



**ST. MARY'S UNIVERSITY**  
**SCHOOL OF GRADUATE STUDIES**  
**DEPARTMENT OF MARKETING MANAGEMENT**  
**ELECTRONIC TRANSACTION MODEL PRACTICE IN ETHIOPIA**  
**COMMODITY TRADING**

**BY**

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**ADDIS ABABA**



**ELECTRONIC TRANSACTION MODEL PRACTICE IN ETHIOPIA  
COMMODITY TRADING.**

**BY**

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**ADDIS ABABA**

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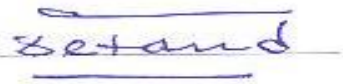
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**This thesis has been submitted for examination with my approval as the university advisor.**

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## **Declaration**

**I, imanibrahim, hereby declare that this research paper entitled “electronic transaction model practice in Ethiopia commodity trading” is my original work and has not been used by other for any other requirements in any other university and all sources of information in the study have been appropriately acknowledged.**

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## **ACRONYMS**

**ECX:** Ethiopian commodity exchange

**ECMC:** Ethiopian coffee Marketing Corporation

**GMA:** Grain marketing agency

**CBOT:** Chicago Board of Trade

**OECD:** Organization for economic co-operation and development

**PACDEX:** Pan-African commodities and derivative exchange

**KACE:** Kenya agriculture commodity exchange

**RECOTIS:** Regional commodity trade & information system

**NCPB:** National cereals produce board

**EAGC:** Eastern African grain council

**KCPT:** Kenya coffee planters & traders

**UCE:** Uganda commodity exchange

**ACEs:** Area cooperative enterprise

**ET:** electronic trading

**API:** Application programming interface

**CME:** Chicago mercantile exchange

**MCP:** Member client position

**DN:** delivery notice

**NOR:** Net obligation report

# Contents

ACKNOWLEDGEMENTS .....	i
ACRONYMS .....	ii
List of tables .....	vi
Abstract.....	vii
<b>Chapter one</b> .....	<b>1</b>
1.1 Background of the study .....	1
1.2 Statement of the problem .....	3
1.3 Research questions .....	4
1.4 Objective of the study.....	4
1.5 Hypothesis of the study .....	5
1.6 Significance of the study .....	5
1.7 Scope of the study .....	6
1.8 Organization of the paper.....	6
<b>CHAPTER TWO</b> .....	<b>7</b>
2.1 Theoretical literature .....	7
2.1.1 General concepts on commodity and exchanges.....	7
2.1.2 Experiences in commodity exchange in neighboring East African countries .....	8
2.1.3 Electronic trading.....	11
2.1.4 Emergency of electronic trading.....	12
2.1.5 Electronic exchange and trading benefits .....	13
2.1.5.1 Globalization .....	14
2.1.5.2 Market Access.....	14
2.1.5.3 Transparency.....	14
2.1.5.4 Surge in volume .....	15
2.1.5.5 Availability of data .....	15
2.1.6 Challenges of electronic trade .....	15
2.1.6.1 Dependency on each other.....	16
2.1.6.2 Technology glitch .....	16



2.1.6.3 Market volatility.....	16
2.1.7 Problems with transition .....	17
2.2 Empirical review.....	17
2.3 Conceptual frame work .....	18
2.3.1Online Trading –Independent Variable .....	19
2.3.1.1 Perceived ease of use: .....	20
2.3.1.2 Trust:.....	20
2.3.1.3 Perceived usefulness: .....	20
2.3.1.4 Perceived Risk: .....	21
2.3.2 Dependent Variables .....	21
<b>CHAPTER THREE.....</b>	<b>24</b>
3.1 Research Methodology .....	24
3.1.1 Research Design .....	24
3.2. Sampling design .....	24
3.2.1. Population of the study .....	24
3.2.2. Sampling Technique .....	24
3.2.3. Sample Size Determination.....	25
3.3. Data source .....	25
3.3.1 Primary Data .....	25
3.3.2 Secondary Data .....	26
3.4. Method of data Gathering.....	26
3.5. Data Analysis and Interpretation .....	26
<b>CHAPTER FOUR .....</b>	<b>28</b>
<b>4. DATA ANALYSIS AND INTERPRETATION.....</b>	<b>28</b>
4.1 Data Cleaning and Coding .....	28
4.2 Descriptive Statistics .....	28
4.2.1 Demographic Characteristics of Gender, Age and Educational Background Respondents.	29
4.3 Test of Reliability and Validity.....	30
4.4 Descriptive Statistics of Variables.....	31

4.4.1 Descriptive Statistics of perceived ease of use .....	31
4.4.2 Descriptive Statistics of Trust .....	32
4.4.3 Descriptive Statistics of perceived usefulness .....	33
4.4.4 Descriptive Statistics of perceived risk .....	34
4.4.5 Descriptive Statistics of ECX operational practice .....	35
4.5 Inferential Statistics .....	36
4.5.1 Correlation Analysis .....	36
4.6 Tests for Linear Regression Model Assumptions .....	38
4.6.1 Normality Test Assumption .....	38
4.6.2. Multicollinearity Test Assumption.....	39
Table 11Table 4.11 Multicollinearity Test Assumption .....	39
4.7 Regression Analysis.....	40
4.7.1 Multiple Regressions.....	40
4.8 Hypothesis Testing and Interpretation of Results .....	42
<b>CHAPTER FIVE</b> .....	44
5. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS .....	44
5.1 Summary of Findings.....	44
5.2 Conclusion.....	45
5.3 Recommendation.....	46
<b>REFERENCE:</b> .....	47
<b>APPENDIXE</b> .....	49

## List of tables

Table 4.1 Demographic characteristic of gender, membership, Educational Background and working year of Respondents.....	29
Table 4.2 below shows the value of alpha for each dimension as a whole also it shows the measure has internal consistency.....	30
Table 4.3 descriptive statistics dimension.....	31
Table 4.4 Descriptive Statistics of perceived ease of use .....	32
Table 4.5 Trust Descriptive Statistics .....	33
Table 4.6 Descriptive Statistics of perceived usefulness .....	34
Table 4.7 perceived risk Descriptive Statistics .....	35
Table 4.8 Descriptive Statistics of ECX operational practice.....	36
Table 4.9 spareman’s correlation .....	37
Table 4.10 Table of normality .....	38
Table 4.11 Multicollinearity Test Assumption .....	39
Table 4.12 Model Summary .....	40
Table 4.13 ANOVA Analysis .....	40
Table 4.14 Coefficient Matrix.....	41
Table 4.15 Hypothesis Testing.....	42

