ST. MARY'S UNIVERSITY

SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF MARKETING MANAGEMENT

EFFECT OF ECX SERVICE DELIVERY ON SALES PERFORMANCE IN THE CASE OF OIL-SEED EXPORTERS, ADDIS ABABA

BY

TADELE DESSALEGN

JUNE 2021

ADDIS ABABA

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SGS/0354/2012A

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A THESIS SUBMITTED TO ST. MARY'S UNIVERSITY, SCHOOL OF GRADUATE STUDIES, IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS OF DEGREE OF MASTERS OF ART IN MARKETING MANAGEMENT.

JUNE 2021

ADDIS ABABA

ST. MARY'S UNIVERSITY

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DECLARATION

I, the undersigned, declare that this thesis “EFFECT OF ECX SERVICE DELIVERY ON SALES PERFORMANCE IN THE CASE OF OIL-SEED EXPORTERS, ADDIS ABABA” is my original work, prepared under the guidance of Zemenu Aynadis (Asst. Prof.). All sources of materials used for this thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or full to any other higher learning institution for the purpose of earning any degree.

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ENDORSEMENT

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

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ACKNOWLEDGEMENT

First of all, I would like to thank the Almighty God who gave the strength, patience Guidance in my life. Next my most sincere and deepest thanks goes to, my advisor Zemenu Aynadis (Asst. Prof.) for the professional guidance and advice he has given me throughout the progress of this study.
Finally, I would like to thank my family and my wife for giving me support and Encouragement throughout the school years.

The successful completion of this study could not have been possible without oil seed exporters' unreserved willingness to provide their input as questionnaire respondents.

Thank you very much,

Tadele Dessalegn

ABBREVATION AND ACRONYMS

ECX -	Ethiopian Commodity Exchange
EIA -	Ethiopian Investment Agency
FAO -	Food Aid Organization
GDP -	Gross Domestic Product
SPSS -	Statistical Package for the Social Sciences
STP -	Straight Through Process
UNCTAD -	United Nation Conference on Trad and Tourism
VIF -	Variations Inflation Factor

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ABSTARCT

The main objective of the study is to investigate factors affecting ECX service delivery i.e., automated technology adaptation, staff competency, warehousing facility, grading certification, pricing/service charge, and timeliness of service delivery and their effects on organizational performance in the case of Oil-seed exporters in Addis Ababa. By taking the research objectives and questions into considerations, quantitative research approach and explanatory and descriptive research design were used. The study used simple random sampling technique. By using structured questionnaire, the data were collected from 187 oil-seed exporters of ECX customers like owners, representatives, agents, and managers specifically in Addis Ababa City with the response rate of 88%. For the purpose of analyzing the obtained data both descriptive and inferential statistics were used. Results indicated that pricing/service charge has the most positive significant effect on the oil-seed exporters' performance among other variables. Also automated technology adaptation, staff competency, warehousing facility, and timeliness of service delivery found to have significant positive effect on exporters' performance. The result also indicated that grading certification was insignificant with respect to exporters' performance. Among factors affecting exporters' performance automated technology adaptation, staff competency, warehousing facility, grading certification, pricing/service charge, and timeliness of service delivery explain 89.6% the variance in exporters' performance. Finally, based on the finds of the study, recommendations were made for Oilseed-exporters of ECX customers based on the findings of the study.

Keywords: Ethiopian Commodity Exchange, Oil Seed Export, Exporter's Performance, Automated Technology, Grading Certification

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

The most important and crucial aim of the developing countries is to achieve a rapid economic growth and development. The desire for such a rapid growth in developing countries is attained through participating more in international trade. Specialization in cross-border trading brings substantial economic gains and exports are generally perceived as a motivating factor for economic growth. The role of exports in raising such economic growth and development of a country basically depends on organized trading system in globalized commodity market for the fact that export escalation is often considered to be a main determinant of the production and employment growth of an economy (Ramos, 2001). Now a day, the global market demands standardized products and efficient trade contracts in supplying commodities to the international market. Commodity market is one of the best platforms for facilitating dissemination of transparent information, lowering cost and transactional risks. But inefficiency and lack of trustworthiness of commodity exchange platforms in developing countries substantially hurt the export performance and the economy of the host country at large.

Despite different set of problems, notably faster transmission of international price volatility to domestic markets, higher rates of rejection on account of Sanitary and Phyto-sanitary (SPS) measures, and restriction in providing subsidy supports, the delivery of quality service by agricultural commodity traders considerably influence the performance of exporters (Lakshmi & Sudhakar, 2017). Fundamentally the exchange platforms are designed to provide quality service and add value to all market players through addressing risks of contract performance and default on physical delivery/ payments. Though agricultural commodity exchange traders in developing countries have become known for insufficient or on-time market information, unstable price, poor quality, lack of trust among trading partners, and uncoordinated markets (Gilbert, Linyong & Divine, 2013). Ethiopian commodity exchange in the export industry is not far from these facets.

Ethiopia Commodity Exchange (ECX), the first of its kind in Africa, was formed in 2008 to address the problems of market access and market infrastructure primarily for grain farmers. It is a new initiative for Ethiopia and the only marketplace for exchanging agricultural commodities and

subsequently became solely responsible for grain products such as coffee, sesame, Red Kidney Bean, Soyabeans, Chicken peas, and other oil-seed products. The platform is basically meant for assuring security of all commodity market players through providing a secure and reliable End-to-End system for handling, grading, storing, matching offers and bids for commodity transactions. It also provides a risk-free payment and goods delivery system to settle transactions, while serving all fairly and efficiently. Facilitating organized and centralized trading for buyers and sellers with a predefined legitimate-contact enhances the performances of local exporters.

However, Ethiopian exporters often bitterly complain against the bureaucratic hassles. Now a day, the exchange is characterized by lack of transparency of the overall service delivery, failure in guaranteeing product grade, poor quality inspection, on-time delivery and operating system of daily clearing and settling of contacts (Melsew, 2015). Consequently, they are subjected to unnecessary market risks, the risk of adverse unforeseen price movements or changes in supply and demand within a fraction of seconds. As a result of many constraints commodity exchanges have not lived up to expectation of the exporters in terms of technology modesty, grading system, warehousing facility, staff's competency, service charges and timeliness (Etsehiwot, 2019) results in critically hurts the exporters' performances in terms of achieving their targeted sales volumes, sales growth and profitability at large.

There is no shortage of empirical and theoretical studies regarding the role of exports in raising the economic growth and development of a country. Extant scholars argued that international trade is the main source of economic growth and more economic gain is attained from specialization (Abdul &Agus, 2000; Dawson, 2005; Zahir, 2010). Such specialization in the export industry counts on either the competency of the exporter himself, the macro-environment of the export business or the bureaucratic hassles of the Exchange. In Ethiopian context, a number of studies have been conducted regarding the prospects and challenges of ECX (Melsew, 2015; Worku&Ejigu, 2016; Ahmed, 2015). However, in some countries like Ethiopia, agricultural commodities in particular should undergo through ECX or else no other ways to transact. Sometimes, failure in delivering quality service in such decisive platforms would have huge impact on the exporters' performance. The influence of such export bottlenecks has been overlooked in previous studies. In order to measure the contribution of ECX to the export traders, it is important to study and analyze from traders' own perspective that how the quality of ECX service delivery affect the overall performance of the exporters.

The aim of this study is therefore to identify the factors affecting EXC service delivery and to investigate their effect on the overall exporters' performance taking oil-seed exporters in Addis Ababa as a case study. The output of this research is believed to fill this knowledge gap and validate the findings of previous researches by assessing the role of ECX in stimulating agricultural commodities export focusing on oil-seed exporters' perception.

1.2. Statement of the Problem

Ethiopia Commodity Exchange (ECX), the first of its kind in Africa, was formed in 2008 to address the problems of market access and market infrastructure primarily for grain farmers (Eleni, 2009). It is a new initiative for Ethiopia and the only marketplace for exchanging agricultural commodities and subsequently became solely responsible for grain products such as coffee, sesame, Red Kidney Bean, Soya beans, Chicken peas, and other oil-seed products. The platform is basically meant for assuring security of all commodity market players through providing a secure and reliable End-to-End system for handling, grading, storing, matching offers and bids for commodity transactions. It also provides a risk-free payment and goods delivery system to settle transactions, while serving all fairly and efficiently. Though, it's believed to provide market integrity in terms of product itself, transaction, and market actors, the ECX has been characterized by insufficient (on-time) market information, unstable price, poor quality, lack of trust among trading partners, and uncoordinated markets (Etsehiwot, 2019).

A Commodity Exchange is fundamentally designed to provide service and add value to all market players. It adds value to the market by addressing risks of contract performance and default on physical delivery/ payments. However, according to Ethiopian Chamber of Commerce report (2019), local exporters often bitterly complain against the bureaucratic hassles, lack of transparency of the overall service delivery, failure in guaranteeing product grade, poor quality inspection, on-time delivery and operating system of daily clearing and settling of contacts. Thus, exporters particularly in developing countries are subjected to unnecessary market risks, the risk of adverse unforeseen price movements or changes in supply-demand within a fraction of seconds (Isaac, 2011). As a result of many constraints, commodity exchanges haven't lived up to expectation of the exporters in terms of technology modesty, grading system, warehousing facility, staff's competency, service charges and timeliness.

Taking due consideration for sensitivity and expensiveness of commodity exchange service provision, ECX has been exerting unlimited efforts to mitigate unnecessary costs induced from huge physical investments in warehousing, operational communications as well as operational costs involved in screening participants and enforcing contracts (Eleni, 2008). Moreover, substantial improvements have been carried out typically on exchanges to must have provide clearinghouse services which allow buying and selling the commodities traded at the stated prices with limited fear of default for participants. Efforts are also exerted for enhancing the professional skills in the warehousing system for keeping storage losses at a minimum. Despite deficient and incompetent telecom infrastructure, internet services in the ECX have been continuously upgraded to disseminate information to the participants (Ethiopian Investment Agency - EIA, 2018). In doing so, for an exchange to succeed its services must be adequately valued by users that they are willing to pay fees to cover these costs fairly. Market failures including inadequacies in physical infrastructure, asymmetry in information, inadequate supporting legal and financial institutions can all impede the formation of futures exchanges which could be ended-up in frustrating exporters to indulge in the industry with full inertia (Baskara, 2007).

Despite its establishments and subsequent system improvement, there are no adequate studies that identified the factors affecting the service quality of ECX that affect exporters' performance. Extant researchers tried to address user's perception towards its service quality to investigate their level of satisfaction. Moreover, the previous studies also mostly focused on the challenges and prospects of ECX to farmers and traders. To the best knowledge of the researcher, there is a lack of focus on what related factors affect the service delivery and its influence on oil-seed exporter's performance in Addis Ababa. In light of the above conditions and its role to the society in nation-building, the researchers find the need to assess the factors affecting the quality of the service delivery of ECX. Thus, the aim of this study is to investigate the factors that affect ECX service delivery and their significant influences on exporters' performance.

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of this study is to investigate factors affecting Ethiopian commodity exchange (ECX) service delivery and their effect on oil-seed exporter's performance in Addis Ababa.

1.3.2. Specific Objectives

To attain the general objective, the following objectives need to be addressed, specifically, to:

- To examine the effect of automated technology adaption on the exporters' performance
- Evaluate the influence Staff Competence of ECX on exporter performance
- Investigate the effect of Warehousing system on oil-seed exporters' performance
- Investigate the effect of Grade certification service on oil-seed exporters' performance
- Evaluate the effect of Timeliness of service delivery on oil-seed exporters' performance
- Evaluate the effect of ECX Service Charges on oil-seed exporters' performance

1.4. Significance of the Study

Centralized commodity exchange is a platform known for providing market transparency and can help to reduce transaction costs which are associated with physically inspecting product quality, identifying market outlets, and finding buyers or sellers. Based on this notion, the output of this study is believed to have significant importance for the managements of ECX managements to figure out the service areas which require systematic reform so as to enhance exporter's satisfaction. It may help them to make informed decision on how and which service requires major improvement in the future.

Meanwhile, the exporters will also be beneficiary for the fact that it enhances exporters' competency or reputation in the face of international market arena by supplying quality products with competitive market prices.

The study also contributes to exporting firms a number of benefits in terms of providing them accurate and current information along with assuring sufficient supply with real-time price information. Besides, improved ECX services might improve the performance of the producers to promote their production through escalating exporter's demand. The country may gain more growth in GDP via earning revenues from quality product exports

Finally, by fulfilling the aims, this study will be helpful for future study focusing on understanding the concept of the aforementioned variables which results in high or better export performance.

1.5. Scope of the Study

This study has a conceptual, geographical and methodological content delimitation. Conceptually, it is limited to factor affecting service delivery and their effect on user's performance in terms of product quality (grading), conducive facility (warehousing), and effective execution of service delivery (timeliness), staff competence, and service charges. The research adopted the conceptual framework from literature and limited with this adopted content scope based on the aforementioned key factors that might affect customer's performance.

