique and sample size, source of data, method of data collection and method of data analysis, model specifications and ethical considerations of the study.

3.1. Research Design

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

3.2. Sampling Techniques and Sample Size

3.2.1. Sampling Technique

The researcher used stratified random sampling technique to select respondents from the target population. If a population from which a sample is to be drawn does not constitute a homogeneous group, stratified sampling technique is generally applied to obtain a representative sample. Under stratified sampling the population is divided into several sub-populations that are individually more homogeneous than the total population (the different sub-populations are called ‘strata’) and then items selected from each stratum to constitute a sample. Once the sample size was determined, the questionnaires were

distributed randomly to the respondents. Therefore, probability sampling techniques was employed in the study.

3.2.2. Target population and Sample size

The target population is the total number of subjects targeted by the study or the group of elements to which the researcher wants to make inference (Mundia, et. al., 2015).

In the study, a population element was determined proportionally. Therefore, population elements were the employees working at finance, human resource, quality, supply chain, customer service, Sales and distribution in ethio telecom Dire Dawa. The total number of target population was120. The sample size for this study is determined by using Yamane formula (1967) as cited in Girma. K, (2019) based on 95% confidence level and at 5% precision level as follows:

n=N/ (1+N (e) 2 =120/1+120(0.05)^2=92Where: n= sample size, N= Number of target population, e= error term

Table3.1sample size selection procedure using proportionate stratified sampling technique

Department (proportional strata)	**population**		**Sample size**	
	Frequency	**Percentage**	**Frequency**	**Percentage**
Finance	2	2.1%	2	2.1%
Quality	6	6.5%	7	6.5%
Supply chain	24	26.1%	23	26%
Customer service	32	34.8%	30	34.8%
Human resource	12	13.04%	13	13%
Sales And Distribution	16	17.4%	17	17.3%

Total	**92**	**100%**	**92**	**100**

Source: ethio telecom Dire Dawa

3.3. Source of Data

The type of data used for this study where both primary and secondary data sources. Primary data was originated by the researcher directly from the respondents for the specific purpose of addressing the research problem and secondary data is obtained from Company reports, previous studies conducted in related topics, books, articles, and journals were used to address and organize the literatures and theoretical frame work of the study.

3.4. Method of data collection

To accomplish the study, the researcher used questionnaires for collection of raw data and to obtain relevant information. The questionnaires were intended to inquire answers in the form of close-ended questions. Closed ended questions where questions in which responses are restricted to small set of responses that generate precise answers to develop the study. In designing the questionnaire, a five point Likert-type scale was used to provide the extent of the respondent's feelings or opinions on the Effect of supply chain management practices on customer satisfaction.

3.5. Method of Data Analysis

Data analysis was made using descriptive and inferential statistics. Inferentially correlations and multiple regression models were employed in the study. After the data was collected through questionnaire, its completeness was verified, coded and entered the computer using SPSS. The data was subject to analysis using application software packages named as Statistical Package for Social Sciences (SPSS) version 22.

According to Boone (2012), Likert scale data are analyzed at the interval measurement scale. Likert scale items are created by calculating a composite score (sum or mean) from five or more type Likert-type items; therefore, the composite score for Likert scales should be analyzed at the interval measurement scale. Descriptive statistics recommended for interval scale items include the mean for central tendency and standard deviations for variability.

3.5.1. Descriptive Statistical Analysis

Descriptive statistics was used to describe different characteristics. Frequencies and percentages was used to analyze general information about respondents mean and standard deviation was used to describe

aspects of supply chain management practices. The mean is preferred as it considers the precise score of each case thus it incorporates more information than the median which only states a scores relative position. The standard deviation on the other hand, was used to measure variation.

3.5.2. Inferential Statistical Analysis

In Inferential statistical analysis, correlation and multiple linear regression analysis were used to determine the relationship between the independent variables (supply chain management practices.) and dependent variable (customer satisfaction); and to test the Effect of supply chain management practices on customer satisfaction.

3.6. Model specification

The multiple regression analysis was used to determine whether supply chain management practices were influences the customer satisfaction of ethio telecom Dire Dawa.

. The study takes the five determinant factors as independent variables and the customer satisfaction as dependent variable in the regression model. The researcher used the following multiple regression model to establish the statistical significance of the independent variables on the dependent variable.

$Y = \beta 0 + \beta 1X1 + \beta 2X\ 2 + \beta 3X3 + \beta 4X\ 4 + \beta 5X5 + \square$

Where; Y = customer satisfaction

X1 = integration suppliers Practices

X2 = Integration Customers Practices

X3 = Information Sharing Practices

X4 = Logistics design practices

X5 = Internal integration practices

$\square$ = Error term which captures the unexplained variation in the model.

In the model, $\beta 0$ = Constant, $\beta 1$ to $\beta 5$ = Regression coefficients represent a one unit of change in the independent variable leads the mean change in the dependent variable while holding other independent variables in the model constant.

3.7. Validity and Reliability

3.7.1. Validity

Validity is the extent to which a test measures what it claims to measure (Mohideen, (2013). A measure is valid if it measures what it is supposed to measure. According to Kindy (2016), content validity is the extent to which the items in an instrument cover the entire range of the significant aspects of the area being investigated. It is the degree to which the measurement device, in this case, the measuring questions in the questionnaire, provides sufficient coverage of the research investigative questions.

3.7.2. Reliability

Reliability is the degree to which an assessment tool produces stable and consistent results where validity refers to how well a test measures what it is purported to measure. The researcher tasted the reliability of the criteria by using alpha coefficient. Alpha reliability is regarded as a measure of internal consistency of the mean of the items at the time of administration of the questionnaire. Cronbach‟s is a reliability coefficient that indicates how well the items in a set are positively related to one another.