## ***Abstract***

*The objective of this study was to assess the use of the online trading on ECX operational practice. To cope up the fast growing of technology and to avoid the possible obstacles that the market is facing also to encompass the remote areas, ECX has implemented an integrated online trading system that has been believed to improve the level of overall ECX operational practice. This study used descriptive research design. A sample selected by a convenience sampling method and data was collected through a structured questionnaire intending to identify their perception towards the online trading. Out of 279 structured questionnaires distributed to respondents 200 were collected, which maintained 71.6% response rate. The study was limited to only Central Addis Ababa Zone trading center. It was found that all factors of online trading positively correlated to ECX operational practice. Perceived use is the strongest factor affecting the ECX operational practice. The Regression analysis predicted the extent that the adaption of online trading has significant effect on ECX operational practices. This study confirmed empirically that the adaption of online trading has an impact on ECX operational practice and hence, it is recommended to enhance its model by constantly upgrading the system and training the users, built a mechanisms that helps the organization eliminate the collusion more effectively.*

# Chapter one

## 1.1 Background of the study

Ethiopia's economy is highly dependent on agriculture, where 84% of the population is employed in this sector. This justifies why agriculture is widely regarded as the back bone of Ethiopian economy. It plays a key function both in the development of the nation as well as in the wellbeing of its people. The sector accounts for over half of gross domestic product (GDP) and 83.9% of exports. Even though agricultural sector is wide and has important role in economy, it has not yet contributed to the economy as much as it's potential. Many reasons can be mentioned for this result from government aspect, from farmers, buyers, exporters and all other market participants. Since early 1990s, several African countries started designing market-oriented agricultural development policies as part of their national development policy framework. This was the beginning of African economies experiencing dramatic changes in export commodity marketing, including shocks associated with price instability (Akiyama, 2001; Gemch and Struthers, 2007; Rashid, 2010). The case of Ethiopia export of commodity market, in particular has not meet the full potential of agriculture sectors. This necessitates Ethiopian Commodity exporting to be established in the form of institutional commodity exchange.

The country under gone various commodity marketing principles and models. In different regimes, different systems have been enacted. The currently operating Ethiopian Commodity Exchange (ECX) is the development over the proceeding commodity marketing like Ethiopian Coffee Marketing Corporation (ECMC) and Grain Marketing Agency (GMA) (ECX, 2011). These institutions have operated under different modalities including grain collection center, out crying model, trading platform, and recently electronic transaction. These dynamics of grain marketing in the country is not without challenges. Each experienced advantages and disadvantages with respect to the satisfaction of the members involved in the system. In the commodity market there are transaction costs such as; discovering what the relevant prices are, the costs of negotiating and concluding a separate contract for each exchange transaction (Coase November 1937). To improve the situation of high transactional cost, commodity exchange meets the requirement as a solution. Effectiveness of establishing new market relations has to be

comparable to the costs of supporting long-term relationships, or the cost of similar transactions within the large companies (Julia and Eduard, 2011). According to Bose (2009), Commodity exchanges are organized markets which serve as a means for risk management and reduce transaction costs for both buyers and sellers. By the same token, commodity derivative exchanges provide a platform where traders and investors from various parts of the world can participate in the hedging and price discovery of any listed commodity (Ibid).

The Ethiopian Commodity Exchange (ECX) was established over the preceding commodity marketing in 2008 to revolutionize Ethiopian agriculture and transform the economy through a dynamic, efficient and transparent marketing system that serves all and essentially turns commodity into assets (ECX 2013). The attempt is that, properly implemented and regulated, commodity exchanges can contribute greatly to the achievement of a country's economic and developmental goals, while strengthening the bargaining power of marginalized groups (such as small farmers). The establishment of ECX was to perform four key functions in the commodity marketing. These includes, reducing transaction cost, ensuring price transparency and price discovery by creating a secure and reliable system for handling, grading and storing services for commodity transactions, promote risk-free payments and Provide a goods delivery system to settle transactions (Gebre-Madhin, 2006; Alemu and Meijerink, 2010).

A movement from the open outcry model to electronic trading in the ECX system has taken place in recent years. Open outcry model is a model that is undertaken by single traders (seller and buyer/buyers) by using trading pit. The electronic trading system has been driven by technological advances that have advantages with respect to speed, cost, transparency and functionality that trade typically offers over the established "open outcry" form of trading, which brings traders together on a trading floor. Besides, the electronic trading has the potential to increase the efficiency, transparency, and liquidity of the commodity markets by increasing the speed of transactions and lowering transaction costs. Despite the value additions and merits an electronic transaction has on commodity marketing, these advantages and also demerits were not the agenda of researchers. Effectiveness of and associated challenges of the electronic trading system has appears as an important area of research.

Even if the new trading system has launched no adequate researches addressed its benefits and challenges from different aspects (G/Kiros G/Medhin, 2011). The concept transaction in the

current context of ECX implies both commodity delivery and cash transfer in the system. Therefore, intention of this study is to relate the proceeding transaction models with the current electronic model of transaction and see the outcome of each model on efficiency as well as satisfaction of trading members in the platform. Members view on the different forms and models of transaction, their satisfaction scaling and the economic effect of the electronic model will also be key component of the study. Direct marketers, sellers, buyers, farmers and all other market participants' will be the data source for the study. The study also covers ECX operations related to warehouse management, Information dissemination techniques, common defaults and default handling strategies.

## **1.2 Statement of the problem**

Agricultural commodity exchanges are typically associated with efficient and sophisticated markets and marketing systems that provides valuable benefits including price discovery, access to market information, market contracting (for minimizing price risks), reduced transaction costs and insurance against opportunistic trading partners (Jayne, 2014)

It was in connection with the benefits stated by Jayne (2014) that the Ethiopian commodity exchange was established in 2008 Proclamation No. 550/2007. Creating efficient, transparent, and organized marketing system that serves the interest of the partners by promoting active market participation was the key area of focus for the exchange according to the proclamation (Proclamation No.550/2007). In order to attain these objectives, ECX has gone through lots of changes and practice. The institution started with an open outcry transaction model. More than 200 different spot contracts were traded by ECX members or their authorized representatives through open outcry trading system since establishment ([www.ecx.com.et](http://www.ecx.com.et)). In order to improve the efficiency of commodity transaction, ECX designed an electronic trading platform as an improvement over an open outcry model.