Geographically, the study it only covered oil-seed exporting firms in Addis Ababa for the fact that most (not all) exporters have head-office in the capital city and could be taken as a representative for the exporter population.

Methodologically, the scope is was delimited to oil-seed agricultural products. The oil-seed exporters are chosen as both local exporters and host country importers complaint is escalating from time to time for the fact that due consideration has merely been given to coffee exports. The targeted exporters' managers, marketers and agents (if avail) were the units of measure.

1.6. Definition of Key Terms

Export performance: - The relative success or failure of the efforts of a firm or nation to sell domestically produced goods and services in other nations. (Cavusgil and Zou, 1994).

Commodity Exchange (Exchange): Simply a central place where sellers and buyers meet to transact in an organized fashion, with certain clearly specified and transparent ―rules of the game. (Eleni, G.M. and Goggin, I., 2005).

Agricultural Commodities: Staple crops and animals produced or raised on farms or plantations. Most agricultural commodities such as grains, livestock, and dairy provide a source of food for people and animals across the globe. (Lawrence, P., 2020).

Oil-Seed: Oilseeds are generally, seeds grown primarily for the production of edible (i.e., cooking) oils. Sunflower, Sesame, Cotton seed, olives and groundnuts are some of the seeds from which edible oils are produced (Siger, A., 2007).

1.7. Organization of the Study

This study is classified into five main chapters. The first chapter refers introduction of the study which included the background, the problem statement, the research objectives, significance and scope of the study. The second chapter focused on literature review. It contains relevant theories, conceptual and empirical discussions leading to identification of research gaps and the conceptual framework. The third chapter presented the research design, target population, sampling methods, sample size, data collection instruments applied well as method of data analysis and presentation. The fourth chapter presented demographic characteristics, descriptive and inferential statistics analysis, findings and their interpretations. The last chapter consisted summary of major findings, conclusions and recommendations of the research study.

CHAPTER TWO

2. REVIEW OF THE RELATED LITERATURE

This chapter, review of the related literature, has three major parts: theoretical literature review, the empirical review and conceptual framework of the study. The theoretical review has an introduction followed by the discussion of definition of commodity exchanges, why commodity exchanges and global and domestic coffee market review. The second part of the chapter is the empirical literature review which discusses the benefits of commodity exchanges and review the previous studies conducted on ECX. The conceptual framework and hypotheses are also discussed in the third part of the review of literature.

2.1. Theoretical Review

2.1.1. Commodity Exchanges

Commodity exchange has been defined by different authors and scholars. Eleni (2006) defines commodity exchange as a way of organizing trade between buyers and sellers on the basis of formalized rules and procedures known and agreed upon by all market participants and self-enforced by the members of the exchange themselves who defend the integrity of the market. Another definition by Ngmenipuo and Issah (2015) states that a commodity exchange is an organized marketplace where buyers and sellers come together to trade commodity related contracts following rules set by the exchange. In its wider sense, a commodity exchange is an organized market place where trade, with or without the physical commodities, is funneled through a single mechanism, allowing for maximum effective competition among buyers and among sellers.

Commodity exchanges are private institutions that facilitate trade by creating and enforcing property rights and governing contractual relationships between commodity buyers and sellers which makes the exchange very successful (Jerry, 1991). From the above definitions of scholars about exchange indicated that, it (commodity exchange) can be a means to transform the traditional marketing system to the modern one for facilitating trading. It is "...an organized marketplace where physical commodities are being traded and exchanged" (FAO, 2011). According to Federal Negarit Gazeta (2007), commodity exchange is a place where standardized commodity-linked contracts are traded. A commodity exchange is an institution or system where people who want to sale and make an offer

of product that they want to sell. Simultaneously, peoples who wanted to buy also are making bids. The exchange is institution which matches the buyer/producer with the seller, these processes results in the market price that becomes known to all (Eleni, 2006, cited in Mesay, 2007). Furthermore, According to Alexander and Jerry (2011), exchange is the way of organizing products at market price which is the engine to producers can motivate to supply more of their products to the market and get better returns from it and improve their life expectancy.

In addition to the above, the system helps the members to transfer price risks by having accurate information about the current price of the products, and encouraged to build trust between the producers and buyers and also helps facilitate order and brings integrity in the market (Eleni, 2006). Commodity exchanges can serve a variety of functions related to financing, risk management and marketing. These functions include: managing price risk, reducing counterparty risk, enhancing price transparency, reducing risks related to collateral value, certifying quality of commodities, and providing direct access to capital markets through repos (FAO, 2011). The importance of commodity exchange has an institutional benefit in reducing the transaction costs through the process of buying and selling in the market (UNCTAD, 2009). Reducing the transaction costs for the participants is the main concern for the system of commodity exchange Eleni (2009). Commodity exchanges provide transaction cost falling services, such as property rights definition and contractual enforcement, commodity measurement, and information provision (Jerry, 1991).

2.1.2. Electronic Trading

Technology plays three main roles in futures trading: providing general information such as price, volume, and news; routing orders; and matching orders. The extent of the automation generally falls between two extremes: the first would be where pit traders obtain only electronic news but trade in open outcry, while in the other, the physical trading pit is completely eliminated, and orders are entered and matched via a computer network (Tsang 1999). According to Gorham and Singh (2009) the term “electronic trading” encompasses a wide variety of systems, ranging from simple order transmission services to fully fledged trade execution facilities.

An electronic trading system is a facility that provides some or all of the following services: electronic order routing (the delivery of orders from users to the execution system), automated trade execution (the transformation of orders into trades) and electronic dissemination of pre-trade (bid/offer quotes

and depth) and post-trade information (transaction price and volume data). These systems have found wide acceptance in fixed income and foreign exchange markets in recent years and can affect the market's structure and its dynamics. In contrast to the broad definition, a narrow definition of electronic trading systems is limited to facilities that automate all aspects of the trading process, including trade execution. The architecture of fully automated systems is often complex and differences between the various systems can be quite subtle.

Electronic trading is both location-neutral and allows continuous multilateral interaction. For trading purposes, the common physical location of users is unnecessary as long as they can connect to the system. Consequently, electronic trading systems facilitate cross-border trading and cross-border alliances and mergers between trading systems largely than traditional markets. Electronic trading is scalable by increasing the capacity of the computer network. With traditional markets, the size of the floor has to be physically expanded, or the number and/or capacity of intermediaries active in a phone-based market increased a much more costly process (Gorham and Singh 2009). Thus, successful electronic trading systems can potentially exploit economies of scale and reduce operational costs largely than can traditional-markets.

Scalability also tends to widen the reach of dealers, who have access to a far wider customer base than formerly. Electronic trading integrated. Electronic trading potentially allows straight-through processing (STP), which is the seamless integration of the different parts of the trading process, starting from displaying pre-trade information and ending with risk management (Gorham 2009).

2.1.3. Export performance

Export performance can broadly be defined as the outcome of a firm's activities in export markets (Muhammed and Saleem, 2008). Cadogan (2003) define it as the firm's degree of economic achievement in its export markets. Whereas there is a growing body of literature regarding export performance, its conceptualization and subsequent operationalisation has remained a thorny issue in exporting literature (Diamantopoulos, 1999; Muhammad, 2008; Vusi and Kamilla, 2002).

Consequently, several conceptual contributions have appeared seeking to come up with dimensions and measures of export performance. Leonidou (2012) have identified that export intensity, export sales growth, export profit level, export sales volume, market share, and export profit contribution are mostly used measures of export performance. Ayse and akehurst (2013) observe that export

performance of a firm can be measured by using subjective and objective measures since research shows that both yield consistent results (Hart and Banbury, 1994; Olipia, 2006). They noted that objective measures are concerned with absolute performance indicators whereas subjective are concerned with performance of a business in relation to its major competitors or relative to a company's expectations. From these submissions, it can be deduced that export performance is a multi-dimensional concept comprising of a firm's international sales, market share, profitability, growth and export intensity in relation to its competitors.

2.1.4. Benefits of Commodity Exchange

The usefulness of a commodity exchange lies in its institutional capacity to remove or reduce the high transaction costs often faced by entities along commodity supply chains in developing countries (Crentsil, 2013). A commodity exchange reduces transaction costs by offering services at lower cost than that which participants in the commodity sectors would incur if they were acting outside an institutional framework. These can include – but are not limited to – the costs associated with finding a suitable buyer or seller, negotiating the terms and conditions of a contract, securing finance to fund the transaction, managing credit, cash and product transfers, and arbitrating disputes between contractual counterparties. Therefore, by reducing the costs incurred by the parties to a potential transaction, a commodity exchange can stimulate trade. For exchanges that offer spot trade or supporting activities, the institutional function is to facilitate trade, bringing buyers and sellers together, and imposing a framework of rules that provides the confidence to transact (Worku, 2014).

According to Paul (2011), Commodity Exchange is fundamentally designed to provide service and add value to all market players. It adds value to the market by addressing two types of risk namely contract performance risk and the risk of contract default on physical delivery or payment. Market risk is the risk of adverse unforeseen price movements or changes in supply and demand in the future. Eleni (2001) suggested that establishing market institutions such as grain exchanges reduces transaction costs (costs related to market search time, search labor and cost of holding working capital during market search). Commodity derivatives have a crucial role to play in managing price risk especially in agriculture dominated economies (Sahadevan, 2002). Properly functioning commodity exchanges can promote more efficient production, storage, marketing and Agro-processing operations, and improved overall agriculture sector performance. It is precisely because of these

benefits that transition and developing economies with large agricultural sectors have embraced commodity exchanges in recent years (Worku, 2014).

2.1.5. Commodity Exchange in Ethiopian Context

Ethiopian Commodity Exchange (ECX), established in 2008, is a new initiative for Ethiopia and the first of its kind in Africa. It is a trading platform where buyers and sellers come together to trade, assure quality delivery and payment. ECX is a state-owned public –private partnership enterprise established as a demutualized corporate entity with clear separation of ownership, membership and management and governed by a Board of Directors constituted by relevant public institutions and ECX private members operating through the sale of membership seats, which are privately owned by wholesalers, cooperatives, exporters, processors and food agencies. It is Ethiopia's latest attempt to enhance the performance of agricultural markets. Conceived as a meeting point for buyers and sellers of grains (sesame, haricot beans, maize, and wheat) and coffee, ECX seeks to organise efficient and transparent market operations and thus contribute in solving the country's longstanding problems.

Before ECX was established, agricultural markets in Ethiopia had been characterized by high costs and high risks of transaction forcing much of Ethiopia in to global isolation. With only one third of output reaching the market, only buyers and sellers tended to trade only with those having close information, to avoid the risk of being cheated. This is done on the basis of visual inspection because there was no assurance of product quality or quantity, this droves up market costs leading to high customer prices. Small-scale farmers who produce around 95% of Ethiopia's output came to the market with little information and are at the mercy of merchants in the nearest and only to the market they know; unable to negotiate better prices or reduce their market risk (Worku, 2014, Eleni, 2008). ECX is developing a new method of exchange/marketing system that coordinates better, links faster, and protects of both side of the trade.

The exchange is unique partnership of market actors, members of the exchange, and its main promoter, the government of Ethiopia, where buyers and sellers come together to trade, assured of quality, delivery and payment. ECX represents the future of Ethiopia by bringing integrity, security, and efficiency to the market there by creating opportunities for unparalleled growth in the commodity sector and linked industries such as transport and logistics, banking and financial services, and others (Zelalem, 2016). Its mission is to provide a modern efficient, transparent and reliable market platform

to serve the national development goals through adaptation of technology excellence in innovation and integrity (Eleni, 2008). Important values in ECX are to create market integrity between product, actor, and transaction, build balance between all actors, create modernization, and market transformation. The vision of ECX is to become a leading and dynamic exchange in Africa and to revolutionize Ethiopia's tradition bound agriculture.

According to Goggin (2008), coming to the case of Ethiopia, the decision taken several years ago to start a national commodity exchange had absolutely nothing to do with the current price inflation. Rather, the overriding objective then and now is to ensure a fair, orderly, and efficient marketing system, to encourage smallholder farmers to produce more for the market, to benefit domestic Agro-industry through a more efficient and reliable supply chain, and to enhance Ethiopia's export competitiveness through getting the domestic market in order. Ahmed (2017) identified three categories of problems facing the commodity market. The first category is the absence of integrated commodity marketing policy that addresses all the processes that involve transport, grading, storage and information facilities for the producer as well as for consumer (Ahmed, 2017). The second category is the absence of well-equipped institutional establishment which can provide all marketing services to all market actors. The third category is the absence of private and public partnership in the commodity market (Ahmed, 2017).