Table 2 Reliability test table

Variables name	No of items	Crobanch's alpha	Internal consistency
Company's integration with suppliers	5	.872	Acceptable
Company's Integration with Customers	5	.773	Acceptable
Information Sharing Practices	5	.893	Acceptable
Logistics design practices	6	.871	Acceptable
Internal integration	5	.901	Acceptable
customer satisfaction	9	.880	Acceptable

Source: Researcher survey, 2022

3.8. Ethical Considerations

According to Leedy and Ormrod (2010), most ethical issues fall into one of the following four categories; informed consent, confidentiality, security and honesty. Therefore, the researcher was considering all these issues in the questionnaire guidelines in the following manner: Informed consent: all participants were briefly informed about the reason of conducting such study therefore enabled them to join with full consent. Right to privacy (confidentiality): the researcher kept the nature and quality of participants 'performance strictly confidential. Security: the researcher did not expose the participants to unusual stress, embarrassment, or loss of self-esteem. Honesty: the researcher reported the findings in complete honesty. The researcher was clarifying to the respondents about the objectives of the study and explains that the information is used only for research and academic purposes. During conducting data collection, both honesty and respect for the rights of the respondents was in place. The researchers also request the consent of the respondents to conduct the research study with official letter.

CHAPTER FOUR

4. Data presentation, Analysis and Interpretation

This chapter deals with the analysis, presentation and interpretation of data gathered through questionnaires based on the objectives of the study. The data was found to be important to explain the effect of supply chain management practices on customer satisfaction case study Ethio telecom Dawa Dire. Descriptive and inferential statistics were used to present, analyze and interpret the results of the study. A total of 39 questionnaires were distributed for 92 respondents and among them 80 (87%) response of respondents was obtained valid and used for analysis. Therefore, the response of 80 respondents (collected data) were presented and analyzed by using SPSS version 22 statistical software. The study used correlation analysis, specifically Pearson correlation to measure the degree of relationship between independent and dependent variables. Regression analysis was also used to test the effect of independent variables on dependent variable (customer satisfaction).

4.1. Demographic information of Respondents

This part includes sex, age, education level and work experience of respondents. To get information on these issues the respondents were asked and their responses were presented and analyzed as follows:

Table 4.1.1: Gender of Respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	56	70.0	70.0	70.0
Female	24	30.0	30.0	100.0
Total	80	100.0	100.0	

Source: Researcher survey, 2022

Gender information of sampled respondents shows that from total number of respondents, 56 (70%) of them were males while the remaining 24 (30%) were females. This indicates that majority of employee of Ethio telecom Dire Dawa were males.

Table 4.1.2 Age of respondent

	Frequency	Percent	Valid Percent	Cumulative Percent
20-29	14	17.5	17.5	17.5
30-39	43	53.8	53.8	71.3
40-49	16	20.0	20.0	91.3
50 and above	7	8.8	8.8	100.0
Total	80	100.0	100.0	

Source: Researcher survey, 2022

As shown in the above table regarding the age group of the respondents the larger portion of the respondents that is 43(53.8%) falls within the age group of 30-39, 16 respondents (20%) falls within the age group of 40-49, 14 respondents (17.5%) falls within 20-29 and the remaining 7 respondents (8.8) of age group lies 50 and above. This shows that the majority (53.8%) of employee's age in Ethio telecom Dire Dawa is lies between 30-39 which is adults and productive age groups. From this the researcher concluded that 43(53.8%) Ethio telecom Dire Dawa is filled with most actively working age group that can be able to transform the mission and vision of the company into reality.

Table 4.1.3: Educational level of respondents

Education level	Frequency	Percent	Valid Percent	Cumulative Percent
certificate	8	10.0	10.0	10.0
college diploma	18	22.5	22.5	25.0
degree	28	35	35	53.8
masters and above	26	32.5	32.5	86.3
Total	80	100.0	100.0	

Source: Researcher survey, 2022

With regard to educational level out of total respondents 28(35%) were first degree holders, 26 respondents (32.5) were a holders of masters and above, 18 respondents (22.5%) were diploma holders and the remaining 8 respondents (10%) were certificate holders. This shows the majority of employees in the company were holders of degree and above. From this the researcher concluded that employees in Ethio telecom Dire Dawa have a good level of education.

Table 4.1.4 Work experience of respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
<1 year	8	10.0	10.0	10.0
2-5 years	33	41.3	41.3	51.3
6-10 years	25	31.3	31.3	82.5
11-15 years	13	16.3	16.3	98.8
> 15 years	1	1.3	1.3	100.0
Total	80	100.0	100.0	

Source: Researcher survey, 2022

Regarding Work Experience: From the total number of respondents, 33 respondents (41.3%) have a work experience of 2-5 years, 25 respondents (31.3 %) fall at a work experience level of 6-10 years, 13 respondents (16.3%) have an experience of 11-15 years, 8 respondents (10%) fall at a work experience of less than 1 year and the remaining respondents (1.3%) have a work experience of above 15 years. From this it can be concluded that the majority of respondents, 33 respondents (41.3%) have a work experience of 2-5 years. This implies that most of the respondents have sufficient knowledge and good experience in their organization.

4.2. Descriptive analysis

In descriptive statistics analysis for all variables mean and standard deviation was used. Mean value were used to show the typical response among respondents to the extent of company supply chain Management Practices on each item, In the process of examining of the data, standard deviation was used. Small standard deviations (relative to the value of the mean itself) indicate that data are close to the mean whereas a large standard deviation (relative to the mean) indicates that the data points are distant from the Mean. Standard deviation is a measure of how well the mean represents the data Andy (2006),

According to Field, (2009) the scale of approach agree-disagree was used to the simple way of measuring specific opinions. The approach enabled construction of multiple items that constituted Likert scales. Analysis of the response scores was conducted on the continuous scale. In this context, if the mean value is 0.5- 1.5 strongly disagrees, if the mean value is 1.6- 2.5 disagree, if the mean value is 2.6- 3.5 moderately agree 3.6-4.5 agree and if the mean value is 4.6-5 strongly agree.