The e-Trade Platform was officially launched on October, 2015. This e-transaction model has enabled the exchange to trade nearly 5,000 times more transactions than its predecessor model "An Open Outcry model" also called a "Pit Trading" platform. The e-TRADE platform has been operational since 2015 dramatically increasing trade efficiency, transparency and accessibility ([TheWorldfolio.com](http://TheWorldfolio.com)). According to the reports, the total volume of traded commodity and the

trade value of millions are efficient performance indicators for the e-transaction model. The same is said to benefit a wide range of farmers by increasing the number and type of commodities for e-transaction. (Vasu, 2018)

Despite the benefits of the e-transaction with respect to volume and value of traded commodities, the model has not been without challenges and shortcomings. The limitations of the model with respect to delivering the required benefit to all participating members of the exchange was assumed to disfavor some or more of the stakeholders in the system. Most studies conducted in areas of ECX focused on the scope, efficiency, trade volume, traded value and member's interaction in the exchange system. The comparative advantage of one transaction model over the preceding, its benefits to members and the potential challenges the transaction model has been facing was not sufficiently articulated by earlier studies. This particular study was therefore designed attempting to fill the research gap in ECX with emphases to E-trading model of the platform and assess the platform if it can address.

### **1.3 Research questions**

In order to address the set objectives of the study, the research follows the following key research questions that were thought to guide the study. These include;

1. What is the effect of perceived ease of use of online trading on ECX operational practice?
2. What is the effect of trust in using online trading on ECX operational practice?
3. What is the effect of perceived usefulness in online trading on ECX operational practice?
4. What is the effect of perceived risk on ECX operational practice?

### **1.4 Objective of the study**

#### **General objective**

The general objective of the study was to assess Electronic transaction model practice in Ethiopia commodity trading.

#### **Specific objective**

- To describe the effect of perceived ease of use of E-Trading model on ECX operational practices.



- To explore the contribution of trust E-trading has made for ECX operational practice.
- To assess the effect of perceived usefulness on ECX operational practice
- To analyze the relationship and effect of perceive risk on ECX operational practice.

## **1.5 Hypothesis of the study**

Having a critical examination of the various literatures in the area of online trading and its ability of changing the commodity exchange operational practice of ECX the following hypothesis were formulated for analysis.

H1: perceived ease of use has positive significant influence on ECX operational practice.

H2: trust has positive significant influence on ECX operational practice.

H3: perceived use has positive significant influence on ECX operational practice.

H4: perceived risk of online trading has significant positive influence on ECX operational practice.

## **1.6 Significance of the study**

The establishment of ECX is very important to support the growth of the country's economy. Since its establishment lots of growth and improvements have been observed in both production as well as trading sectors of the economy. Introduction of an electronic transaction model to the system was reported as technological progression and a wise action of the exchange. On top of that, knowing the operational success and shortfalls of the e-trading model is equally important with opting advanced technological transaction. Findings of this study would give firsthand basic information that helps the institution to improve its trading efficiency by addressing the limitations of the model. Besides, the findings of the study could be informative for ECX to develop a more efficient trading model that can improve its services to efficiently perform the transactions through solving the problem faced by the platform member, intermediaries, farmers and all concerned bodies on the commodity exchange based on the performance of the existing model. Finally, the academic contributions of the research cannot be overlooked.

## **1.7 Scope of the study**

The operation of ECX extends from the farm field, primary market, secondary market to the central trading platform based in Addis Ababa. For the sake of access to information and observation of the E-Trading techniques, this study confined itself to the trading services in the central platform where all members have access to trading and transactions. This means, the scope of the research was delimited to the Addis Ababa central commodity exchange operations where all participants involve in the transaction. Also the study covered the e-trading platform rather than e-auction.

## **1.8 Organization of the paper**

The rest of the paper will be organized as follows: chapter two presents the theoretical and empirical related literature to the study, while chapter three provides research methodology, chapter four outlines data presentation, analysis and interpretation and chapter five includes conclusion and recommendation.

# CHAPTER TWO

## 2.1 Theoretical literature

### 2.1.1 General concepts on commodity and exchanges

Commodity is any good or service which is in exchange value rather than use value in which the society agreed upon and transact(exchange) in organized marketplace or system of trade especially by others who are representing the primary producers of the goods and services (Ston, Anglique and Peter,2000).

Commodity exchange is a market where commodity-linked contracts are traded on the basis of rules and producers determined by the exchange (Dr. M.S.Vasu2018)

So whatever the goods and services, if it is once accepted as an exchange value then the trading ideology are not changed. Which means for very transaction of commodity buyers and sellers must appear at the marketplace where they can negotiate, find the best price and exchange goods for money under an organized regulation (Gorham and Singh 2009). Accordingly Commodity exchange is organized marketplace which serves as a means of risk management and transactional cost reduction for both buyers and sellers (hernndez, Solomon and shahidur).

Gabre-Medhin and Goggin (2005) stated that, many believe that a commodity exchange connotes a highly sophisticated market system, with an electronic-based, highly evolved system of trading in future commodity positions, exemplified by markets such as the Chicago Board of Trade, the Tokyo Grain Exchange, or the London Metal Exchange, among others. To many, a commodity exchange is an advanced market mechanism for use in industrialized countries, out of the reach or inappropriate to low-income countries. Exchange trading emerged in the 1840s, when Chicago became a commercial center with railroad and telegraph lines connecting it with the East of the United States of America. Prior to that, grain traders in Japan had experimented with the idea in 1730. One of the world's largest and oldest commodity exchanges, CBOT 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. CBOT was launched in 1864 and followed in 1877 by the London Metal Exchange (Rashid, Nelson, and Garcia, 2010).

Even though the commodity exchange is organized to reduce transactional cost still members have to pay In return for use of exchange facilities, fees for each transaction. Members also pay indirect costs in the form of lost revenues when trading volume and frequency of trades are low, or a market is illiquid. Thus, the goal of an exchange is to minimize members' fees and ensure liquidity by generating high trading volume for the contracts listed on the exchange.