Commodity exchanges are established mainly as a response to the above problems. Thus, commodity exchanges are established among other reasons, mainly to respond to the above and related challenges. The primary objectives of any futures exchange are authentic price discovery and an efficient price risk management. The beneficiaries include those who trade in the commodities being offered in the exchange as well as those who have nothing to do with futures trading. It is because of price discovery and risk management through the existence of futures exchanges that a lot of businesses and services are able to function smoothly (Mukesh, 2014). Worku (2014) also indicated that the purpose of a commodity exchange is to provide an organized marketplace in which members can freely buy and sell various commodities in which they have an interest/sake.

The exchange itself does not operate for profit. It is just providing the facilities and ground rules for its members to trade in commodity futures and spots and for non-members also to trade by dealing through a member broker and paying a brokerage commission. The purposes served by a commodities exchange depend in part on the nature of the specific contracts that are traded (UNCTAD, 2009; Worku, 2014). Just by centralizing trade in a commodity an exchange can facilitate title transfer, price

discovery and market transparency. Transaction costs are decreased because coordination through a centralized exchange can decrease costs associated with identifying the market outlets, physically inspecting of the product quality, and finding purchaser or sellers. By decreasing transactions costs and enhancing information flows an exchange can improve returns to market agents while reducing short term price variability and spatial price dispersion. Such contracts command little capacity to address inter-annual price uncertainty. More sophisticated contracts allowing exchange in futures can enable further risk management, but such contracts require a well-developed exchange and cannot address maintain spot prices in bounds that might be desired (Worku, 2014).

Developing commodity exchanges will help to address the core institutions that the free market could not address (Ngabirano, 2014). These include among others a market information system; a system of product grading and certification; a regulatory framework and appropriate legislation; an arbitration mechanism; and, producer and trade associations. In addition, a warehouse receipts system is a very important related institution in this endeavour. A commodity exchange's success depends on the functioning of allied sectors like banking, insurance, transport, information technology services, and even inspection services. Thus, while these sectors are not strictly part of an integrated institutional development plan, they must be nonetheless engaged and involved and brought along as the exchange development proceeds.

2.1.5.1. The Development Intervention of ECX

Agricultural marketing in Ethiopia has undergone several transformations over the decades. Recent initiatives to increase values and benefits to the agricultural sector include fair trade certification by cooperatives, organic and specialty crop promotion and the trade marking and licensing initiatives that have successfully established international branding. It aims to provide trading ground for sesame haricot beans, maize, wheat and coffee. The ECX is supposed to mainly guarantee: market integrity: guaranteeing the product grade and quality and operating a system of daily clearing and settling of contracts; efficient coordination of buyers-sellers and standardized contracts; market transparency: disseminating market information in right time to all markets players; and managed risks.

2.1.5.2. Main Activities of the Organization

Trade exchange model is structured into the following major categories: Warehousing goods receiving, the Trading order matching and reconciliation, Clearing and Settlement, Market data

processing, central depository of warehouse receipts, market surveillance, data center, membership management (Eleni, 2008). Trading on the exchange is done exclusively by members or their authorized representatives. The members purchase a permanent and freely transferable trading right known as a membership seat. Members or Floor Representatives trade openly and verbally on a trading floor by "crying-out" their price. They indicate the commodity type, grade, quantity, and the price they were seeking by shouting but now trading floor is totally replacing by electronics trade. If the buyer wants to sell what he/ she buys, he/she must wait until the next trading day. i.e., it is not possible to buy and then sell the same commodity at a single trading day (Eleni, 2008). Clearing and settlement is conduct by the trader itself.

Members are required to open member pay-in/client pay-in and member payout/ client payout accounts at one of the banks from eleven negotiated banks now the bank are increased from eleven to thirteen. Thus, the exchange can withdraw money from member pay-in/client pay-in account balance and transfer it to the member payout/ client payout account. Members/ clients cannot withdraw money from pay –in account without the authorization of the exchange or trader.

Ethiopian commodity exchange (ECX) is a modern trading system based on standard crop contracts, establishes standard parameters for commodity grades, transaction, size, payment and delivery, and trading order matching, while at the same time, preserving the origins and types of crops as distinct unlike the previous. The existing auction trading system in the document is to mean the marketing system before the establishment of the ECX. By now the existing trading system is the one which currently works in ECX. Quality control is undertaken in liquoring and inspection units located in the major crop producing areas and the crop is then weighted and inventoried in ECX operated warehouses. Trade is thus on the basis of warehouse receipts issued to the depositor rather than on sample basis. ECX manages a central depository of electronic warehouse receipts, removing the risks of paper loss or fraud.

ECX quality certification is based on a modification of the existing quality grading system, with a new crop classification based on classes, types and grades of the commodity. Currently ECX has over 20 warehouse branches at different regions; namely Hawassa, Dilla, Wolyita Sodo, Gimbi, Asossa, Nekemte, Adama, Gonder, Dansha, Metema, Hummera, Abirhajira, Shiraro, Dire Dawa, Kombolcha, Bedelle, Bonga, Jimma, Bure, and Pawi. The major roles of these warehouses are arrival, sampling, coding and decoding, grading, weighing, deposit, reconciliation, and reporting. For the transaction to be applied at the exchange, primary depositors should bring their commodity to their nearby branch

so that the load shall be sampled, graded and weighted. Trade/price is determined based on the information given on the grade, the weight and the location of inventory.

Summary of services offered by ECX are:

Automated Technology - refers that an improvement in technology which increases the level of its service delivery results in customer satisfaction. Adopting new technology and making some improvements on the service delivery affects the client's satisfaction in regards to improved and up to the standard service delivery.

Grading and Certification - represents that if there is a standard grading and certificating measurements for oil seed products that will increase quality of service delivery. Having standardized measurement for grading, certificating and working based on the qualifications is contributing valuable benefits for customers in terms of improving their export performance. Based on this notion, having a standard measurement and implementation of those standards for grading and certifying oil seed products will increase the target group's performance.

Warehousing – refersthat having a good warehouse and creating a suitable warehouse management system is very important to ensure the level of customer satisfaction. It implies that warehouse issues are directly and indirectly affecting the exporter's performance. Having a good warehouse and ensuring a suitable warehouse management system could increase customer satisfaction through provision of quality ECX service.

Fair Pricing and Service Payment - implies that setting fair transaction and storage fees as well as the settlement of market pricing would affect the level of exporter's profitability and fair competition in international market arena. Transaction fee, warehouse fee and daily market price settlement fairness have valuable and significant impact on oil seed exports. The fairness of these payments would strongly affect the level of customer satisfaction through enhancing their export performance.

Getting Reports On-time - represents timely transaction report, timely issuing and delivering of the electronic and hard copy of goods received notes as well as timely issuance of delivery notice document highly affect the exporter's performance. Timely transaction report, timely issuing and delivering of the electronic and hard copy of goods received notes, timely issuance of document and any timeliness issue will affect their international trade. Therefore, providing timely report will increase the customers' satisfaction.

2.1.5.3. Agribusiness and Value Chain Activities in ECX

The ECX was started to benefit and modernize the way Ethiopia was trading its most valuable asset, its commodities. Agricultural marketing in Ethiopia had undergone several transformations over the decades. Smallholder farmers sell agricultural commodities to local merchants who intern sell to distributors and collectors; and collectors sell to suppliers who export through the ECX. Cooperative unions sell directly through ECX and capture margin that would otherwise be captured by merchants and collectors. Prior to listing on the exchange, producers must submit crops to the inspection centre for grading and consolidation through warehouses. The Ethiopia commodity Exchange (ECX) has contributed to the functioning of the value chain, with an indication that farmers are in general more satisfied at the services provided by the ECX, such as in moisture and quantity testing, transaction and assessment. Besides, farmers are also benefited from accessing market information displayed on the price ticker board in their locality. Within the international context of coffee trade, for example, quality comes high in the requirements.

The importance of an integrated supply chain that builds close links between client and the exporting company, in turn are closely in touch with the producers. Ethiopian farmers are now required to sell their coffee at designated primary markets where only certified buyers are allowed to make purchases. Similarly, coffee processors must receive approval to use designated warehouses, where their product is graded for either export or sale on the domestic market.

2.1.6. Commodity Exchange and Export Performance

One of the world's largest and oldest commodity exchanges, the Chicago Board of Trade, was established in 1848 by 82 grain traders in what was then a small Midwestern town, in conditions not too different from that of Ethiopian agriculture today, in response to a bumper harvest when farmers who went to Chicago and could not find buyers had to dump their unsold cereal in Lake Michigan. This strikes a hauntingly familiar chord for those who recall that Ethiopian farmers left grain to rot in the fields in 2002 as prices collapsed.

The challenges that US markets faced 150 years ago were not much different from what they face today, or what Ethiopian markets face today: to coordinate the exchange of grains and livestock produced across dispersed locations and dispersed producers to major markets hundreds of miles away (Tafara, 2005 cited in Eleni and Goggin, 2005). According to Ngmenipuo and Issah (2015) the

world's largest commodity exchanges are futures markets, trading futures and option contracts that are meant as risk management tools rather than tools to buy or sell the underlying commodities. In emerging markets, however, commodity exchanges can play a useful role for physical trade, including in the financing of commodity inventories. By providing a transparent, disciplined marketplace they can reduce the discovery costs of physical trade and the counterparty risks in commodity transactions.

Commodity exchange can play a major role for agricultural development as an instrument to bring efficient agricultural market by providing lower transaction cost, efficient and transparent means for price discovery, managing risks related with prices volatility and provide a forum for exchanging information about supply and demand condition. Future market provides the function of hedging and price discovery for promoting efficient production, storage for the products, marketing and Agro-processing operations for the purpose of improving the overall agricultural marketing performance (UNCTAD, 2008). In addition to the above commodity exchange helps to empower the farmers, the traders, and buyers to be actors in the exchange for their respective benefit which enables to have efficient agricultural marketing system (Issac, 2011).

As stated by UNICTAD (2009), the exchange is benefiting by bringing marketing efficiencies in commodity supply-chains by providing a platform for transparent sales. They also promote institutional developments; encourage adherence to standards, and support the development of innovative financing models, such as warehouse receipt systems. Reliable product grades and negotiable receipts help producers access finance, thereby fostering increased productivity and increased rural incomes. According to Eleni (2007), commodity exchange would build institutions from the point of grading, certifying quality, trading, issuing warehouse receipts, providing accurate market infoto all actors, ensuring payment and delivery and also enforcing contracts.

The aim of commodity exchange not eliminates traditional market around the country rather to build the informal market by adding technology and system to recognize transparency, efficiency reliability in the trading system. Therefore, ECX established with the vision of "to transform the Ethiopian economy by becoming a global market of choice" along with the mission statement "to connect all buyers and sellers in reliable, an efficient, and translucent market by connecting innovation with technology, and based on continuous fairness, commitment and learning to quality" (ECX, 2008).

The fact of having a single market mechanism to bring together the myriad buyers and sellers at any point in time effectively results in the greatest concentration of trading for a given good. This market

mechanism, such as a price bidding system or an auction system, results in what is known as price discovery, that is, the emergence of the true market-clearing price for a good at a particular point in time due to the highest possible concentration and competition among buyers and among sellers (Ngabirano, 2014). According to Jerry (2016) commodity exchanges are private institutions that facilitate trade by creating and enforcing property rights and governing contractual relationships between commodity buyers and sellers which makes the exchange very successful. Rashid (2015) also defines commodity exchange as a centralized location where buyers and sellers carry out transactions, with or without physical commodities, under a set of clearly defined rules and regulations. A commodity exchange is an institutional response, at a basic level, to the fundamental problem of achieving self-coordinating market order in the trade of agricultural products, which by their nature, are risky.

Vibrant agricultural commodity exchanges will greatly enhance the performance of Africa's agricultural sectors and contribute to overall economic development (Jayne, 2014). Commodity exchanges can reduce the costs and risks of transacting. They can provide valuable public information such as prices and volumes of trade. In many indirect ways, they can encourage the financial sector to invest in agricultural value chain development, improve farmers' access to markets, reduce marketing margins, and encourage agricultural productivity growth (Jayne, 2014). There is consensus that the most important marketing-related constraints facing Africa's farmers revolve around the following five points: (1) high production and marketing costs, leading to low profitability and a disincentive to produce for the market; (2) constrained access to credit, especially for small-scale farmers; (3) limited availability of profitable new farm technologies to adopt and use sustainably; (4) price volatility; and (5) poor market access and competitiveness conditions (Jayne, 2014).

The core objective of a commodity exchange is to create a fair, orderly and efficient system for matching supply and demand in order to enable what is called - price discovery or the true market price based on the alignment of supply and demand. To achieve this alignment, a commodity exchange can and must regulate market conduct through certain risk management instruments designed to ensure that market conduct follows the principles of a fair, orderly, and efficient marketing system. These instruments involve setting limits on trading positions, adjusting margin and other deposit requirements, and setting price circuit filters to limit price movements, among others (Eleni and Goggin, 2005).