Table 4.2.1 Mean and Std. Deviation of supply chain management practices and customer satisfaction

Descriptive Statistics

	N	Mean	Std. Deviation
CIWS	80	2.6575	.50636
CIWC	80	3.2900	.75433
IS	80	2.7000	.44437
LDP	80	3.2200	.73509
INTI	80	2.9500	.58905
CS	80	3.0472	.53412

Source: researcher survey, 2022

In the above table the first objective of the current study sought to establish the effect of supplier integration practices on customer satisfaction. The overall response of mean score among respondents with regard to supplier integration practices applied in the company is (Mean = 2.6575 with std. Deviation= .50636). This shows that employees from various departmental units appeared to moderately agree to be aware of supplier integration practices on offer in their respective company. Generally based on the findings on Table 4.2.1, the overall mean score for supplier integration practices is greater than

2.5, which imply the respondents were moderately agree to the fact that supplier integration practices activities are in their respective organization.

The second objective required to find out the effect of customer integration practices on customer satisfaction ethio telecom dire dawa. Prior to examine the effect of quantitative analyses of employee questionnaire responses was conducted to identify their awareness of customer integration practices being used in the company. Based on the result of the table the overall mean of customer integration practices is (Mean=3.2900 with std. Deviation= .75433). As shown the table the total mean score of customer integration practices is greater than 2.5, which indicates the respondents were moderately agrees to the fact that customer integration practices have an effect on customer satisfaction. Therefore, inventory management was practiced relatively in moderate way in ethio telecom Dire Dawa.

The overall mean response score among respondents with regard to effect of information sharing practices on customer satisfaction used in the company is (Mean= 2.7000 with std. Deviation= .44437). Based on the finding on the table 4.3.1, of information sharing practices scores the overall mean greater than 2.5, which implies the respondents are moderately agree to the fact that of information sharing practices are implemented in their organization.

As shown in the above table regarding the overall agreement among respondents on the remaining two logistics design practice and Internal integration practices scored mean is (M= 3.2200), (M= 2.9500) respectively. This implies that the implementation and practice of supply chain management of the two activities in the company were somewhat good and moderate.

Generally based on the findings on Table 4.2.1: all questions asked under the five practices scores a mean greater than 2.5, which imply the respondents were moderately agree to the fact that supply chain management practices have practiced moderately in ethio telecom Dire Dawa.

With regard to customer satisfaction: customer satisfaction was considered as the dependent variable in the study. Nine questions regarding flexibility, responsiveness, and reliability were therefore asked to measure the company prevailing levels of satisfaction as shown in above table, the overall mean score of organizational performance is (Mean: 3.0472 with std. Deviation= .53412) in ethio telecom Dire Dawa. This implies the three measuring dimensions of satisfaction; flexibility, responsiveness, and reliability have moderate achievement on customer satisfaction.

4.3. Correlation analysis

Correlations are the measure of the linear relationship between dependent and independent variables. A correlation coefficient has a value stretching from -1 to 1. Values that are nearer to the absolute value of 1 show that there is a strong relationship between the variables being correlated while values closer to 0 shows that there is slight or no linear relationship. The strong point of correlation can be labeled using the guide that Evans (1996) proposed for the absolute value of r as cited in If "r = 0.00-0.19 - very weak, r= 0.20-0.39 - weak, r = 0.40-0.59 - moderate, r = 0.60-0.79 - strong and r = 0.80-1.0 - very strong". Pearson correlation coefficients were determined with the goal to obtain evidence about the relationships between the dependent and independent variables.

Table 4.3.1 Correlation Analysis between supply chain Management Practice and customer satisfaction

Correlations

		CIWS	CIWC	IS	LDP	INTI	CS
CIWS	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	80					
CIWC	Pearson Correlation	.528**	1				
	Sig. (2-tailed)	.000					
	N	80	80				
IS	Pearson Correlation	.489**	.446**	1			
	Sig. (2-tailed)	.000	.000				
	N	80	80	80			
LDP	Pearson Correlation	.522**	.473**	.460**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	80	80	80	80		
INTI	Pearson Correlation	.563**	.645**	.598**	.615**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	80	80	80	80	80	
CS	Pearson Correlation	.633**	.711**	.582**	.619**	.662**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	80	80	80	80	80	80

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

Source: researcher survey, 2022

A Pearson's Correlation Analysis was conducted to investigate the relationship between the independent variables, which are information sharing, supplier integration, company customer integration, internal integration, and logistics, with customers' satisfaction status. A correlation analysis with Pearson's correlation coefficient (r) was conducted on all variables in the study to explore the relationships between the independent variables and dependent variable.

Based on the result of above table the correlation between company supplier integration practice and customers' satisfaction is positive and they are significantly correlated at (R = .633**), (P< 0.01). According to Evans (1996) magnitude of correlation, the relationship between the two variables is strong. This implies that company integration with supplier practice and customers' satisfaction is genuinely correlated.

The results also show that company customer integration practice is positively and significantly correlated with customers' satisfaction at (R= .711**), (P<0.01) which indicates strong relationship between the two variables. This finding is consistence with Hana (2016) in her study as it is indicated in the table, there is significant positive correlation between collaboration and customer satisfaction with correlation coefficient of 0.778 (r=0.778) and significance less than 0.001. Therefore, collaboration and customer satisfaction are genuinely correlated. This implies that there is a strong correlation between customer integration practice and customer satisfaction at person correlation coefficient of .711**.

On the other hand, moderate and statistically significant positive correlation is found between information sharing practice and customer satisfaction with (R = .582**), (P< 0.01). Therefore, information sharing practice and customer satisfaction are moderately correlated. Supported by Hana (2016) Information sharing and customer satisfaction with a Pearson correlation coefficient of 0.840. (r=0.840) and significance value is less than 0.001. This significance tells that there is genuine relationship between information sharing and customer relationship.