One way futures exchanges are attempting to boost trading volume and compete more effectively is by increasing their use of electronic trading systems. Indeed, from 1989 to 1996, volume on electronic trading systems used by futures exchanges more than doubled, rising from 7 percent of the world's trading volume to 18 percent (Price Waterhouse 1997). Electronic market places have rapidly expanded as the costs of electronic communications technologies have dropped (Harris, 2002).

### **2.1.2 Experiences in commodity exchange in neighboring East African countries**

The gradual liberalization of agricultural trade combined with the reduction of government support to agricultural producers outside the OECD, heightened the interest in the use of risk management and other modern financial instruments, including commodity exchanges, in the developing world (UNCTAD, 2006). In recent years, there is substantial growth in emerging commodity markets driven by the continued growth of existing exchanges, particularly those in China and India, and also by the rise of other exchanges situated in emerging markets. In Africa, the Pan-African Commodities and Derivatives Exchange (PACDEX) initiative has stimulated the development of national exchanges in a number of countries, including Nigeria, Ethiopia, Kenya and Uganda (its establishment has been strongly supported by the African Union). The PACDEX model comprises a hub in Botswana managing a common exchange, as well as a back-office platform that links together various national exchanges and warehouses to facilitate regional trade in contracts across the agricultural, metals, energy and currency sectors. The experiences with the commodity exchange in Kenya and Uganda are reviewed below

## **Kenyan Experience in commodity exchange**

Currently, Kenya has three commodity exchanges: The Nairobi Coffee Exchanges dealing with coffee, the Tea Auction in Mombasa, and the Kenya Agriculture Commodity Exchange (KACE), a spot exchange that deals with a variety of commodities but mostly maize and beans. The Kenya Agricultural Commodity Exchange (KACE) is a private sector firm that has been in operation in Kenya since 1994. KACE has been an important private sector initiative that has made significant contributions to agricultural marketing in the country, and to smallholder farmers in particular in two ways: linking producers and buyers of agricultural commodities, and provision of market information for commercial actors within the subsector. However, KACE faces several challenges among which the following two are the most important: (i) the poor quality of produce that farmers deliver combined with the fact that most small-scale farmers find it difficult to deliver in bulk which is ideal for an exchange; and (ii) most of the commodities in Kenya are heavily regulated by boards and are grown and marketed in an environment of struggling cooperatives, which are inefficient, mismanaged and have cumbersome internal bureaucracies. (Mukhebi, 2004).

To overcome the stated challenges, KACE is supporting smallholder farmers to organize themselves into marketing associations in order to cost-effectively access market and information services provided by the exchange. This allows them to consolidate supplies of marketable quality commodities for offer through the exchange, and purchasing of inputs in volumes to achieve economies of scale. In addition, KACE's electronic market information system, the Regional Commodity Trade and Information System (RECOTIS), is providing market information throughout the eastern and central Africa region to promote regional trade.

In general, faced with fragmented markets, government intervention and significant infrastructural deficiencies, trade through KACE has always been minimal. Instead, focus has been on information dissemination with KACE acting as a provider of paid-for price information, a business model supported by private sector partnerships and aid donor funding.

For June 2010, the Nairobi bourse plans to launch a commodities exchange by a joint effort of the National Cereals Produce Board (NCPB), the Kenya Agricultural Commodities Exchange (KACE), Eastern African Grain Council (EAGC) and Nairobi Stock Exchange. It will consist of a platform where futures can be traded. The market will initially trade major grains produced in

East Africa, including maize, wheat, rice and beans but will ultimately trade other agricultural commodities, including inputs such as fertilizers and seeds.

The plans have met with some criticism. Kenya Coffee Planters and Traders (KCPT), the association that runs Nairobi Coffee Exchange, said the country has not established the fundamentals for a credible commodities exchange. Experts reckon that for a commodities exchange to work in Kenya, the government needs to back the initiative with sound legal and regulatory frameworks such as enacting a Commodities Exchange Act and a Warehouse Receipts Act. The system also requires major improvements in road networks connecting farms and a substantial investment in NCPB facilities to fit them with modern equipment like sievers and driers to enable hold grains for longer periods (Omondi 2010).

### **Ugandan experience in commodity exchange**

Uganda Commodity Exchange Limited (UCE) is a corporate entity registered in 1998 through the initiative of private sector players with four founding shareholders namely, the Ugandan Cooperative Alliance, Ugandan Coffee Trade Federation, National Farmers Association and Commercial Farmers Association. The UCE became operational in 2002. The commodities currently traded at the exchange are coffee, sesame, maize, beans, soya beans, and rice with quantity specification of minimum 10 tons per lot for every commodity (UNCTAD, 2006). UCE aims to serve several objectives. One objective is to help link producers and buyers easily and cheaply and to make the process of price discovery more transparent. A second objective is to ensure that only standard commodities are traded. The commodity exchange is linked to the Warehouse Receipt System and UCE has been delegated the regulatory function of warehouse receipts. Standards are being developed to ensure that farmers produce what the market requires to avoid wastage that currently characterizes production of rural producers. Once standard commodities are available in the rural areas, exporters will be assured of supply and farmers will get good prices through the exchange (Dawit Alemu & Gerdien Meijerink, 2010).

There have been a few auctions on the floor of the exchange with encouraging results, but operations had to be suspended to improve the system with the assistance of the European Union. There are several initiatives aiming at enabling farmers to access markets and have better bargaining power through bulking. One of these initiatives includes the formation of Area Cooperative Enterprises (ACEs). These ACEs are formed by primary societies to handle input distribution, bulking of farmers agricultural commodities, which they sell to most the

competitive buyer. In order to ensure predictable quality, some have started value addition. It has been mainly the ACEs that have utilized the services of both the UCE and WRS so far. A quick survey between 18 May and 8 June 2010 of the UCE shows the level of activity of the UCE. The UCE appears to trade only in maize. On 18 May 2010, the total amount of maize open for sale was around 1.620 tons of maize (32 bids) with an average price of 562 USH. One week later, the total amount for sale was 465 tons with an average price of 433 (21 bids). Finally on June 8th, the total amount for sale was 1.335 tons with an average price of 473 USH (32 bids). So it seems that the UCE is active, but that is trading activities are limited (Omondi 2010).