2.2. Empirical Review and Proposed Hypotheses

The export sector in Ethiopia has been hindered by different problems. Boansi and Crentsil (2013) in their quantitative research based on secondary data on green coffee production and export of Ethiopia, concluded that the growth in the country‘s export performance has been hindered by challenges in management of price risk, problems with quality control, high transaction cost due to the extensive supply-chain and the numerous actors and processes therein, smuggling and unhealthy competition in both primary and auction markets, and by low productivity of growers‘ fields. As a solution they recommended that to enhance its competitiveness in the coffee market amidst the anticipated increase in supply-side competition in the near future, measures should be put in place to address current inefficiencies in the supply chain most importantly with management of price risk, quality control, smuggling, and transaction costs.

This could be achieved to a greater extent by reducing the gap between time of purchase of the berries/beans from buyers and the time they are auctioned, setting high quality standards for the beans taken to the auction markets and placing keen watch on those that are exported without going to the auction, ensuring payment of fairer prices to growers and appropriate transmission in times of increment, and by putting in place measures to reduce the number of intermediaries in the supply chain to help minimize unnecessary competition. In addition, appropriate investment should be made in yield-enhancing innovations.

The ECX assures all commodity market players the security they need in the market through providing a secure and reliable end-to-end system for handling, grading, and storing commodities, matching offers and bids for commodity transactions, and a risk-free payment and goods delivery system to settle transactions, while serving all fairly and efficiently (Ahmed, 2017).

Gashaw and Kibret (2018) indicated that before the establishment of ECX, agricultural markets in Ethiopia had been characterized by high costs and high risks of transaction forcing much of Ethiopia in to global isolation. With only one third of output reaching the market, only buyers and sellers tended to trade only with those they knew, to avoid the risk of being cheated. They mentioned that ECX developed a new method of exchange; a marketing system that coordinates better, links faster, and protects of both side of the trade. In a data collected mainly through interview and personal observations to assess the impact of ECX in the coffee and sesame value chains, the study found out that ECX have positive impact on the existing marketing system and for the development of

agricultural value chains in Ethiopia, through creating a more reliable way to connect buyers and sellers in an efficient way to discover market prices, a way to level the playing platform by providing market information to all. However, the study found out that there are still problems which are faced by all actors in value chain as infrastructural problems, legality problem, and exploitation of farmers at the farm gate, marketing imperfections, systematic rigidity and traceability issue.

Rashid (2015), based on case studies and reviewing literatures, examined the validity of the popular claims about ECX that improving price discovery, linking smallholders to markets, reducing transactions costs, and increasing agricultural export earnings are some of the benefits of ECX. The study finds out that while ECX has contributed to improving some aspects of the markets (e.g., t+1 payment, development of grades and standard for selected commodities, and warehouse receipt systems) for exportable commodities, it found no evidence to support the popular claims about linking smallholders to markets, increasing export earnings, and other developmental impacts. However, Ahmed (2017) in his study on the ECX to identify and analyze the challenges and growth prospects associated with ECX and its contribution for the economic development of the country found out that ECX failed to provide accurate and reliable market/marketing information at the right time and place to the traders. Lack of experienced expertise in the area is one of the main problems of traders to trade their commodities by having the deep analysis with respect to changes on the market structure, foreign exchange rates, demand, supply, competition, and so on.

The study revealed that higher transaction cost, price fluctuation, difficulty of network access, lack of adequate warehouses, poor recording and management system of the warehouses, expensive membership seat fee and, non-transparent quality grading and sampling system, bias, and corruption were amongst the forefront bottlenecks/constraints to the development and success of ECX. The data were collected using survey questionnaires and interview from members of the commodity exchange.

A similar study conducted by Worku (2016) on the contribution of ECX to exporters of agricultural commodities indicated that the grading and sampling system of the company has a problem of bias, lack of knowledge and equipment; there is distrust between the seller, buyer and the exchange; there is high penalty cost imposed by ECX for delaying of withdrawing the commodities on time; problem of intolerable fee for membership seat and also there is a problem of dispute resolution mechanism. The study has also indicated other infrastructural challenges including transportation, warehouses, electricity and telecommunications.

The study also found out that warehouse quality problem occurs as a result of inefficient infrastructure and inadequate physical infrastructure caused higher transaction costs which directly affect the profitability of exporters. The research also related lack of having well-constructed infrastructure to delivery risk. Tamirat (2013) in his quantitative and qualitative study found out that to make the coffee market works for all, the ECX and policy makers work on the practicality of introducing future commodity market as the existing spot trading without the possibility to enable market risk management through offering futures contracts has limited chances of sustainability impacts.

Mulugeta (2008) have studied the challenge and prospects of liquidity on ECX, and he find that the situation of sharply rise of domestic and global market price, the high dependence of Ethiopian Agriculture on the rainfall condition which might create shortages of supply in case of drought, the frequent rejection of commodities due to failure to meet the quality standards and the tendency to use out-dated closing price as reference price to determine price limits are the main challenges.

Betelehem (2009) tried to assess the challenge of ECX for the year of 2008 and 2009 using qualitative technique data obtained from ECX officers. Her finding indicates the lack of liquidity and current risk management of ECX did not cover adequately the scope and importance of the commodity price risk problem. Besides the risk management techniques (specially the mainly used market surveillance) fails to provide ways for assessing, monitoring, and managing the price risks faced by individual producers, producer groups, banks, trading companies, and other firms operating in commodity markets. Information dissemination, quality standards and assurances are the proposed way of escaping the problem.

Dessalaw (2011) examined the existing prospects to commodity exchange and to explore the challenges faced by the Ethiopian commodity exchange using the qualitative research approach. He finding indicate that small size of domestic commodity market, weak physical and communication infrastructure, a lack of legal and regulatory environments, and the likelihood of policy interventions are the major challenge of ECX. Investment in transport should be given priority to achieve the goals of risk management and reduced transaction costs.

The study by Gebrekiros (2011), studied about trading in Commodity Exchange and Challenges of Participants: The Case of Ethiopian Commodity Exchange using sample of 80 participant in ECX, He employed descriptive statistics and logistic regression technique and found that time of participation, limited membership seat and membership seat fee were found to be highly significant

variables and were found to be the most determines factors the hinder ECX participants to participate in to the full membership category.

The study by Wendemagegn (2014) has tried to analyze coffee market chain in the case of Dale district of Southern Ethiopia. The analysis of market structure indicates that the volume of coffee traded in the area was concentrated in the hand of few traders who controlled the bigger share of the market. This clearly implies that the coffee market in the area is non-competitive. He also depicted the major entry barriers into the coffee market such that shortage of capital, licensing only for specific business activities and presence of informal traders are obstacles for most traders. He tried to disclose that the coffee marketing channel in the study area is relatively short; the existence of informal traders in both rural and urban areas discouraged the legal/licensed traders. Their also have poor access for timely and reliable market price information.

Study by Mohammed (2015) on ECX market prospect and challenge in focus by employing descriptive research method and simple linear regression using 128 sample members of ECX. His study indicates that the challenges associated with commodity marketing include the potential for market abuse, increased cost of trading, liquidity issues, quality problem and unfair competition among traders. The study by Andersson (2015) indicated that the effect of warehouse access on price dispersion may not be linear, and that the downward pressure on dispersion may grow over time. They also presented an increase in the availability of adequate and timely market information should reduce search costs, while an improvement in the legal framework and reduced risk of defaults should reduce costs associated with transaction. The reduced transfer costs are likely to reduce price dispersion between exported coffees from different regions, as well as price dispersion between the export price and local retail price within regions.

Muluken (2016) studied the contribution of Ethiopian commodity exchange for promoting export of agricultural product using descriptive research approach for 148 sample respondents. Their results indicate that ECX provide market price information, grading the quality of goods, provide infrastructure for exporter like warehouse, electricity and telecommunication. Even though ECX provide benefit for exporter, ECX has a problem in trained manpower and technology which needs improvement for a complete operation.

Bizualem (2018) studied the role of ECX in crop value chain development in Ethiopia and indicate that ECX provide a service of warehouse service, laboratory test, grading, trading platform/auction

service, provision of communication links; and market related training services for agents. Even though ECX create a more reliable way to connect buyers and sellers in an efficient way to discover market prices, a way to level the playing platform by providing market information to all, there are still problems which are faced by all actors in value chain, Such as infrastructural problems.

Similarly, Mekdes (2019) studied Determinants of market efficiency of Ethiopian Commodity Exchange (ECX) for the case of Sesame trade. She employed explanatory type of research for data obtained from trader and employee in ECX. Marketing risk, marketing cost, product quality, information transmission media, transaction risk, payment method and market efficiency are the main determinants and direct relation with market efficiency.

The study by Sisay (2019) also studied factor affecting the market efficiency of ECX using data obtained from 170 member of ECX. He used linear regression technique for analysis and find that market information, regulation, clearing and settlement, warehouse and also trading system of the company are positively and significantly affect the market efficiency of ECX.

Fetene (2019) studied the role of ECX in stimulating agricultural commodity exports with the case of export coffee using 118 coffee exporters. He applied descriptive statistics and linear regression model to identify role of ECX. His findings of descriptive statistics of the independent variables showed that facilitation of physical trade dimension scored the highest rating with a mean value of 3.83 while the storage and grading dimension scored the least mean value of 2.86. The regression result indicated that storage and grading, market information provision and market development dimensions of ECX's roles had a significant positive influence on export performance of coffee exporters.

Based on the empirical literature review, the following hypotheses are proposed:

H1 – Automated technology adaption has significant effect on oil-seed exporters' performance

H2 – Staff competence has significant effect on oil-seed exporters' performance

H3 – Warehousing facility has significant effect on oil-seed exporters' performance

H4 – Grade certification has significant effect on oil-seed exporters' performance

H5–Pricing/Service Charges has significant effect on oil-seed exporters' performance

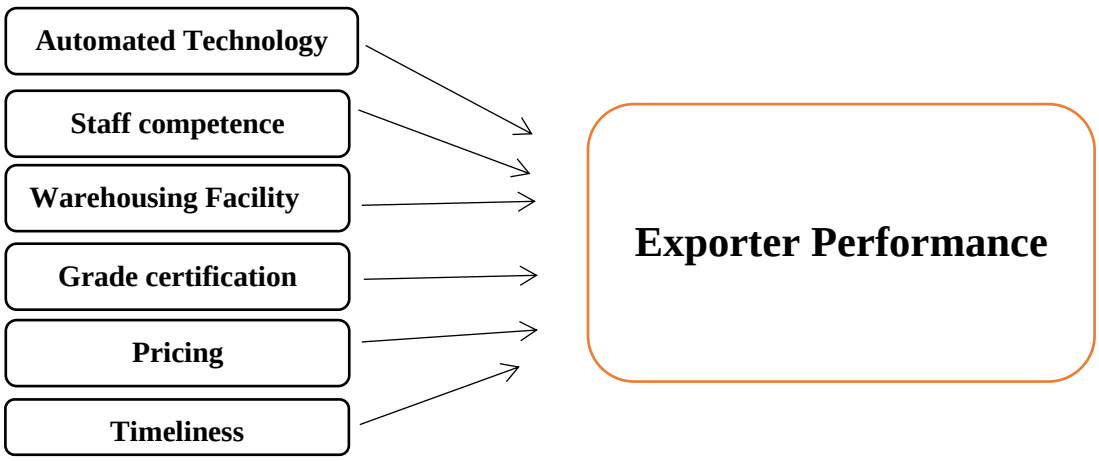
H6 – Timeliness of service delivery has significant effect on oil-seed exporters' performance

2.3. Conceptual Framework

A conceptual framework is a structure which the researcher believes can best explain the natural progression of the phenomenon to be studied. It is arranged in a logical structure to aid provide a picture or visual display of how ideas in a study relate to one another (Grant and Osanloo, 2014). The conceptual framework for this thesis will be based on UNCTAD (2009) and Tamirat (2013) work. The impact assessment approach was applied in this thesis in a way that first the basic functions of commodity exchanges stated in literatures are identified and then based on the expected benefits arising from each of these functions; the potential impact or influences is argued.

Oil-seed Exporter's performance, referring the related literature reviewed, the five core functions that ECX offers to the exporters are namely automated technology adaption, grade certification, staff competence, warehousing, information timeliness and service charges. These five core functions are considered as independent variables that affect the overall exporter's performance (the dependent variable). Therefore, in the Ethiopian context, these five functions are being served by the ECX have relationship with the performance of oil seed exporters. Thus, this study sought to investigate individual effect of the aforementioned independent variables on the exporter's performance taking Oil-seed exporters in Addis Ababa as a case.

The conceptual or research framework depicts that each ECX service functions (automated technology adaption, staff competence, warehousing facility, grade certification, service charges and information timeliness) has relationship with export performance.