Based on the survey result of above table, the relationship between logistics design practice and customer satisfaction is positive and they are significantly correlated at (R = .619**), (P< 0.01). supported by Hana (2016) also there is significant positive correlation between level of logistics design and customer satisfaction. In other words, logistics design and customer satisfaction are Correlated in high relationship (r=0.516) with level of significance less than 0. 001.in addition to This finding also supported by

Gebeyehu (2021) the Pearson correlation matrix showed that logistics has a moderate association with customer satisfaction, with a value of 0.424.

Finally, the association between internal integration practice and customer satisfaction is positive and they are significantly correlated at (R = .662**), (P< 0.01), which indicates strong relationship between the two variables. On the other hand, customer satisfaction is least linked to internal integration Supported by Gebeyehu Jalu (2021) internal integration has positive associations with customer satisfaction, with an R-value of 0.82.

4.4. Regression Analysis

Multiple regression analysis was carried out to determine the influence of independent variables on the dependent variable. Multiple regressions also used to determine the overall fit (variance explained) of the model and the relative contribution of each of the predictors to the total variance explained. According to Balance. (2004), the correct use of the multiple regression model requires that several critical assumptions be satisfied in order to apply the model and establish validity. Inferences and generalizations about the theory are only valid if the assumptions in an analysis have been tested and fulfilled.

4.4.1. Assumption Tests of Regression Analysis

Before carrying out multiple regression analysis, the researcher has checked the required assumptions tests that the data must meet to make the analysis reliable and valid. Therefore, the following assumptions of multiple linear regression tests were made using SPSS.

4.4.2. Normality tests

This Multiple regression analysis requires the independent variables to be normally distributed. On SPSS software the response scores for items measuring these variables were first summed and then averaged to yield the score for a particular variable through inspecting using the Kolmogorov-Smirnov statistics. The Kolmogorov-Smirnov statistics of dependent variable with a P value in excess of 0.05 indicated that data was normally distributed across the respective variable (Tabachnick 2013). In this study to check the normality of variables which is incorporated in the multiple linear regression model results was shown in the following table.

Table 4.4.2. Normality Tests

	Kolmogorov-Smirnov[a]		
	N	Statistic	Sig.
SCMP	80	.143	.000
CS	80	.091	.099

a. Lilliefors Significance Correction

b. Test distribution is normal

Source researcher survey, 2022

The above table 4.4.2 displays the normality test distribution that all variables of the study was normally distributed at the value of significance (p>0.000) using Kolmogorov-Smirnov statistics.

4.4.3. Multi-Collinearity Test

Before presenting and interpreting the regression analysis, it is important to evaluate the model in terms of the issue of multi collinearity. There can be problems with collinearity or multi collinearity when several variables are involved (Hill, & Adkins, 2003). Generally, as multi collinearity rises, it will complicate the interpretation of the variables because it is more difficult to confirm the effect of any single variable, owing to their interrelationship (Hair, and Tatham, 1996)

According to Menard (1995) Tolerance should be more than 0.2 and VIF should be less than 10

Table 4.4.3 Multi-collinearity Test of Independent Variables

Model	Collinearity Statistics	
	Tolerance	VIF
CIWS	.577	1.735
CIWC	.542	1.846
IS	.603	1.660
LDP	.570	1.755
INTI	.392	2.554

a. Dependent Variable: CS

Source: Researcher survey, 2022

As shown on the above table, based on the coefficients output (collinearity statistics), the obtained variance inflation factor (VIF) for all independent variables was found between 1 and10, which means that there is no multi collinearity problems and the assumption is met.

4.4.4. Linearity test

Linearity test aims to determine the relationship between independent variables and the dependent variable is linear or not. The linearity test is a requirement in the correlation and linear regression analysis. Good research in the regression model there should be a linear relationship between the free variable and dependent variable. If the value sig. Deviation from Linearity> 0.05, then the relationship between the independent variables are linearly dependent. This approach was used since Tabachnick et.al (2013) note that while Pearson correlation may be used to test linearity.

Table 4.4.4. Tests of Linearity

ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
		(Combined)	18.052	36	.501	4.808	.000
		Linearity	14.838	1	14.838	142.255	.000
		Deviation from Linearity	3.214	35	.092	.880	.648
	Within Groups		4.485	43	.104		
	Total		22.538	79			

Source: researcher survey, 2022

As displayed on the above table the sig. values of deviation from linearity of all variables are > 0.05. From this it can be concluded that there is a liner relationship between independent variables and dependent variable. From the above ANOVA table, the sig. value of deviation from linearity of each

variable were above 0.05 which is 0.648. Therefore, each independent variable is the linearly correlated with the dependent variable which is customer satisfaction.

4.4.5. Homoscedasticity Test

Homoscedasticity applies to multiple regressions and as noted by Tabachnick et.al (2013), assumes uniform variability in scores for the dependent variable in relation to the independent variables. Testing for homoscedasticity was necessitated by the use of hierarchical multiple regressions as the principal inferential statistical approach. Therefore, the obtained sig. Value of all independent variables is > 0.05, which means there is no Heteroscedasticity problem.

Table 4.4.5. Tests of Homoscedasticity

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1(Constant)	.056	.155		.360	.720
CIWS	.011	.059	.028	.186	.853
CIWC	.015	.041	.058	.373	.710
IS	.012	.066	.027	.185	.853
LDP	.025	.041	.092	.607	.546
INTI	-007	.062	.020	-111	.912

Source, researcher survey, 2022

As above table the obtained Sig. value of all independent variables is > 0.05. This indicates that there is no Heteroscedasticity problem in supply chain management practices of Company's integration with suppliers, Company's Integration with Customers, Information Sharing Practices, Logistics design practices and internal integration.