### **2.1.3 Electronic trading**

Technology plays three main roles in futures trading: (i) providing general information such as price, volume, and news; (ii) routing orders; and (iii) 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).

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). In particular, our definition includes electronic systems that do not provide automated trade execution. 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 ET 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. In an electronic order-matching system, all orders entering the exchange via a computer network are recorded in an electronic order book and are matched in a price and time sequence. Orders that are not executed remain in the order book for later execution when the price limit is reached. As well, some exchanges allow proprietary trading whereby investors can bypass intermediary brokers and trade from their own computer terminals (Tsang, 1999).

ET is location-neutral, which means users do not need to be in the same physical location, and allows continuous multilateral interaction (whereas telephone trading is bilateral). This facilitates cross-border trading and cross-border cooperation of trading systems. Furthermore, ET offers large scope for economies of scale and reduction of operational costs, as it is cheap and easy to increase trading capacity, which tends to encourage consolidation. Finally, ET allows straight through processing by easily integrating different parts of the trading process, starting from display of pre-trade information, through to risk management.

According to Kim (2007), electronic and algorithmic trading has become a significantly larger focus for financial institutions, securities regulators, and different exchanges. Market developments along with tougher regulations have made equity trading more complicated and less profitable. Automation and new technologies have changed the trading game dramatically in the past five years or so. The speed of financial information is outpacing anyone's forecast. The traditional clerks running across the trading floor with order slips and men in pits negotiating bid prices may soon be replaced by the sound of traders typing in their parameters onto their broker screens to facilitate order flow using programs and algorithms.

#### **2.1.4 Emergency of electronic trading**

Transactions have traditionally been handled manually, between brokers or counterparties. However, starting in the 1970s, a greater portion of transactions have migrated to electronic trading platforms. These may include electronic communication networks, alternative trading systems, "dark pools" and others.<sup>[2]</sup>

The first electronic trading platforms were typically associated with stock exchanges and allowed brokers to place orders remotely using private dedicated networks and dumb terminals. Early systems would not always provide live streaming prices and instead allowed brokers or clients to place an order which would be confirmed some time later; these were known as 'request for quote' based systems.

Trading systems evolved to allow for live streaming prices and near instant execution of orders as well as using the internet as the underlying network meaning that location became much less relevant. Some electronic trading platforms have built in scripting tools and even APIs allowing traders to develop automatic or algorithmic trading systems and robots.



The client graphical user interface of the electronic trading platforms can be used to place various orders and are also sometimes called trading turrets (though this may be a misuse of the term, as some refer to the specialized PBX phones used by traders).

During the period from 2001 to 2005, the development and proliferation of trading platforms saw the setting up of dedicated online trading portals, which were electronic online venues with a choice of many electronic trading platforms rather than being restricted to one institution's offering.

The number of exchanges worldwide that use electronic systems in varying degrees to trade futures and options increased from eight in 1990 to about forty in 1997 (Baptiste, Kang, and Rosenfeld 1993; authors' calculations).

Algorithmic trading has become another method for large brokerage firms to grasp an advantage over their competitors for lower-cost executions; however, smaller players such as agency brokers also see algorithms as a way to level the playing field and infringe on the bigger bulge-bracket firms. Algorithmic trading originated on proprietary trading desks of investment banking firms. It began to expand executing client orders because of new markets and the need to remain in line with new players in the brokerage industry. This has created a more competitive environment for traditional dealers with services such as direct market access through the Internet (Kim, 2007).

### **2.1.5 Electronic exchange and trading benefits**

Electronic transaction benefits all participants that involve in the exchange including the regulators of the exchange. The globalization and rapid transmission of real-time data plus the increment of the tradable products with respect to the power full computers and networks the link the world altogether change the way markets function. On the other hand firms or potential providers of tradable products to the exchange markets can operate under broker-neutral system platform. Traders have the access to the market and can enjoy data which is available easily in real time. Automated trading applications are helping traders trade a larger suite of products and manage greater volume. The traceability and transparency of the market place has also helped the facilitators and risk managers to track the market and trading activity more efficiently and accurately. The benefits of the new model have been significant and, as exchanges continue to grow, the financial markets will continue to find creative ways to reap the rewards.

### **2.1.5.1 Globalization**

Any significant growth for an exchange would require a bigger physical floor, which is costly to build and maintain. The only way to significantly increase market share would be to eliminate the physical boundaries of the exchanges. The computers and networks allowed exchanges to connect to the trading community virtually. The globalization of exchanges through the use of technology has allowed them to expand by connecting with exchanges around the world. They are now able to list new products (created or acquired) quickly and with very little up-front cost. This global expansion has led to a significant surge in the volume across exchanges and across asset classes (Gorham and sing; 2009)

### **2.1.5.2 Market Access**

According to Helen.A, Electronic trading can widen access to trading systems across several dimensions. Physical limitations that once rationed access to traditional venues no longer bite, meaning additional users can now participate at minimal marginal cost, removing the economic need to limit access through membership restrictions. At the same time remote linkages remove geographic limitations on the pool of potential users, and continuous multilateral interaction is enabled. This wider access to trading systems increases competitive pressures on dealers and typically forces those which remain to focus more on value added services.

### **2.1.5.3 Transparency**

According to (Helen Allen, John Hawkins) Electronic trading creates the potential for a very high degree of transparency across the whole trading process. In principle, systems can disseminate real-time pre- and post-trade information market-wide. Transparency arrangements affect the balance of information among participants. As Madhavan (2000) demonstrates that this influences the degree of information in the order flow, price discovery and liquidity. Exchanges provided an open Application Programming Interface (API), which allowed the trading community and technology firms to directly connect to the exchanges. Anyone with a computer and Internet connection can access real-time market data from exchanges around the world (Gorham and sing 2009).

#### **2.1.5.4 Surge in volume**

The growth in financial markets in recent years would be unthinkable in the floor-trading environment. The electronic infrastructure has allowed exchanges to process this growing volume with the speed and degree of accuracy that could not have been achieved with floor-trading (Gorham and sing).

#### **2.1.5.5 Availability of data**

According to Gorham and sing (2009) trading is a game of numbers. Traders require more information's like exchange volume, price of the product, last price which the product has been sold and so on. Standing on these points the traders make decision on the exchange they want to conduct. As the markets moved toward electronic trading, the financial community saw the availability of financial data increase tremendously. More important, the traders were able to access this data in real time, allowing them to adjust their trading strategies or positions instantaneously.