(Source: UNCTAD, 2009; Tamirat, 2013)

Figure 1. Conceptual Framework of the Study

CHAPTER THREE

3. RESEARCH METHODOLOGY

This chapter concentrates on the scope of methodological procedures employed in this study. It includes research design, sample design procedures, data collection instruments, data collection procedures, data analysis techniques, reliability and validity test of date collection instrument and ethical considerations.

3.1. Research Design

In order to address the research gap identified and meet the specific objectives, explanatory research design was employed. Explanatory design seeks to establish cause-and-effect relationships. Its primary purpose is to determine how events occur and which ones may influence particular outcomes (Kothari, 2004). They are characterized by research hypotheses that specify the nature and direction of the relationships between or among variables being studied. Thus, explanatory research is an appropriate research design for the reason that this study tried to investigate the factors affecting Ethiopian Commodity Exchange (ECX) service and their effect on performance of oil-seed exporters i.e., to study the relation between the stated dependent and independent variables of the study.

3.2. Research Approach

There is a tendency to divide research into qualitative and quantitative based on type of data utilized as the criterion for classification. Quantitative was applied in this study to get insight to the nuances of the process for best selection of methodology tools that fitted best to the respective stages undertaken along the research process. It is a systematic and scientific investigation of quantitative properties and their relationships. Its objective is to develop and employ mathematical models, theories and hypotheses pertaining to natural phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of an attribute (Abbey, 2009). In light of the explanatory research undertaken descriptive and inferential analysis was employed. The former is used to describe respondents' demographic characteristics and their perceptions towards the factors affecting Ethiopian Commodity Exchange (ECX) service quality technology modesty, grading system,

warehousing facility, staff's competency, service charges and timeliness; and their effect on performance of oil-seed exporters; while the latter is about to analyze the relationship of independent and dependent variables.

3.3. Population

Target or study population is the whole community of people or organizations that the researcher or surveyor is interested in drawing conclusions. Population can also be defined as all people or items that one wishes to understand while sampling is the process of selecting segment of the population for investigation (Kothari, 2003). According to ECX customer database (2020), the total population of Ethiopian oil-seed exporters who have currently enrolled in the Exchange is about 450 export companies. As the entire population was relatively large to cover within a limited period of time, representing the total population in reasonable number of respondents makes the research reliable. Thus, this study considered a total of 450 oil-seed exporter companies whose office are located in Addis Ababa entitled to participate and to collect the necessary data.

3.4. Sampling Procedure

There are two sampling strategies in use to select the targeted respondents from the sample frame. There are probability or non-probability methods of sampling (Creswell, 2009). The former applies to random (equal chance) selection, while the latter is subjective and relies on the researcher's decision or reasoning. Probability sampling strategy is preferable to selecting respondents from the target sample population in order to make it easier to generalize for the fact that the list of all the exporters is readily available on hand. Thus, due to their homogeneity of the companies, simple random sampling approach was therefore used and found to be more efficient in contacting each respondent before the measured sample size is reached. The study considered a total of 450 oil-seed exporters residing in the capital city.

3.5. Sample Size

Determination of a representative sample size is a critical and important issue as larger sample size may waste time and other vital resources unnecessarily. While samples that are too small may lead to inaccurate results. According to Saunders (2007) researchers normally work to a 95% level of certainty. Sampling is the process of selecting a number of study units from a defined study population

(Zikmund, 2010). It is economical to take representative sample for the intended investigation when conducting census is unrealistic. Since the number of the population is known, simplified formula for proportion sample size is determined employing the following formula as it stated by Yamane (1967). Therefore, the formula to determine the sample size is:

$$n = \frac{N}{1+N(e^2)} = \frac{450}{1+(450*0.05^2)} = 212$$

Where: N -Designates total number of house owners; e - designates maximum variability or margin of error 5% (0.05); and n- designates computed sample size.

Therefore, the targeted sample size was a total of 212 oil-seed exporters (owners, representatives, agents, and managers) were contacted accordingly.

3.6. Source of Data

Depending on the objective and the research questions, mainly primary data source was used for this study. Primary data consists of all data obtained during the study that may be specifically relevant to the purpose of the study. The primary data was derived from the responses of targeted respondents gave in the self-administered questionnaire prepared. Since there are no secondary sources (directly or indirectly related to the purpose), secondary data was not used for analysis.

3.7. Data Collection Instruments

This research was primarily carried out using quantitative data. Assessing and gathering data was not be not an easy task, as the researcher tries to gather data from various respondents residing in different sub-urban areas of Addis Ababa as well as diasporas abroad. In addition to the local language (Amharic), an English-language questionnaire was provided as a choice with questions that are important and helpful in extracting the opinions of the respondents regarding their perception of factors affecting the service delivery and their effects on their organizational performance.

Quantitative data on factors affecting ECX service delivery attributes and their effect on performance of the exporters were collected through a close-ended questionnaire adapted from Muluken and Abebe's (2016) study. A self-administered structured questionnaire containing closed-ended questions was prepared along with a range of literature reviews relevant to the objectives of the research. There are three sections of the questionnaire. The first part comprises questions about the demographic characteristics of the respondents; the second part involves questions about the factors

affecting ECX service delivery; and the third part refers to questions about their overall view of organizational/ exporters/ performance. Many studies use a single scale to calculate ordinal or interval data using scales 1-to-5 or 1-to-7, where 1-very dissatisfied and 5-or 7-very satisfied. However, this analysis follows a five-scale method to quantify the study variables referred to above.

3.8. Data Analysis Techniques and Presentations

Both descriptive and inferential statistics were used to analyze the quantitative data that was gathered through structured questionnaire. All the variables were coded and entered into the SPSS to analyze data obtained through questionnaires. Descriptive statistics is used to describe the usefulness of the data set and examine relationships between variables. In order to describe the data, preliminary descriptive statistics such as frequency, percentages, mean scores and standard deviation was computed. To view the internal consistency of the scale items, Cronbach's coefficients (alpha) was computed. Multiple regression analysis was performed using the six factors that affect the service delivery of ECX as independent variables and organizational/ exporter's performance as dependent variable. The basic aim was to saw the extent to which their performance is affected by overall service delivery of ECX (R^2 value), the regression coefficient (Beta coefficient) and the P-values for the significance of each relationship. Correlation coefficients were also used to quantitatively describe the strength of the association between the stated variables. According to Hair (2016) the Spearman correlation coefficient measures the degree of linear association between two variables. It varies between -1.00 to +1.00, with 0 representing absolutely no associate between the two variables.

Empirical Model - The thesis uses multiple linear regression research model to evaluate hypotheses derived from empirical reviews. Regression analysis is a statistical method for evaluating the mathematical model representing the relation between variables that can be used for the purposes of predicting the value of the outcome variable, given the measures of the independent variable (Kothari, 2004). Multiple linear regression calculates the coefficients or relative importance of the individual predictors in the multiple linear equation, with one or more independent variables that better predict the value of the dependent variable. Multiple linear regressions were made to define the relationship and to evaluate the most dominant factors that affect service delivery and their effects on exporter's performance. In order to assess the relation between the variables, a mathematical formula for representing the multi-regression analysis is shown as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$$

Where: Y= Exporter Performance; X_1 = Automated technology adaption; X_2= Staff competence; X_3= Warehousing facility; X_4= Grade certification; X_5= Service Charges; X_6= Timeliness; e = error term, β_0 = constant, term $\beta_{1, 2, 3, 4, 5,6}$= coefficients.

3.9. Scale Validity and Reliability Test

Validity is the degree to which the data collection process correctly calculates what it is supposed to quantify (Saunders, 2009). It is necessary for the pilot to test the questionnaire in order to ensure its validity, and the minimum number of questionnaires to be checked by the pilot should not be less than 30. The pre-testing was carried out by sending 30 questionnaires to the stated exporters who won't be included in this study. The pretest questionnaires were used to check the suitability of the questions, the language (style of expression) and the suggestions implemented to enhance the questionnaire. Finally, after having made all the requisite corrections, it was reasonable to distribute them to the targeted respondents accordingly.

Reliability is the ability of a research instrument to yield reliable findings after repeated studies (Mugenda, 2003). It deals with the level to which the measuring instrument includes variable errors that differ from observation to observation at any one measurement attempt or at the same measurement instrument. The use of Cronbach's Coefficient to calculate the reliability of the instrument allows the strength of the items used in the questionnaire to be calculated in such a way that the scale between 0.7 and 1.0 implies a good accuracy of the item included in the questionnaire.

3.10. Ethical Consideration

Prior to the start of this research program, informed consent was obtained from the management of the selected organizations. The approval for this study was obtained from St. Mary's University student support office and consent of each participant /sampling unit prior to the commencement of data collection was obtained. The researcher undertook to protect the rights of the respondents by ensuring that none of the respondents were marked during the study or subsequent thesis and that the respondents were chosen to participate without coercion.

CHAPTER FOUR

4. DATA PRESENTATION, ANALYSIS AND INTERPRETATION

This chapter presents the data presentations, analysis, and interpretations in relation to investigate factors affecting Ethiopian commodity exchange (ECX) service delivery and their effect on oil-seed exporter's performance in Addis Ababa. In order to meet the objectives of the study, the data that were gathered from the primary source using questionnaire was analyzed, presented, and interpreted in this section.

Once the primary data was collected, prior to the analysis, the questionnaire was reviewed and it was to certify that if questionnaires were filled appropriately. Any incomplete or missing responses were rejected from the subsequent analysis. The steps which stated in the data analysis section such as coding, eliminating coding and data entry error, known as "clearing the data", Rubin & Babbie (2010) was performed in this research.

Out of the 212 distributed questionnaires,201 were returned. The returned questionnaires were checked for errors; as a result,14 incomplete questionnaires were identified and discarded. Finally, 187 were found to be usable and used for final analysis. Thus, 88% response rate had been obtained.

4.1. General Information about the Respondents

Demographic factors are very important indicators of performance in any organization and the basis for research questionnaire turnout. Accordingly, the following demographic characteristics and general information about the respondents were summarized and described in the table 1 below.

Table 1. General Information about the Respondents

Sex of the Respondents			
		Frequency	Percent
Valid	Male	144	77.0
	Female	43	23.0
	Total	187	100.0

Source: SPSS output, 2021

With regards to the first demographic distribution of sex of the respondents, 77% of them were male and 23% of them were female. This shows that the majority of the respondents were male and one can generalize that the majority of ECX's customers were male.

Table 2. Age of the Respondents

Age of the Respondents			
		Frequency	Percent
Valid	18 - 30	13	7.0
	30-45	36	19.3
	46-60	138	73.8
	Total	187	100.0

Source: SPSS output, 2021

When it comes to the age of the respondents, as shown in table above, the majority of the respondents fall under the range between 46-60 ages which accounted for 73.8%, followed by the age group of 30-45 which accounted for 19.3%. The remaining 7% of the respondents were found between the age categories of below 30 years. This reveals that the majority of the respondents/ECX's customers were middle aged as this period of age is beyond young adulthood. Therefore, from this result, the researcher understood that these middle age customers need to be succeeded by the youngest/adult hood customers as the majority is aged.

Table 3. Education level of the respondent

Educational Level of the Respondents			
		Frequency	Percent
Valid	Certificate	102	54.5
	Diploma	65	34.8
	Degree	14	7.5
	Masters and Above	6	3.2
	Total	187	100.0

Source: SPSS output, 2021

With respect to the educational status of the respondents, 54.5% of the respondents were certificate holders, 34.8 were diploma, 7.5% of them were first degree and the remaining 3.2% were the holder of master/second degree and above. Therefore, this result implies that the majority of the respondents were not overcome a high level of education and as a result they may hardly evaluate and identify factors affecting the service delivery.

Table 4. For how long have you been a customer of ECX?

		Frequency	Percent
Valid	< 3 years	51	27.3
	3-6 years	89	47.6
	7-10 years	44	23.5
	> 10 years	3	1.6
	Total	187	100.0

Source: SPSS output, 2021

To know how many years, they were in service with ECX, the respondents were asked to assert the length service year. As a result, the majority (47.6%) of the respondents indicated that they had a working experience of 3-6 years in the ECX. Whereas, 27.3%, 23.5% and 1.6% of them had service experience of less than 3 years, 7-10 years and above 10 years respectively. Thus, the result indicated that most of the respondents were familiar with the company and they can perfectly evaluate the service delivery factors and quality thereon. The study also revealed that there number of new entrants are on the rising stage as the number of customers whose service experience year is below 3 years likely the second highest in percent.

4.2. Validity Test

For the purpose of assuring the validity of the research instrument, all the variables were adopted from previous research works; the researcher conducted a pilot test of the questionnaire among the customers of the ECX and distributed 30 questionnaires to gather feedbacks towards enhancing the validity of the instruments in line with content validity. Then, the researcher acquired and incorporated the opinions of the oil-seed exporters of EXC's customers and advisors in order to enhance the research instrument validity. Finally, after having made all the requisite corrections, it was reasonable to distribute them to the targeted respondents accordingly.