4.4.6. Test of autocorrelation

Smith and Wells (2006) Autocorrelation is the coefficient of linear correlation between two terms of a sequence of random variables. It is also the degree of correlation between the values of the same variables across different observations in the data. A common method of testing for autocorrelation is the Durbin-Watson test. Statistical software such as SPSS may include the option of running the Durbin-

Watson test when conducting a regression analysis. The Durbin-Watson tests produce a test statistic that ranges from 0 to 4. Values close to 2 (the middle of the range) suggest less autocorrelation, and values closer to 0 or 4 indicate greater positive or negative autocorrelation respectively.

Table 4.4.6.1. Test of autocorrelation

Model	Durbin-Watson
1	2.275

Source, researcher survey, 2022

As indicated in the above table the Durbin-Watson tests produces a test statistic Values of 2.275. This implies that degrees of autocorrelation between the values of the same variables across different observations in the data were less and it suggests less autocorrelation.

4.5. Multiple linear regressions

This regression analysis was conducted to know by how much the independent variable explain the dependent variable which is customer satisfaction. The result of the regression was presented in the tables as follows:

Table 4.5.1. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.822[a]	.675	.653	.31445

a. Predictors: (Constant), INTI, CIWS, IS, LDP, CIWC

b. Dependent Variable: CS

Source: Researcher survey. 2022

As indicated in the above model summary table, the "R" column represents the value of R, the multiple correlation coefficients. R value of .822 indicates very strong correlation between supply chain management practices and customer satisfaction which shows a good level of prediction. The "R Square" column represents the R2 value (also called the coefficient of determination), which is the proportion of variance in the dependent variable that can be explained by the independent variables. The R2 value of

.675 (67.5%) implies the relative contribution of supply chain management practice's included in the model in interpreting the customer satisfaction, the remaining 32.5% of the changes can be attributed to other supply chain activities.

Table 4.5.2. ANOVA[a]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.221	5	3.044	30.787	.000[b]
	Residual	7.317	74	.099		
	Total	22.538	79			

a. Dependent Variable: CS

b. Predictors: (Constant), INTI, CIWS, IS, LDP, CIWC

Source: Researcher survey. 2022

The regression model overall fit can be examined with the help of ANOVA. Accordingly, table 4.5.2 of this study shows that the value of R and R2 found from the model summary is statistically Significant at (F=30.787), (P<0.001), which implies the regression model is a good fit of the data. From this it can be concluded that if the sig value is less than 0.05, the combination of independent variables are a good predictors of dependent variable.

Table 4.5.3. Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.354	.240		1.477	.144
	CIWS	.204	.092	.193	2.216	.030
	CIWC	.273	.064	.385	4.278	.000
	IS	.213	.103	.177	2.078	.041
	LDP	.154	.064	.212	2.415	.018
	INTI	.062	.096	.068	.646	.520

a. Dependent Variable: CS

Source: Researcher survey. 2022

From the above table the regression coefficient (coefficient of determination) explains the extent to which changes in the dependent variable can be explained by change in the independent variables or the percentage of variation in the customer satisfaction is explained by changes in independent variables such as supplier integration practices, customer integration practices, Information Sharing Practices, Logistics design practices and internal integration.

As shown in the above table the Sig. value or P value represents the confidence level (significance level). Accordingly, the Sig. value of supplier integration practices is .030, which is < 0.05. From this it can be concluded that supplier integration practices have a positive and significance effect on organizational performance at (β=.204) and (p=.030). This finding is supported that by Gebeyehu Jalu (2021) supplier integration have the strongest positive relationships with customer satisfaction.

As indicated in the above table the P or Sig. value of customer integration practices is .000, which is less than 0.05. This implies inventory management practice has a positive and significant effect on organizational performance at (â= .273) and (P= .000). Therefore, there is a positive and significant relationship between customer integration practices and customer satisfaction. This finding is supported by Hana feleke (2016) indicates that collaboration practice has positive and strong correlation (r=0.874) with customer satisfaction at significance level less than 0.001. accordingly, an increase in customer integration practices leads positive and significant effects on customer satisfaction This finding also supported by Gebeyehu Jalu (2021) who confirmed that customer integration practices were highly practiced in most of the firms studied and this had a positive impact on customer satisfaction at (t= 4.239, p= 0.001) which indicates that customer integration practices has the statistical significant effect on customer satisfaction at 95% confidence level.

As shown from table 4.5.3 the Sig. value of Information Sharing Practices is .041 and which is less than 0.05. This implies Information Sharing Practices has a positive and significant effects on customer satisfaction at (â= .213) and (P= .041). This result is supported by This result is supported by Hana feleke (2016) indicates that information sharing has significant positive correlation (r=0.742) at significance level less than 0.001 with customer satisfaction This shows that there is positive and significant association between information sharing practices and customer satisfaction.

As can be seen from the above table the sig value of Logistics design practice is less than 0.05 which is .018. This implies Logistics design practices has positive and significant effects on customer satisfaction at (P=0.018). This result is supported by Hana feleke (2016) indicates that logistics design is positively correlated to customer satisfaction with correlation coefficient of 0.692 (r=0.692) and the significance value is less than 0.001. From this it can be concluded Logistics design is statistically significant in predicting the customer satisfaction of ethio telecom Dire Dawa. From this it can be concluded that Logistics design practices has positive and significant effects in ethio telecom Dire Dawa.

However, the P-value for internal integration practices is (0.520), which is greater than alpha level of 0.05 and which indicates internal integration practice is not statistically significant. This shows changes in this variable do not bring changes in the dependent variable (customer satisfaction). This is supported by Tsegaye, (2018) who concludes internal integration practice has positive but insignificant effects on customer satisfaction at P value greater than 0.05, which is 0.118. Therefore, the effect of internal integration practices on customer satisfaction is positive but insignificant. Information sharing practices is the second (.213) and it followed by supplier integration and logistic design internal integration practices, with a beta coefficient of, .204, .154, .062 respectively.