#### **2.1.6 Challenges of electronic trade**

Helen, Hawkins and Sato (2001) came to the conclusion that electronic trading is more cost efficient and offers the potential to make markets more transparent. However, they also concluded that electronic trading raises a host of issues and potential problems. For example, if the exchange goes down or connection gets lost, users of the electronic trading systems could be at a disadvantage. Another aspect is the usage of exchange bandwidth. One user should not be allowed to monopolize the information flow, which requires imposition of bandwidth costs on users of electronic trading. However, the restriction on bandwidth may not be the same for all users (Tsang, 1999).

While many exchanges are moving towards electronic trading, Tsang (1999), noted that there are still several obstacles to this transition, such as concerns with the stability of the system, especially when the trading volume is high and the need for computerized procedures to prevent mistakes in typing information on trades.

Gorham and Singh, (2009), stated like many innovations, challenges are also introduced or exacerbated by electronic exchanges. Greater speed and globalization mean that there is less room for error and problems can instantly spread around the world. For all its advantages,

technology is still rather fragile and unreliable. People are still prone to error and bursts of panic. The result can be greater volatility and, sometimes, ad hoc resolutions to glitches in the electronic infrastructure. According to these writers the listed below items are identified as challenges to online trading.

### **2.1.6.1 Dependency on each other**

The world of electronic trading brought the speed, reliability, efficiency, and growth to financial market that would have been unimaginable in floor-trading. The exchanges and trading community rely on technology providers for connectivity to the financial markets. Trading firms rely on vendors and brokers for their electronic platforms. The shared dependencies have brought many advantages for financial market players, such as cost savings, messaging standardization, and trading speed, to name just a few. This dependency has also introduced new challenges. Technology glitches at these external vendors can potentially have widespread impact on the overall financial markets (Gorham and sing 2009).

### **2.1.6.2 Technology glitch**

As a matter of fact all technology can fail. Computers and networks are hardware devices that do not have infinite lifespan. They will fail at any time without notice. The electronic trading architecture is built on software programs that communicate with each other. These software programs will have bugs that cause applications to behave abnormally or to fail. The network connections between computers and companies can be overloaded with message traffic. Whether it is a machine failure, a bug in a software application, or a capacity issue in the system, these glitches can have a significant impact on the financial markets (Gorham and sing 2009).

### **2.1.6.3 Market volatility**

As Gorham and sing; 2009 stated one of the other major impacts of technology is the potential volatility in the market that can be caused by system latency and capacity issues. As we will see, these issues are not due to actual failures in the system or inaccurate information. Instead, it's a potential delay in data dissemination that can make the market appear to be far more volatile than it is. In the automated trading world, traders build algorithms and strategies specifically to react

to large volatility swings in the markets. If the volatility in the markets is caused abruptly due to capacity issues, it can trigger unwanted orders that can be costly to the trading community.

### **2.1.7 Problems with transition**

Since open outcry trading has been used for more than a century, there is strong resistance to change. Exchanges such as the CBOT and the CME, which have a long history of open outcry trading, have encountered opposition when proposals were made to go electronic. Substantial job losses can result when computer systems replace pit traders. Since pit traders are often members (part owners) of the exchange, this poses a strong barrier to conversion. Threatened with potential job loss, these members may use their voting power to influence the exchange's decision. Traders also argue that it would be costly to replace open outcry with electronic trading, since automation would not be able to replicate the quick reactions and keen instincts of an experienced trader (Tasgan, 1999).

## **2.2 Empirical review**

Harris (2000) in his survey of the issues floor versus automated trading systems considers how both systems differ in fairness, convenience, capacity, speed, efficiency and cost. His research conclusion revealed that electronic trading systems are generally cheap to use and operate. These characteristics ensure that active markets and markets that serve small traders will use the electronic trading system extensively. In addition the researcher concluded that electronic trading system allows traders to exercise direct market access. On the other hand the researcher pointed the benefits of floor trading concluding that floor trading markets are better than that of the automated ones when the brokers need to exchange information about each other before they trade. Harris also noted that operational fairness can be easily achieved in electronic trading while to get this in floor based trading traders must be highly skilled to follow the trading rules faultlessly. It all depends on the skill and honesty of the traders who arrange the trades.

Asgharet al., (2011) conducted a research to study the impacts of electronic commerce (e-commerce) applications on the organizational performance of the Indian small and medium enterprises (SMEs). They indicated that there were many different types of e-commerce applications that may influence the organizational performances; in their research, they were categorized into five different categories: electronic advertising, electronic payment system,

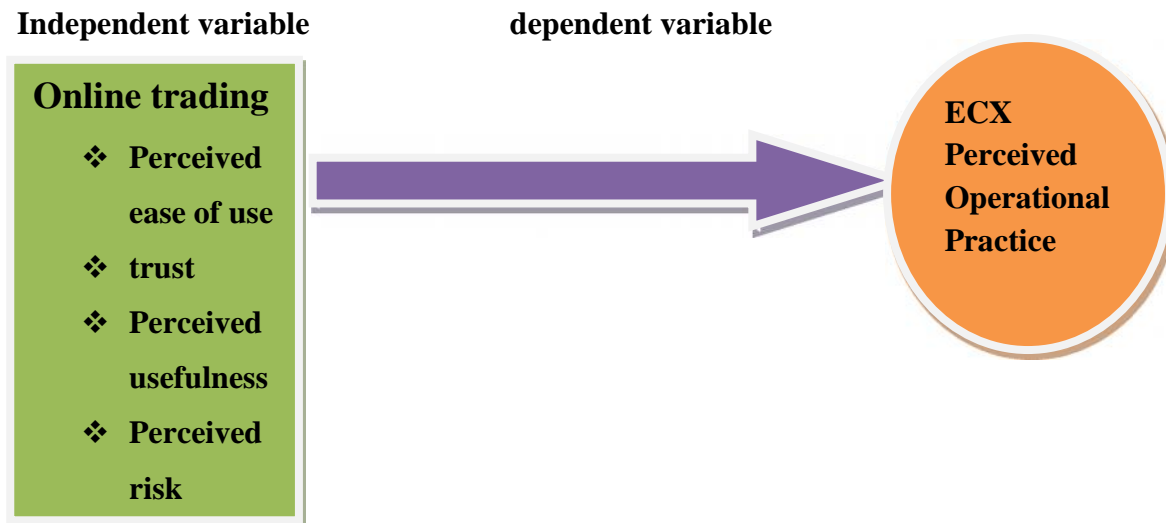
electronic marketing, electronic customer support service and electronic order and delivery. According to their literature review, most common types of organizational performance measures that are used in recent empirical researches were included: Financial or accounting performance, operational performance and market-based performance. For analyzing the data derived from questionnaire structural equation modeling (goodness of fit tests and path analysis) were used and the software used for analyzing the data were LISREL 8.54 and SPSS 18. The survey method was considered to be the most suitable research method for this investigation. On the whole, this paper illuminated significant relationships between applications of electronic commerce and operational and market based performance. The proposed measurement model exhibited a good level of model fit, too.