4.3. Reliability Test

Reliability is one of the major criteria for evaluating research instruments. Reliability measures the internal consistency of the model. According to Malhotra, et al. (2007), reliability is the extent to which a measurement reproduces consistent results when the process of measurement is repeated. Cronbach's alpha is a coefficient of reliability used to measure the internal consistency of the scale; it represented a number between 0 and 1. According to Sekaran (2003), the closer the reliability

coefficient gets to 1.0, the better it is, and those values over 0.80 are considered as good. Those values in the 0.70 are considered as acceptable and that reliability value less than 0.60 is considered being poor.

Therefore, as indicated in the table 5 below, the overall Cronbach's alpha result of the 33 items is ***0.976*** which is higher than the minimum alpha value set as acceptable (i.e. 0.70) and near to the maximum (1.0) that can be considered as better. In addition, each dimension's Cronbach's alpha result is higher than the minimum required. Hence, this shows that the research instrument has good internal consistency.

The Cronbach's alpha of each scale for the data is presented below in table 5.

Table 5. Cronbach's Alpha Test for Reliability

Reliability Statistics		
Variables	**Cronbach's Alpha (α)**	**N of Items**
Automated Technology Adaption	.852	4
Staff Competence	.825	5
Warehousing Facility	.764	5
Grading and Certification	.840	4
Pricing/Service charge	.882	4
Timeliness	.909	6
Export Performance	.872	5
Overall Reliability	**.976**	**33**

Source: SPSS output, 2021

4.3.1. Descriptive Analysis of the Variables of the Study

The descriptive analysis is used to look at the data collected and described that information. The table below presented the mean and the standard deviation of the independent variables and the dependent variable from respondents' observation. Mean value provides the idea about the central tendency of the values of a variable. Standard deviation gives the idea about the dispersion of the values of a variable from its mean value.

Table 6. Descriptive Statistics of Automated Technology Adaption

Descriptive Statistics			
Automated Technology Adaption Dimension	**N**	**Mean**	**Std. Dev.**
I believe that the report which is distributed through electronic methods is easily accessible.	187	2.70	.854
I am happy for using modern electronic trading service.	187	2.43	.802
ECX is enhancing its service by adopting new technology.	187	2.66	1.010
I believe that the trading process goes smoothly after adaption of electronic trade.	187	2.83	1.072
Valid N (listwise)	187		

Source: SPSS output, 2021

The respondents were requested whether their level of satisfaction with regards to automated technology adaption. The first of the ECX service delivery dimension is automated technology adaption which is further divided into four attributes. The mean scores of automated technology adaption for all the five attributes range from 2.43 to 2.83 and for average mean for overall automated technology adaption has a mean score of 2.73 which is below the midpoint of3. Thus, the result implies as per the observation of the respondents, they were not satisfied by the automated technology adaption of the ECX.

Table 7. Descriptive Statistics of Staff competency

Descriptive Statistics			
Staff Competency Dimension	**N**	**Mean**	**SD**
ECX provides relevant training to staffs before launching new technologies.	187	2.79	.860
Employees at ECX are knowledgeable to solve my inquiries.	187	2.49	.838
Employees at ECX are responsive.	187	2.55	.911
Employees at ECX go extra miles to help customers when system is down.	187	2.49	.838
Employees at ECX are always eager to help me whenever I face any problems.	187	2.55	.763
Valid N (listwise)	187		

Source: SPSS output, 2021

The above statement is designed to know whether the oil-seed exporters were satisfied with the staff competency level of the ECX employees' or not. As depicted in the above table 5 items were used to measure the staff competency dimension. As depicted in the above table, the mean of the items ranges from 2.49 to 2.79. Likewise, the average mean of overall staff competency is 2.51 which is below the midpoint. Therefore, the respondents i.e., the oil-seeds exporters were unhappy with the level of ECX employees' competency.

Table 8. Descriptive Statistics of Grading and certification

Descriptive Statistics			
Grading and certification Dimension	N	Mean	SD
The weighting service meets the standards which are set by the authority of Ethiopian Standardization Agency.	187	2.47	.940
Grading and certification service meet the standards which are set by Ethiopian Coffee and Tea Authority.	187	2.54	.917
ECX avoids oil seed wastage because of better storage facilities.	187	2.49	.838
ECX introduces better/ scientific storage hardware and practices.	187	3.02	.193
Oil seed's export quality has improved because of ECX.	187	2.49	.912
Valid N (listwise)	187		

Source: SPSS output, 2021

With respect to grading and certification, the respondents were asked whether they were satisfied with the grading and certification standard or not. Accordingly, as depicted in the above table, 5 items were used to measure the grading and certification standard of ECX. The mean result of all items, except for items 4 which states that 'ECX introduces better/ scientific storage hardware and practices' were below the midpoint. Likewise, the overall mean result of the dimension is 2.59. Thus, the result implies that the respondents were not happy or dissatisfied with the grading and certification standardization of the ECX.

The respondents were requested whether their level of satisfaction with regards to the warehousing facility of ECX. The mean scores of warehousing facility for all the four attributes range from 2.40 to 2.58 and for average mean for overall warehousing facility has a mean score of 2.57 which is below the midpoint of3. Thus, the result implies as per the observation of the respondents, they were not satisfied by the warehousing facility of the ECX.

Table 9. Descriptive Statistics of Warehousing Facility

Descriptive Statistics			
Warehousing Facility Dimension	N	Mean	SD
The stores layout is well organized for oilseeds product.	187	2.40	.953
Warehouse locations are convenient for your outlying employees.	187	2.54	.917
I receive products from the warehouse immediately after you submit the delivery notice document.	187	2.49	.838
Warehouse management is working well on maintaining the quality of received products.	187	2.58	.860
Valid N (listwise)	187		

Source: SPSS output, 2021

Table 10. Descriptive Statistics of Pricing/service charge

Descriptive Statistics			
Pricing Dimension	N	Mean	SD
The transaction fee is fair compared to other exchange traders	187	2.49	.912
The warehousing / storage fee fair or affordable	187	2.55	.911
I think market pricing settlement is fair	187	2.49	.838
ECX's price reflects the fundamentals of the local and international coffee industry	187	2.58	.860
Valid N (listwise)	187		

Source: SPSS output, 2021

With respect to pricing/service charge, the respondents were asked whether they were satisfied with the pricing or not. Accordingly, as depicted in the above table, four items were used to measure whether the pricing/service charge of the ECX affect the exporters' performance or not. The mean results of all items were ranges from 2.49 to 2.58 which were below the midpoint. Likewise, the overall mean result of the dimension is 2.63. Thus, the result implies that the respondents were not happy or dissatisfied with the pricing/service charge of the ECX.

Table 11. Descriptive Statistics of Timeliness of service delivery

Descriptive Statistics			
Timeliness Dimension	N	Mean	SD
There is a timely information exchange between the head office and the outlying warehousing officers.	187	2.59	.976
The trading operation department provides you with a timely transaction report.	187	2.53	.906
The trading department starts trading on time.	187	2.51	.870
Electronic goods received note is issued and delivered on time.	187	2.49	.912
The printed copy of goods received note is issued and delivered on time.	187	2.55	.911
Central depository issues the delivery notice document on time.	187	2.66	1.01
Valid N (listwise)	187		

Source: SPSS output, 2021

The respondents were requested whether their level of satisfaction with regards to the timeliness of service delivery of ECX. The mean scores of timeliness of service delivery for all the four attributes range from 2.49 to 2.66 and for average mean for overall timeliness of service delivery n has a mean score of 2.62 which is below the midpoint of3. Thus, the result implies as per the observation of the respondents, they were not satisfied by the timeliness of service delivery of the ECX.

Table 12. Summary of Descriptive statistics of the variables

Descriptive Statistics			
	N	Mean	Std. Deviation
Automated Technology Adaption	187	2.73	.852
Staff competency	187	2.51	.698
Warehousing Facility	187	2.57	.647
Grading and Certification	187	2.59	.800
Pricing/Service Charge	187	2.63	.795
Timeliness	187	2.62	.849
Exporter Performance	187	2.56	.790
Valid N (listwise)	187		

Source: SPSS output, 2021

Table 12 indicates the mean and standard deviation of both dependent and independent variables considered for this study. As we can see from the above table, the average values of all the variables are below the mid-point. This indicates that the respondents were unhappy with regards to the service delivery of the ECX. Among the variables, automated technology adaption has relatively the highest mean value of 2.73 which could be taken as highly influencing the ECX service delivery and has an effect on the Oil-Seed Exporters' performance. Among the variables, the next high mean values among the independent variables are pricing/service charge with mean value of 2.63 and timeliness with mean values of 2.62. They have small differences in mean values from exporters' performance which have also highly impacting the level of export performance.

4.4. Correlation Analysis

Correlation coefficients can be used to quantitatively describe the strength of the association between two variables. According to Hair et al. (2002, p.568) the Spearman correlation coefficient measures the degree of linear association between two variables. It varies between –1.00 and +1.00, with 0 representing absolutely no association between two variables, and –1.00 or +1.00 representing a perfect link between two variables. The level of association between the service quality dimension variables will be stronger if the correlation coefficient is higher or vice versa. The correlation coefficient can be either positive or negative, depending on the direction of the relationship between two variables.

Table 13. Correlation Matrix

Correlations							
	Technology	Staff comp.	Warehousing	Grading	Pricing	Timeliness	Ex. Per.
Technology	1						
Staff comp.	.595**	1					
Warehousing	.535**	.692**	1				
Grading	.609**	.795**	.686**	1			
Pricing	.620**	.714**	.680**	.712**	1		
Timeliness	.703**	.717**	.687**	.780**	.799**	1	
Exporter Per.	.681**	.830**	.715**	.878**	.927**	.893**	1
**. Correlation is significant at the 0.01 level (2-tailed). N=187							

Source: SPSS output, 2021

In this study, to check the interrelationship between variables, Spearman Correlation has been used. As per the guideline suggested by Field (2005), the strength of relationship 0.1-0.29 shows week relationship; 0.3-0.49 is moderate; >0.5 shows the strong relationship between the two variables.

Hence, as revealed in the above table, the correlation matrix of all of the independent variables was positively and strongly correlated with the dependent variable (exporters' performance). Among the variables, the first highest strong coefficient of correlation in this research is between pricing/service charge and exporters' performance ($r=0.927$, $p \leq 0.01$). It connotes that there is a strong, positive, and significant relationship between pricing and exporters' performance. The second highest strong coefficient of correlation is with the timelines of service delivery which has strong positive and significant with exporters' performance ($r=0.893$, $p \leq 0.01$). Besides, grading and certification, staff competency, warehousing facility, and automated technology adaption dimensions had also strong positive relationship and significant with exporters' performance as provided by correlation coefficient of 0.878, 0.830, 0.715, and 0.681 respectively. Therefore, from the result the researcher can conclude that all the ECX service deliveries are highly determining the Oil-seed Exporters' Performance in Addis Ababa City.

4.5. The Assumptions for Testing Regression Analysis

The test of assumptions should be done because violations of the assumptions affect consequent use of multivariate statistical methods (Hair et al., 2006). There are many assumptions to consider but the researcher focused on the major ones that are easily tested with SPSS.

4.5.1. Multi-co linearity

In regression, multi-colinearity occurs when independent variables in the regression model are more highly correlated with each other than with the dependent variable. Hair et al. (2006) argued that correlation coefficient below 0.90 may not cause serious multi-collinearity problem. But also Tabachnick&Fidell(1996) suggests that the correlation coefficient should not be 0.7 for a better inference from the study. Correlations were examined by means of the bivariate correlationmeasure in SPSS and all the coefficients of correlation are below 0.8.Multi-collinearity can also be detected using tolerance value and variance inflator factor (VIF) value. Thus, as revealed from table below, the multi-collinearity does not exist among all the independent variables provided that the tolerance

value of all the independent variables are greater than 0.1 and the VIF values of all the independent variables are less than 10.

Table 14. Collinearity Statistics

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Automated Technology Adaption	.497	2.010
	Staff competency	.276	3.624
	Warehousing Facility	.459	2.178
	Grading and certification	.144	6.922
	Pricing/service charge	.122	8.230
	Timeliness	.134	7.438
a. Dependent Variable: The Exporters' Performance			

Source: SPSS output, 2021

4.5.2. Test of Normality

Test of normality is another assumption to be tested before running regression. The normal distribution is detected based on skewness and kurtosis statistics.