Unstandardized coefficients

The unstandardized coefficients (x1 up to x5) are the coefficients of the estimated regression model. Hence, by including the error term (å), the regression model of this study can now be properly written in an equation form as follows:

$Y = \beta 0 + \beta 1X1 + \beta 2X\ 2 + \beta 3X3 + \beta 4X\ 4 + \beta 5X5 + \square$

Y =.354+.204X1+.273X2+.213X3+.154X34+.062X5

The value of ‘Y’ is 0.354 which means the expected value customer satisfaction is 0.354 when all the five variables assume zero value. Among the five factors, four of them are found to be statistically significant supply chain management activities and significant predictors of the dependent variable (customer satisfaction). These are supplier integration, customer integration, information sharing practices, logistics design practices as evidenced by their P-values (P<0.05)

4.6. Validating the Proposed Hypotheses

Ha1: supplier integration practices have positive and significant effect on customer satisfaction.

Supplier integration practices has a positive and significance effect on customer satisfaction at P= 0.030. This finding is supported that by Hana, (2016) who concludes Supplier integration practices has statistically and significantly predicted the customer satisfaction at the value of p= 0.000. As a result, the relationship between Supplier integration practices and customer satisfaction is positive and significance in ethio telecom Dire Dawa. Therefore, Ha1 is accepted.

Ha2: customer integration practices have positive and significant effect on customer satisfaction.

Customer integration practices affect customer satisfaction positively and significantly at a sig value of .000. Therefore, there is a positive and significant relationship between customer integration practices and customer satisfaction. This finding is supported by Hana (2016 indicates that collaboration practice has positive and strong correlation (r=0.874) with customer satisfaction at significance level less than 0.001. accordingly, an increase in customer integration practices leads positive and significant effects on customer satisfaction. Therefore, H2 is accepted.

Ha3: information sharing practices have positive and significant effect on customer satisfaction

As shown in table 4.5.3 information sharing practices has positive and significance effects on customer satisfaction with a Sig. value of 0.041. This result is supported by Hana (2016) indicates that information sharing has significant positive correlation (r=0.742) at significance level less than 0.001 with customer satisfaction This shows that there is positive and significant association between information sharing practices and customer satisfaction. Therefore, Ha3 is accepted.

Ha4: Logistics design practices have positive and significant effect on customer satisfaction

In this study Logistics design practices has positive and significant effects on customer satisfaction at P=0.018. This is supported by Hana (2016) indicates that logistics design is positively correlated to customer satisfaction with correlation coefficient of 0.692 (r=0.692) and the significance value is less than 0.001. From this it can be concluded Logistics design is statistically significant in predicting the customer satisfaction of Dire Dawa ethio telecom. Accordingly, Ha4 is accepted.

Ha5: Internal integration practices have positive and significant effect on customer satisfaction

The P-value for internal integration practices is (0.520), which is greater than Sig. level of 0.05 and which indicates internal integration practices is not statistically significant. This is supported by Tsegaye, (2018) who concludes internal integration practice has positive but insignificant effects on customer satisfaction at P value greater than 0.05, which is 0.118. Therefore, the effect of internal integration practices on customer satisfaction is positive but insignificant. Consequently, Ha5 is rejected.

Table 4.6.1 Summary of Hypothesis Testing

Proposed hypotheses	**Confidence level P<0.05**	**Decision based on finding**
Ha1: supplier integration practices have positive and significant effect on customer satisfaction.	0.030	Accept
Ha2: customer integration practices have positive and significant effect on customer satisfaction.	0.000	Accept
Ha3: information sharing practices have positive and significant effect on customer satisfaction	0.041	Accept
Ha4: Logistics design practices have positive and significant effect on customer satisfaction.	0.018	Accept
Ha5: Internal integration practices have positive and significant effect on customer satisfaction	.520	Reject

Source: Researcher survey. 2022

CHAPTER FIVE

Summary, Conclusions and Recommendations

5. Introduction

This part is therefore containing three sections. Based on the result of the study Summary of findings, Conclusion and Recommendation was made.

5.1. Summary of finding

The study was dealt with investigating the effects of supply chain Management practices on customer satisfaction in the case of ethio telecom dire dawa. The specific objectives of the study include; to examine the effects of supplier integration practices, effects of customer integration, effects of information sharing practices, Logistics design practices and effects of Internal integration on customer satisfaction. To achieve the intended objectives of the study data was collected from primary source of data through questionnaires and secondary sources. Descriptive statistics, correlations analysis and regression analysis were used for analyzing the data.

- As presented in chapter four of demographic profile out of 80 respondents established in the study most of the respondents were males and ethio telecom dire dawa is filled with most actively working age group. Additionally, majority of the respondents have 2-5 years of work experience in the factory and respondents educational background reveals that majority of them were educated and the have good level of education and somewhat good work experiences in the Organization.
- The first objective of the study was to e examine the effect of supplier integration practices on customer satisfaction in the company. With this regard from descriptive analysis, the overall mean score is greater than 2.5, meaning the respondents were moderately agreed with respective questions. Under correlation analysis the result shows that there is positive and strong correlation between supplier integration practices and customer satisfaction, with correlation coefficient of 0.633 (r= .633) with significance value less than 0.01. The output of regression analysis indicates that supplier integration practices is one of the predictors of the dependent variable with beta coefficient of 0.204 and has a positive and significance effects on customer satisfaction at .030 significance level.
- The second objective of the study was identifying how customer integration practices in the company will affect customer satisfaction. Consequently, under descriptive analysis the overall mean core is greater than 2.5, which implies moderate agreement with respective questions. As indicated in

correlation analysis customer integration practice is positively and significantly correlated with customer satisfaction at (R= .711**)**, (P<0.01), which implies strong relationship between the two variables. The regression analysis shows that customer integration practice has positive and significant effect on customer satisfaction at significance level of .000. It is the largest contributor of organizational performance from the rest with a beta coefficient of .273. i.e., it regresses customer satisfaction more than the other variables included in the study.