In another study Lau, Yen, and Chau (2001) the adoption of online trading by investors in the Hong Kong Financial market. Feasibility of changing in to a new system can be viewed from different perspectives, technical operational, financial and social/ organizational. Lau et al. (2001) used a research model based on the decomposed version theory of planned behavior, to study the factors that affect investor's adoption of on-line trading. They used correlation analysis to perform and investigate whether the hypothesized attributes, variables and belief structures are correlated with each other. The result of their analysis indicates that regarding the hypothesized model, there was a strong statistical magnificence that perceived usefulness, perceived ease of use and compatibility significantly affects the attitude to words using the proposed system, implying that investors will possess positive feelings for using online trading if it can enhance their efficiency and effectiveness of placing orders. They concluded that on line trading is likely to improve the process of placing orders, provide an electronic audit trail for each transaction, and there can be trading around the clock.

### **2.3 Conceptual frame work**

Effects were measured via indicators, which show changes in certain conditions arising from specific projects or interventions. They provide evidence of progress in attaining the objectives. They are reestablished signs that are relevant to good performance and to achieving project objectives (UNCTAD, 2009). In this Study, in order to explore Electronic transaction model in Ethiopia, analysis of constructs of online trading was important. Based on this, four factors (perceived ease of uses, trust, perceived usefulness and perceived risk) were identified from

literature review and used in this study as a construct for online trading. In line with this, the dependent variable ECX perceived organizational practice was analyzed.



**Figure 2.1 conceptualization of the study (source: Getachew Araya June 2016)**

### **2.3.1 Online Trading –Independent Variable**

Electronic trading model has similar processes as the floor-trading model, and it continues to provide the core benefit of the exchange: a designated place where people meet to trade with each other unless they opt to trade from wherever they are. The electronic trading model provides a virtual meeting place, with far less human intervention. As the commodity exchanges began embracing technology, many of the processes in the trade cycle were being automated. The arm of clerks, runners, and other floor personnel are now replaced with computers. Instead of touching many hands, a trade today goes through many computers. In the electronic trading model, orders are entered by traders or clients through trading screens. Trading screens utilize programs that allow traders to view the entire market on the computer screen. Although the concept of buying and selling products still remains the crux of trading, the electronic trading model does differ significantly from the old floor-trading model (ECX, 2013). In line with this, because such trading is new to Ethiopia, Online trading need to be assessed though external factors that has direct impact on using or not using of the technology and related direct/ indirect impact of ECX perceived organizational practice. These External variables are

### **2.3.1.1 Perceived ease of use:**

This represents the perception of the customers/user of online trading about the system. Noting online trading is the technology based activity; users need to have a perception of ease of use. When the system is not preceded to be easy, it prevents customer not to try to use it and this has its own negative implication on the ECX perceived operational practice.

### **2.3.1.2 Trust:**

Trust is an expectation that one choose to trust will not behave opportunistically. It is one's belief that the other party will behave in a dependable, ethical and socially appropriate manner. Trust deals with the belief that the trusted party will fulfill commitment despite the trusting party's dependency and vulnerability (Ming-Chi Lee, 2009). When a social environment cannot be regulated through rules and customs, people adopt trust as a central social complexity reduction strategy. In particular, in the case of online business which are lacking in effective regulations, consumers have to trust the E-vendor from whom they purchase, assuming in reality that the e-vendors will be ethical and behave in a socially suitable manner or else the overwhelming social complexity will cause them to avoid purchasing all together (Ming-Chi Lee, 2009). Trust in this study indicates that when customer have a trust on the system (online trading), they choose to use the system and when customers uses the system, the system will have more impact on the ECX operational practice.

### **2.3.1.3 Perceived usefulness:**

Perceived usefulness of online trading has recently come to be considered as one of the most effective stock transaction method. Based on a certain extent on reasons offered by two types of perceived benefits stood out, which can be categorized as direct advantage and indirect advantages. Direct advantages refer to immediate and tangible benefit that customers would enjoy by using online trading. For example customer can benefit from lower order handling fees, faster transaction speed and better information transparency. Indirect advantages are those benefits that are less tangible and difficult to measure for example; online trading allows the customer to perform stock transaction anywhere in the world and offers customers a wider range of investment opportunities, as well as other free services such as stock quotation and news (Ming-Chi Lee 2009).



### **2.3.1.4 Perceived Risk:**

Peter and Ryan defined perceived risk as a kind of subjective expected loss. And Featherman and Pavlou also defined perceived risk as the possible loss when pursuing a longed for result. The Distance and impersonal nature of the online environment and the implicit uncertainty of using global open infrastructure for transactions can be about two specific types of risk namely, security risk / privacy and financial risk. Security/ privacy risk refers to a potential loss due to the internet fraud or hacker intrusion. Financial risk refers to the potential for monetary loss due to transaction error or stock account misuse (Ming-Chi Lee, 2009). Attitude one online trading: Attitude on the trading has its own effect on the application and usage of the system which in turn has an effect on perceived ECX operational practices. Positive attitude will have positive impact and negative attitude will create negative impression on the system and result in negative consequences