Table 15. Normality of Distribution Using Descriptive Statistics (Skewness and Kurtosis)

Descriptive Statistics					
	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
Automated Technology Adaption	187	.345	.178	-.411	.354
Staff competency	187	.450	.178	-.232	.354
Warehousing Facility	187	.350	.178	-.361	.354
Grading and Certification	187	.295	.178	-.287	.354
Pricing/Service Charge	187	.373	.178	-.067	.354
Timeliness	187	.337	.178	-.325	.354
The Exporters' Performance	187	.375	.178	.152	.354
Valid N (listwise)	187				

As proposed by George and Mallery (2010), the acceptable range for normality for both statistics is between -2 and +2. Therefore, as depicted in table 10 below, all variables 'values of kurtosis and skewnessare almost within the acceptable range for normality. So, this implies that all items show close to normal distribution considering the criteria of skewness and kurtosis values between -2 and 2. Therefore, the data used in this study could be assumed to be normally distributed.

In addition to the Skewedness and Kurtosis, the normality probability plots were plotted to assess normality. The P-P plots showed in figure 2 were approximately a straight line instead of a curve.

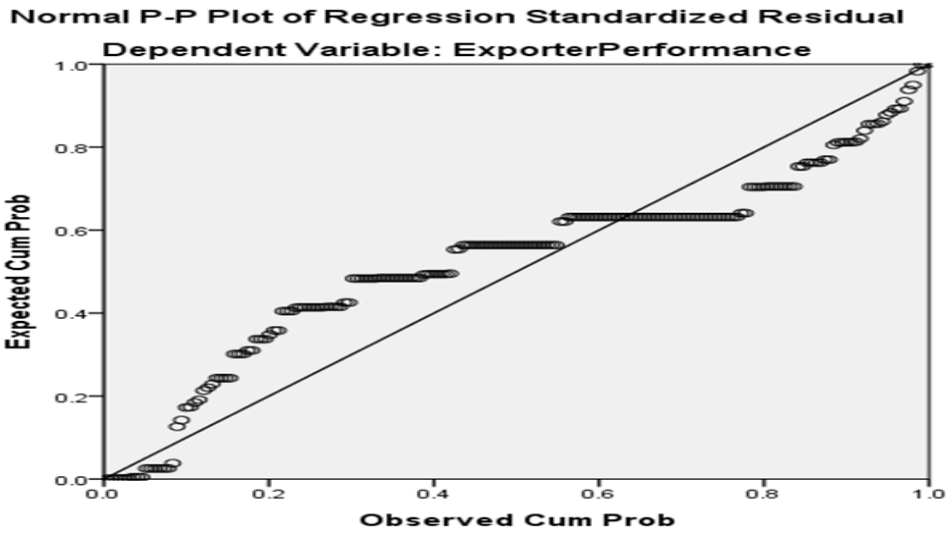


Figure 2. Normal Point Plot of Standardized Residuals

Source: SPSS output, 2021

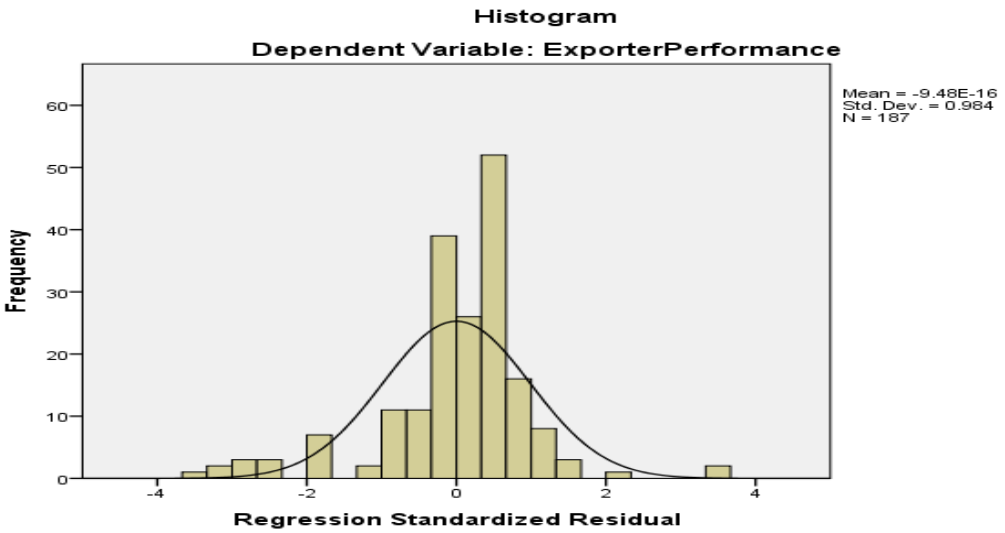


Figure 3. Frequency Distribution of Standardized Residuals

4.5.3. No Auto-correlation/Independent of Errors

Field (2005) suggested that for any two observations the residual terms should be uncorrelated (or independent). This eventuality is sometimes described as a lack of autocorrelation. This assumption can be tested with the Durbin–Watson test, which tests for serial correlations between errors. Specifically, it tests whether adjacent residuals are correlated. The test statistic can vary between 0 and 4 with a value of 2 meaning that the residuals are uncorrelated. Therefore, as in this study the result 2.118 is almost closed to 2, it can be confirmed.

4.5.4. Linearity

The linearity assumption can easily be checked using scatterplots or residual plots: plots of the residuals vs. either the predicted values of the dependent variable or against (one of) the independent variable(s). The scatter plots of standardized residuals versus the fitted values for the regression models were visually inspected from figure 4.

Figure 4: Frequency Distribution of Standardized Residuals

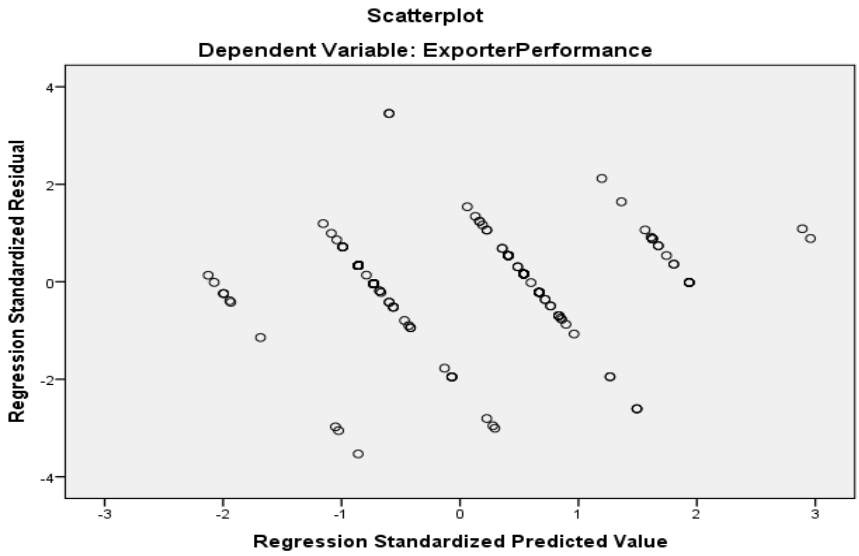


Figure 4. Frequency Distribution of Standardized Residuals

4.6. Multiple Linear Regression Analysis

Multiple linear regressions were used in order to determine the explanatory power of the independent variables (automated technology adaptation, staff competency, warehousing facility, grading & certification, pricing/service charge, and timeliness) on dependent variable (exporters' performance). Table 16 shows the model summary of the regression analysis.

Table 16. Model summary

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.947[a]	.896	.893	.258	2.118
a. Predictors: (Constant), Timeliness, Warehousing, Technology, Staff competency, Grading, Pricing					
b. Dependent Variable: Exporters' Performance					

The value of R indicates the value of the multiple correlation coefficients between the independent and the dependent variable, with a range from 0 to 1, a larger value indicating a larger correlation and 1 representing an equation that perfectly predicts the observed value. Thus, from the model summary (R=.947[a]) indicated that, the linear combination of the six independent variables strongly predicted the exporters' performance.

Likewise, the value of the R Square indicates the proportion of variance that can be explained in the dependent variable by the linear combination of the independent variables. In another word, R^2 is a measure of how much of the variability in the outcome is accounted for by the predictors. Therefore, as indicated in the above table, the linear combination of independent variables predictors' i.e., automated technology adaptation, staff competency, warehousing facility, grading & certification, pricing/service charge, and timeliness explains 89.6% of the variance in exporters' performance and the remaining 9.4% is explained by extraneous variables, which have not been included in this regression model.

Table 17. ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	104.135	6	17.356	259.787	.000[b]
	Residual	12.025	180	.067		
	Total	116.160	186			
a. Dependent Variable: Exporters' Performance						
b. Predictors: (Constant), Timeliness, Warehousing, Technology, Staff competency, Grading, Pricing						

Source: SPSS output, 2021

The ANOVA table shows the overall significance/ acceptability of the model from a statistical perspective. As indicated in the above table, the p-value is less < 0.05 i.e. 0.000which indicates the variation explained by the model is not due to chance. So, it shows that the acceptability of the model.

Table 18. Regression analysis of independent and dependent variable

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.178	.085		2.103	.037
	Automated Technology	.098	.032	.105	3.100	.002
	Staff competency	.136	.052	.120	2.625	.009
	Warehousing Facility	.097	.043	.079	2.245	.026
	Grading and certification	.046	.062	.047	.740	.460
	Pricing/Service charge	.545	.068	.549	7.973	.000
	Timeliness	.124	.061	.133	2.031	.044
a. Dependent Variable: Oil-Seeds Exporters' Performance						

Source: SPSS output, 2021

The above table revealed that the relationship between dependent and independent variables. Accordingly, it shows the constant beta value (β) and the p-value of the variables to examine the significance of the hypothesis. The significance level of each variable (P-value) for all independent variables except for grading and certification were below 0.05, and their standardized coefficients are 0.105, 0.120, 0.079, 0.047, 0.549, and 1.33 respectively. The p-value of all the independent variables below 0.05 implies that the independent variables have a significant relationship with the dependent variable (Exporters' performance),

Likewise, the value of the standardized Beta value indicates the relationship/the effect of each predictor on the exporters' performance. In this study, the result of Beta value of all the six predictors had a positive value, which indicates positive effect. Therefore, the hypotheses for the five variables were confirmed as automated technology adaption, staff competency, warehousing facility, pricing, and timeliness showed a positively significant effect on exporters' performance of Oil-seed, while grading certification was insignificant.

Based on these results, the regression equation that predicts exporters' performance based on the linear combination of as automated technology adaption, staff competency, warehousing facility, pricing, grading certification, and timeliness is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + e$$

Where:

Y= Exporter Performance; X_1 = Automated technology adaption; X_2= Staff competence; X_3= Warehousing facility; X_4= Grade certification; X_5= Service Charges; X_6= Timeliness; e = error term, β_0 = constant, term $\beta_{1, 2, 3, 4, 5, 6}$= coefficients.

Therefore, the regression equation for this study derives as:

$$Y = 0.178 + 0.105X_1 + 0.120X_2 + 0.079X_3 + 0.047X_4 + 0.549X_5 + +0.133X_6 + e$$

From the Multiple Linear Regression equation, the interpretation as follows:

- The constant 0.178 shows the effect of automated technology adaptation, staff competency, warehousing facility, grading certification, pricing/service charge, timeliness on exporter performance. It means that, in a condition where all independent variables are constant (zero), exporter performance as dependent variable is predicted to be 0.178.
- In condition where other variables are constant, if automated technology adaption increases by one unit exporter performance is predicted to be increased by 0.105 units.
- In condition where other variables are constant if staff competency increases by one unit, exporter performance is predicted to be increased by 0.025 units.
- In condition where other variables are constant if warehousing facility increases by one unit, exporter performance is predicted to be increased by 0.079 units.
- In condition where other variables are constant if grading certification increases by one unit, exporter performance is predicted to be increased by 0.049 units but the result is insignificant in the case of oil-seed exporters in Addis Ababa.
- In condition where other variables are constant if pricing/service charge increases by one unit, exporter performance is predicted to be increased by 0.549 units.
- In condition where other variables are constant if timeliness of service delivery increases by one unit, exporter performance is predicted to be increased by 0.133 units.

4.7. Discussions of the Result

This study investigates the factors affecting ECX service delivery and their influences on organizational performance in the case of Oil-seed exporters in Addis Ababa. Using well-established measurement scales, the researcher tested the effect of automated technology adaptation, staff competency, warehousing facility, grading certification, pricing/service charge, timeliness on the exporters' performance.

The result of this study revealed that pricing/service charge is the strongest predictor or has the most significant effect on the oil-seed exporters' performance among the variables. It was found to have the significant positive effect on exporters' performance. This implies that setting fair transaction and storage fees as well as the settlement of market pricing would affect the level of exporter's profitability and fair competition in international market arena. Transaction fee, warehouse fee and daily market price settlement fairness have valuable and significant impact on oil seed exports. The fairness of these payments would strongly affect the level of customer satisfaction through enhancing their export performance.