- The third objective of the study was to examine how effect of information sharing practices on customer satisfaction. With this regard under descriptive analysis, the overall mean score for each item was greater than 2.5, which shows respondents were moderately agree with the items. From correlation analysis moderate and statistically significant positive correlation is found between information sharing practices and customer satisfaction with correlation coefficient (R = .582**) and at significance level less than 0.01. The result of regression analysis indicates information sharing practices has a positive and significant effects on customer satisfaction at (P= .041).
- The fourth objective of the study was to examine the effect of logistics design practices on customer satisfaction. Concerning this, under descriptive analysis the overall mean score is greater than 2.5, which implies the respondents were moderately agree to the items raised about this variable. From correlation analysis, the relationship between logistics design practices and customer satisfaction is positive and they are strongly correlated at (R = .619**), (P< 0.01). The result from regression analysis shows logistics design practices has positive and significant effects on customer satisfaction at significance level of 0.018.
- The final objective of the study was to determine the effect of internal integration practices on customer satisfaction. From descriptive analysis, the overall mean score is greater than 2.5, meaning the respondents were somewhat agreeing with each items under this variable. Under correlation analysis the result from the study shows that there is positive association between Internal integration practice and customer satisfaction with correlation coefficient of .662** (r=0.662) and significance value less than 0.01. However, the regression analysis shows that internal integration practice has insignificant effects on customer satisfaction at significance level of 0.520 which is greater than 0.05.
- Regression coefficient results shows that four out of the five variables are statistically significant for customer satisfaction of ethio telecom Dire Dawa These the statistically significant variables are supplier integration practice, customer integration practice, information sharing practice and Logistics design practices as evidenced by their P-values (P<0.05). In other way, the effect of supply chain

management practice on customer satisfaction and it is answered by the regression model summery, R2 = .675 which revealed that the model accounts for 67.5% of the variation in dependent variable is explained by the linear combination of all the independent variables of supply chain management practices included in the study.

5.2. Conclusions

Based on summary of findings conclusion has made as follows:

- The result from descriptive analysis shows all of supply chain management practices were moderately practiced with in dire dawa ethio telecom.
- The five supply chain management activities such as supplier integration, customer integration, information sharing practices, logistics design, and internal integration practices were identified from correlation analysis. These all the five practices have positive relationship with customer satisfaction.
- The output from regression analysis indicated that only four supply chain management activities were the relevant effect on customer satisfaction. These are supplier integration, customer integration, information sharing practices and logistics design practices. Accordingly; -
- Customer integration practice has positive and significant effect on customer satisfaction and it is statistically a significant predictor of customer satisfaction. Therefore, this can't ensure customer satisfaction with respect to indicators taken.
- Information sharing practices is statistically significant predictor of customer satisfaction and has significant effect. It is the better variable in regressing customer satisfaction from the rest practices included in the framework.

  There is the percentage of variation in customer satisfaction which is explained by the information sharing practices and the coefficient for information sharing practices was significant. Consequently, information sharing practices has positive and significant effect on customer satisfaction.

  Despite analysis has outlined, Logistics design practices was strongly correlated and has significant effect on customer satisfaction.

- However, even though internal integration practice has positive relationship with customer satisfaction but it has insignificant effect on customer satisfaction because the P values of this practice is greater than 0.05.

Based on their respective beta coefficients, supplier integration, customer integration, information sharing practices, logistics design practices were the most statistical predictors of customer satisfaction.

5.3. Recommendations

Based on the summary of findings, and conclusions, the following issues were recommended: -

- The study acknowledged supplier integration practices has positive and significant effect on customer satisfaction at 0.030 confidence levels and it is statistically a significant predictor of customer satisfaction with 20.4% beta coefficient. Therefore, the study recommends that managers and all concerned body of ethio telecom Dire Dawa should develops management tools like evaluating and adjusting the needs and wants of supplier more and more so as to enable them more efficient and effective as well as they have to fulfill customer orders in the promised date to address customers' satisfaction and to make the management sounder.
- As indicated in the study customer integration practices has predicts the customers' satisfaction of the organization positively at (P=0.00) with the highest beta coefficient of 27.3 percent. Due to this fact the company should give more emphasis for customer integration practices because it predicts the customers' satisfaction more than the rest of supply chain management practices even if more of the rest activities have positive effects on the customers' satisfaction.
- The study recognized that information sharing practices has positive and significant effect on organizational performance at P=0.041 with an explanatory power of 58.2 percent. Accordingly, the organization should expect to do more and more so as to sustain this outcome and furthermore to improve it through modernizing the working system of information by building the information sharing which is supported with technology and invest on IT facilities to enhance information sharing both internally and externally. This can be done through hiring IT professionals and investing highly in the area of information technology.
- Logistics design practices was strongly correlated with company customer and it has significant effect on customers' satisfaction. Therefore, the study recommends that all concerned body of ethio telecom Dire Dawa should Logistics design practices more and more in their operations and decision making process in order to increase customer satisfaction, productivity and profit thereby impacting positively on their customer satisfaction.

- From the findings internal integration practice has positive relationship with customer satisfaction but it has insignificant effect on customer satisfaction, because the P values of this practice is greater than 0.05. It is therefore, the study recommends, that managers and concerned body of the company should update internal integration in strategic plan order to increase their productivity. So in order to address this the organization should Create strategic and strong relationships with suppliers, Apply Electronic exchange of information with suppliers
- As indicated in conclusions, four supply chain management activities (of supplier integration practices, customer integration, information sharing practices, and Logistics design practices) are appropriate for the effects of customer satisfaction. Therefore, the factory should give more attention in properly implementing and improving of those activities.

5.4 Suggestions

On the basis of the findings and conclusions reached, the following suggestions were forwarded in order to improve the Supply Chain Management of the case ethio telecom company. It is noticeably explained that collaboration is vital in increasing the potential of the ethio telecom company to satisfied customers.

Ethio Telecom is suggested to integrate suppliers and customers, so as to bring about flexible, responsive and efficient production. This can be done first, by networking the functional units of the organization with appropriate IT and integrated information system. Secondly to encourage coordination and interdependent work design accompanied with agile work force and multipurpose machineries to improve flexibility and responsiveness to market and customers' requirements. So that, ethio telecom company is highly suggested that to prepare training program for its employees and managers in order to enable them to be competent, committed, responsive, finally which improves internal operation and customers service which then result in customer satisfaction.

Information sharing practices invest on IT facilities to enhance information sharing both internally and externally. This can be done through hiring IT specialists or out sourcing. More importantly, the case company is suggested to improve its relationship with suppliers from simply buy-sale relationship to a modern supply chain relationship through establishing strategic or long term relationship, contract, and continuous information sharing in order to minimize supply uncertainty which resulted in demand and supply matched and satisfaction of customers of the case company.

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APPENDIX

DIRE DAWA UNIVERSITY

SCHOOL OF POST GRADUATE STUDIES

DEPARTMENT OF LOGISTICS AND SUPPLY CHAIN MANAGEMTN

Questionnaire to be filled by employees

Dear Respondents

Greeting, my name is Girma Mengesha Birhane; I am a post graduate candidate at Dire Dawa University, school of graduate studies, Department of logistics and supply chain management. Currently I am conducting a research in partial fulfillment of the requirements for Master degree in logistics and supply chain management. The intended study is entitled as "effect of supply chain management practice on customer satisfaction: The case of ethio telecom Dire Dawa". The research is going to be carried out on your response and other relevant data that could support it. I kindly, ask your co-operation to provide a genuine response to the questions listed below. You can tick the option that you choose. Your responses will be treated confidential and used for only academic purpose.

General Directions

- ☞ Please do not write your name or address on the questionnaire.
- ☞ Please put (√) mark in the provided space.
- ☞ Thank you in advance for your time and consideration case of enquiry, please contact me at my address below.

Girma Mengesha

Tel: +251911507714

Gmail Address: girmamengesha239@gmail.com

Instruction – please tick appropriate answer you choose.

Gender	**Male**	**[ ]**
	Female	**[ ]**
Age	ages 20 -29	**[ ]**
	ages 30 -39	**[ ]**
	40 – 49	**[ ]**
	Age 50 years and above	**[ ]**
Education	Diploma and below	**[ ]**
	First Degree	**[ ]**
	Master and above	**[ ]**
Your work experience	Less 1 year	**[ ]**
	2- 5 years	**[ ]**
	6-10 years	**[ ]**
	11-15 years above 15 years	**[ ]**

Part Two: Supply Chain Management Practices

The following questions are about how your organization has been implementing the supply chain management Practices. (The questions below are specific to your organization) Please provide a mark (√) as indicated on the guideline to indicate the extent to which you agree or disagree with each the following statement based on your experience working in this organization. The rating represents your level of agreement as follows: The rating represents your level of agreement as follows: 1= strongly disagree 2=Disagree 3=Neutral 4=Agree 5=strongly agree

			Strongly disagree	Disa gree	Neutra l	Agree	Strongly agree
Variables		**Dimensions**	**1**		**3**	**4**	**5**
integration suppliers Practices		The level of strategic partnership with suppliers					
		The company seeks long-term stable relationships with suppliers					
		Regularly solve problems jointly with our suppliers					
		Included our key suppliers in corporation's planning ad goal setting activities					
		The establishment of quick ordering system					
Integration Customers Practices		Follow-up customers for feedback					
		Monitoring and measuring customer service level					
		The level of market information sharing with major customers					
		Customer feedback is used to improve customer relations, processes, products and services					
		The organization has systematic processes for handling customer complaints					

Information Sharing Practices		Sales forecast information sharing with customers					
		Sales forecast information sharing with suppliers					
		Adequacy and quality of information sharing throughout the supply chain					
		Overall efforts of Inter-organizational information coordination and sharing					
		Sense of trust and confidence along the supply chain					
Logistics design practices		The level of IT-based automated ordering from major customers					
		Compliance customer's delivery on time requirements					
		up-to-datedness of IT technologies throughout the supply chain					
		Adequate investment are made in developing technology for SCM practices					
		The company creates compatible Information system for supply chain members					
		Joint product planning with major customers					
		Systematic information sharing between					

Internal integration practices		management bodies and employees					
		information integration between functional departments					
		Cross functional team works in process of improving internet integration					
		Periodic interdepartmental meeting with in the ethio telecom					
		Experience sharing and cooperation between functional departments					

Part 3: customer satisfaction

The following questions are about how your organization has measuring the organizational performance with regards to Reliability, Responsiveness and flexibility. Please provide a mark (X) as indicated on the guideline to indicate the extent to which you agree or disagree with each the following statements based on your experience working in this organization. The item scales are five-point Likert type scales with (1 = strongly disagree (SDA), 2 = disagree (DA), 3 = neutral (N), 4 = agree (A), 5 = strongly agree(SA)

	Variables	SDA	DA	N	A	SA
	Responsiveness					
	Staff make information easily obtainable by customers					
	Adopting ICT in Dire dawa ethio telecom increases the timely information sharing with project offices in all supply chain processes					
	ICT helps to improve the supply chain efficiency in terms of delivering information, to the correct place, at the correct time.					
	Reliability					
	When customer has a problem, they show sincere interest in solving the problem					
	Adoption of ICT improves the supply chain service in documentation accuracy					
	Adoption of ICT contributes to the cost minimization of the total supply chain expense					

flexibility						
	Exchange of information takes place frequently, informally and/or in a timely manner.					
	The ICT implementation improves the ability of the supply chain to rapidly adjust its capacity in response to customer demand					
	Exchange of information takes place frequently, informally and/or in a timely manner					