Furthermore, timeliness of service delivery was also found to have a significant positive effect on exporters' performance. This implies that the timely transaction report, timely issuing and delivering of the electronic and hard copy of goods received notes as well as timely issuance of delivery notice document highly affect the exporter's performance. Timely transaction report, issuing and delivering of the electronic notes, and any other timeliness issue will affect their international trade. Therefore, providing timely report will increase the customers' satisfaction; which in turn increase the performance mainly the profitability of the exporters.

The study result showed staff competency is also an important indicator of exporters' performance. Staff competency is found to have a positive significant effect on the exporters' performance. This implies that, if relevant training to employees is provided, staff have knowledgeable to solve inquiries of the exporters', responsive, go extra miles to help customers, eager to help customers whenever they face any problems; the exporters' performance will be increased.

As per the finding of the study automated technology adaption has also positive significant effect on the exporters' performance. This implies that an improvement in technology which increases the level

of its service delivery results in customer satisfaction. Adopting new technology and making some improvements on the service delivery affects the client's satisfaction in regards to improved and up to the standard service delivery. Therefore, this in turn increases the export sales, facilitate the physical trade, facilitate in providing the reliable information, develop the market, and increase the profitability of the oil-seed exporters' performance.

Warehousing has also found to have relatively the least significant positive effect on exporters' performance. This indicates that having a good warehouse and creating a suitable warehouse management system is very important to ensure the level of customer satisfaction. This finding is in line with Etsehiwot's (2019) study on the effects of ECX service quality on user's satisfaction. She found out that there is no chance to be given for the client if he claims quality problem that is occurred while receiving the product from the warehouse. Besides, no possibility of appealing and judging by the third party if there is discrepancies regarding quality issues (Aynalem, 2017). In general, for multi-million-dollar transactions, the exporter has no choice to check and confirm the product quality in advance by his way but to accept the quality of the product as stated on the platform in Ethiopian ECX platform context. It implies that warehouse issues are directly and indirectly affecting the exporter's performance. Having a good warehouse and ensuring a suitable warehouse management system could increase customer satisfaction through provision of quality ECX service.

The researcher found that there is positive insignificant relationship exists between Grading and certification and exporters' performance. It is known that if there is a standard grading and certificating measurements for oil seed products that will increase quality of service delivery. Having standardized measurement for grading, certificating and working based on the qualifications is contributing valuable benefits for customers in terms of improving their export performance. Based on this notion, having a standard measurement and implementation of those standards for grading and certifying oil seed products will increase the target group's performance.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter presents the major findings of the study, conclusions, recommendations, limitations and direction for future research. Accordingly, the first section of this chapter described the findings of the study that present a brief summary, and the conclusion drawn from it, followed by the next section covering the recommendations, limitations and suggestions of the direction for future studies.

5.1. Summary of Major Findings

Out of the total respondents, the majority of them were male which accounted for 77%, and most of them aged between 46-60 years (73.8%). With regards to the level of education, the majority (54.5%) of them had certificate. Similarly,47.6% of them had working experience of 3-6 years with ECX.

The correlation analysis had shown that, the six independent variables (automated technology adaptation, staff competency, warehousing facility, grading certification, pricing/service charge, timeliness of service delivery) have strong correlation with the dependent variable (Exporters' performance) at 0.01 p-value 2-tailed, by scoring a Spearman Correlation Coefficient "R-value" of 0.681**, 0.830**, 0.715**, 0.878**, 0.927**, and, 0.893**respectively.

From the regression analysis of six independent variables with the exporters' performance, all independent variables except for grading certification contribute to statistically significant at p-value < 0.05. The score of the coefficient correlation determination (R^2) was 0.896 which means 89.6%. In this study, the Beta weight score indicated that the effect of pricing/service charge is greater than that of the other independent variables. The specified regression equation for this study is as follows:

$$Y = 0.178 + 0.105X_1 + 0.120X_2 + 0.079X_3 + 0.047X_4 + 0.549X_5 + +0.133X_6 + e$$

5.2. Conclusions

The purpose of this study is to investigate the factors affecting ECX service delivery and their influences on organizational performance in the case of Oil-seed exporters in Addis Ababa city. The Oil-seed Exporter's performance, referring the related literature reviewed, the six core functions that

ECX offers to the exporters are namely automated technology adaption, grade certification, staff competence, warehousing, information timeliness and service charges. These six core functions are considered as independent variables that affect the overall exporter's performance (the dependent variable). Therefore, in the Ethiopian context, these functions are being served by the ECX have relationship with the performance of oil seed exporters. Thus, this study sought to investigate individual effect of the aforementioned independent variables on the exporter's performance taking Oil-seed exporters in Addis Ababa as a case.

The researcher undertook the appropriate scientific study with the objective to examine the effect of these factors on the exporters' performance. Automated technology adaptation, staff competency, warehousing facility, grading and certification, pricing/service charge, and timeliness were tested to determine if they made any contribution to the explained variance of exporters' performance. Based on this, the following conclusions are drawn out of the research findings of this study.

According to the R^2 value, the factors considered in this study contribute much to the exporters' performance of oilseeds exporters. 89.6% and 89.3% of the variability of overall oil-seeds exporters' performance is explained by six of the determinants of the ECX service delivery considered in this study for the sample and population respectively. The researcher believes rest 9.4% of the variability of overall exporters' performance not explained in this study.

The study found that all the independent variables except grading and certification have positive significant effect on the exporters' performance in Addis Ababa city. Each one has its unique contribution and effect on the exporters' performance of the oil-seed exporters. The results of this study found support for five of the hypotheses. Automated technology adaptation, staff competency, warehousing facility, pricing/service charge, and timeliness. One of the hypotheses is not supported regarding grading and certification.

Each of the variables had varying effects on the Exporters' performance (dependent variable), with the pricing/service charge providing the greatest contribution for the exporters' performance followed by timeliness, staff competency, automated technology adaption, warehousing facility, and grading and certification. In addition, the finding shows pricing/service charge is the most relevant in ECX service delivery for oil-seed exporters' who are looking to works in ECX.

Oil-seeds Exporters' performance is proportionately depending and go with the pricing and timeliness of service delivery at most. Therefore, from this result one can conclude that, when the ECX service

delivery exhibit higher pricing, timeliness, staff capacity, automate technology, warehouse facility, it will lead to higher export performance of oil-seeds exporters.

5.3. Recommendations

Based on the findings of the study, the research forwarded the following recommendations. Among these:

- From the findings, pricing/service charge is the most relevant in displaying an exporter performance by Oil-seed exporters. Therefore, ECX shall take in place efficient price discovery mechanism and work to protect unnecessary shortages, gluts and other pricing distortions by creating better price signals.
- Besides, the regulators of oil-seeds marketing and export should control those market actors who create artificial shortages, gluts, and other unnecessary price distortions that don't reflect the realities of the market domestically and internationally.
- The result revealed that timeliness of service delivery is the second important factor to affect an exporters' performance. Thus, in order to increase the timeliness of service delivery, it is better for the ECX to consider market information all over the world to meet the information interests of the exporters.
- The ECX shall provide complete marketing information about the price, the quality and the quantity of the commodity to the ECX customers.
- In order to automate the service of the organization, increase client satisfaction, and increase the exporters' performance, the ECX shall invest on the automation of the technology.
- The exporter had no choice to check and confirm the product quality in advance by his way and forced to accept the quality of the product as stated on the platform. But often the quality wasn't as expected (delivered inferior quality). Besides, no possibility of appealing and judging by the third party. Thus, ECX should implement a system which handles exporter's complaints neutrally as well as create access to check the quality by the exporter physically.
- ECX should achieve and maintain effective and transparent grading and certification services in order to improve the oil-seed exporters' confidence on this regard.
- ECX should focus on building or renting better and scientific storage hardware and introduce better warehouse management practices in order to avoid Oil-seeds wastage and quality deterioration during storage of Oil-seeds.

- In order to increase the staff and exporters competency, ECX shall provide continuous capacity building and training tailored to oil-seeds exporter as well as to its employees.
- Particularly the ECX has to give the training and capacity building for the quality grading specialists in order to upgrade their knowledge and skill.

5.4. Limitations and Suggestions for Future Research

This thesis has certain limitations. Hence, it is important to reflect on some of the limitations of this study. First, it was conducted using a sample from Oil-seed exporters that found in Addis Ababa City. Its generalization to oil-seed exporters found in another region is difficult. Therefore, future studies should select oil-seed exporters found in the other regions.

Oil-seed exporters were the major focus of the present study, however, the understanding and additional views of all types of exporters of commodity could be explored in future studies. Therefore, the researcher suggested that similar study can be further extended to other exporters of commodity.

This study was also cross-sectional and explanatory in nature. Future researchers could undertake more in-depth longitudinal study on other commodities exporter members of ECX.

This thesis was conducted from the perspective of oil-seed exporters/ECX customers only. However, this study did not explore the perspective of the company i.e. ECX employees. Therefore, for future it is recommendable that a similar study will be undertaken using the perspective of the ECX employees and make a comparative analysis.

As the research design the researcher was employed only quantitative method. Thus, the researcher suggested that a mixed research design i.e. both qualitative and quantitative shall be used since qualitative study might give more detailed information in the future.

There are a number of variables that affect EXC service delivery. Hence, for future research, the researcher suggested that the number of research variables used to predict EXC service delivery and that affect exporters' performance shall be added.

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Annex 1: Survey Questionnaire

To be filled by Oil-seed export customers of Ethiopian Commodity Exchange (ECX)

Dear respondent,

The purpose of this survey questionnaire is to gather data which will be used to assess the role of Ethiopian Commodity Exchange (ECX) service practices and their effects on oil-seed exporter performance. This information will be used only for the research to be under taken in fulfilling in Masters of marketing management at St. University, School of Graduates. Therefore, I kindly request your support to fill this questionnaire openly and I confirm you that all information you provided to this study will not be used for other purposes or will not be disclosed.

Thank you in advance for your cooperation and timely response!

Please contact me for any questions, suggestions and comments you might have.

Tadele +251911235647

Email – tadnice4@gmail.com

Part One: Background Information

1 Sex ☐ Male ☐ Female

2 Age (Years) ☐<30 ☐ 30 - 45 ☐ 45 - 60 ☐> 60

3 Educational level ☐ Certificate ☐ Diploma ☐Degree ☐ Masters & above

4 For how long you have been a customer of ECX

☐< 3 years ☐ 3 - 6 years ☐ 7 – 10 years ☐> 10 years

Part Two: Dimensions of ECX Service Delivery

Please, put your answers by marking a tick mark "√" for the following questions on the five points. Based on the questions, rank from 5 to 1.

No	Description	Likert Scale				
	Automated Technology Adaption	**1**	**2**	**3**	**4**	**5**
1	I believe that the report which is distributed through electronic methods is easily accessible					
2	I am happy for using modern electronic trading service					
3	ECX is enhancing its service by adopting new technology.					
4	I believe that the trading process goes smoothly after adaption of electronic trade					
	Staff Competence					
5	ECX provides relevant training to employees before launching new technologies.					
6	Employees at ECX are knowledgeable to solve my inquiries					
7	Employees at ECX are responsive					
8	Employees at ECX go extra miles to help customers when system is down					
9	Employees at ECX are always eager to help me whenever I face any problems					
	Warehousing					
10	The weighting service meet the standards which are set by the authority of Ethiopian Standardization Agency					
11	The Grading and certification service meet the standards which are set by Ethiopian Coffee and Tea Authority?					
12	ECX avoids oil seed wastage because of better storage facilities.					
13	ECX introduces better/ scientific storage hardware and practices					
14	Oil seed's export quality has improved because of ECX					
	Grading and Certification					
15	The stores layout is well organized for coffee product.					
16	Warehouse locations are convenient for your outlying employees.					
17	I receive products from the warehouse immediately after you submit the delivery notice document.					
18	Warehouse management is working well on maintaining the quality of received products.					
	Pricing/ Service Charge					
19	The transaction fee is fair compared to other exchange traders					

20	The warehousing / storage fee fair or affordable					
21	I think market pricing settlement is fair					
22	ECX's price reflects the fundamentals of the local and international coffee industry					
	Timeliness					
23	I believe that there is a timely information exchange between the head office and the outlying warehousing officers?					
24	The trading operation department provides you with a timely transaction report.					
25	The trading department starts trading on time.					
26	Electronic goods received note is issued and delivered on time.					
27	The printed copy of goods received note is issued and delivered on time.					
28	Central depository issues the delivery notice document on time.					
	Export Sales Performance					
29	ECX helps me increase export sale by facilitating physical trade.					
30	The storage and grading service of ECX has improved my export performance.					
31	ECX helps me increase export sale through its market development roles.					
32	The competitive oil seed market created by ECX increased my export sales.					
33	ECX helps me increase export by providing reliable market information.					

Thank You Very Much!!!