### **2.3.2 Dependent Variables**

Perceived ECX operational practice: This refers to ECX practice that should be carried out to achieve the main objective for establishment of the ECX organization. Among the many practices Price discovery refers to the mechanism through which prices come to reflect known information about the market. The price level established on the open market can therefore represent an accurate depiction of the prevailing supply/demand situation in the underlying commodity markets, whether in the spot market for current deliveries or in the forwards/futures markets for deliveries at specified future occasions. The benefits of price discovery can be categorized as those arising from a more efficient price formation process, and those arising from the wider supply of more – and more accurate – market information. The former refers to those benefits arising from the proper alignment of supply and demand, ensuring that the market pricing signal triggers efficient production, purchasing and investment decisions by participants in the sector. The latter refers to those benefits arising from the publication and dissemination of market information, with the resulting price transparency providing a readily available, authoritative and neutral price reference to sector participants (UNCTAD, 2009). Special attention may be drawn to three particular categories of impact: Price dissemination reduced information asymmetries and improved farmer returns: Readily available price references can benefit farmers who are otherwise disconnected from the market and are vulnerable to receiving

sub-optimal prices and conditions from better-informed intermediaries. Information disseminated by the exchange can therefore reduce the information asymmetries that privilege intermediaries, and can empower participants in the commodity sector to take better decisions in light of a more accurate understanding of market conditions (UNCTAD, 2009). Improved farmer returns and reduced cash market volatility: There are two phenomena at work. Both are to do with market price information increasing the sensitivity of producers to anticipated price levels, enabling them to adjust their behavior accordingly (UNCTAD, 2009). : Reduced intra-seasonal volatility: At a micro level, the availability of market price information show's producers how the price is developing – and is expected to develop – during the season. This enables them to decide when the optimal time is to deliver goods to market. At a macro level, this can translate into reduced intra-seasonal price volatility. The arrival of goods to market becomes more staggered, instead of having commodities arrive in large, infrequently delivered consignments which can cause prices to spurt and dip as the season develops. However, it is important to note that a farmer is dependent on access not only to information, but also to storage and finance, in order to have an effective choice about when to deliver goods to market (UNCTAD, 2009). Reduced inter-seasonal volatility: At a micro level, the availability of futures prices for the coming season provides producers with an effective guide to deciding which crops to plant – and in what quantities – in order to maximize expected returns at the time of the next harvest. Use of spot prices as a guideline – the way that many farmers currently work – can lead to an exacerbation of inter-seasonal volatility; known as the “cobweb effect” of inter-seasonal price fluctuations.<sup>12</sup> the futures price typically provides a more accurate indicator of the future spot price at the time of harvest. Therefore, at a macro level, if the market anticipates shortages for a given commodity next season, futures prices will rise and farmers will have a better incentive to plant that commodity, thereby mitigating the expected shortage (and vice versa). However, it is important to note that a farmer is also dependent on the availability of inputs and expertise, and a natural environment that allows for crop rotation or intercropping (UNCTAD, 2009).

More efficient price formation and effective signaling for production, purchasing and investment decisions: Efficient price formation for agricultural commodities can lead to an increase in the allocative efficiency of the agricultural sector. Prices typically act as a signal that informs the commodity-production, purchasing and investment decisions of sector participants. Therefore, as pricing becomes more reflective of the underlying supply/demand fundamentals in the sector, so

these decisions lead to more efficient outcomes that can increase the net welfare gains to sector participant. By providing an efficient, open and transparent platform for trading on a daily and ongoing basis, commodity futures exchanges can be an effective platform for fulfilling this purpose. A high level of participation from major producer, processor and purchaser interests – either domestic or international – strengthens the price-discovery mechanism. Conversely, a lack of participation from industry interests weakens it. Moreover, in circumstances where price formation in the domestic industry differs significantly from price formation in world markets, having a local platform reflecting domestic fundamentals can provide better signaling for the domestic industry (UNCTAD, 2009).

Market Expansion also is one practice of commodity exchange enabling to create markets, by providing a forum in which multiple buyers and sellers trade commodity-linked contracts. This reduces the costs associated with finding a buyer or seller with whom to transact. This logic is perhaps even stronger in the context of international trade facilitation, whether it is regional or global in nature. The transaction costs of conducting international trade tend to be greater than those for domestic trade. This is driven by factors including distance, more pronounced information asymmetries, barriers to trade, divergent business practices, and cultural and linguistic differences (UNCTAD, 2009). Online trading provides for market expansion. It will be impractical to accommodate all trade sessions with the two trading floors at ECX headquarters as more commodities or new type of markets are added. While more trading floors can be built, the more economical and sustainable option will be to provide online trading platform and allow trading from anywhere. The ongoing telecom and power expansion coupled with affordable rates will further enable and effect broad acceptance of electronic trading as demonstrated by the experience in India.

Operations will be much more efficient in terms of cost and service delivery. The amount of paper (in thousands during peak season) that get produced including Member Client Position (MCP) report, Floor Representative reports, Delivery Notice (DN), and Net Obligation Report (NOR) on a daily basis will be eliminated including all associated labor costs to distribute and handle these documents, and the space requirements. Significant to this is the streamlining and mostly elimination of this paper based process will transform the current business process resulting in measurable service and process efficiency.

# CHAPTER THREE

## 3.1 Research Methodology

### 3.1.1 Research Design

In order to achieve the general objective of the study, the researcher used a descriptive research design and exploratory research design. Descriptive design is set out to describe and to interpret what is going on. Descriptive research, according to Tavakoli (2012), is concerned with conditions or relationships that exist; practices that prevail; beliefs, points of views, or attitudes that are held; processes that are going on; effects that are being felt; or trends that are developing. The main objective of descriptive research is to analyze the state of affairs as it prevails at the time of the study. In this view, descriptive research helped to analyze the operational practice at ECX electronic based market.

## 3.2. Sampling design

### 3.2.1. Population of the study

The target population for the study is end users of the electronic trading model whom are ECX members and their representatives in central platform located in AddissAbeba. The population size was determined based on the number of members at the ECX Headquarters and their representatives. ECX has 309 members and 618 representatives. All coffee, sesame and pea beans traders were considered for the study as these commodities are traded as mandated ones at the Exchange on daily basis.

### 3.2.2. Sampling Technique

The convenience sampling refers to the collection of information from members of the population who are conveniently available to provide it. It will be used because convenience sampling is most often used during the descriptive phase of a research project and is perhaps the best way of getting some basic information quickly and efficiently (sekaran 2003). The selection

was also free from any personal biases because the investigator doesn't exercise his discretion of preference in the choice of an item.

### **3.2.3. Sample Size Determination**

As an alternative in calculating the sample size, formula developed by Taro Yamane (1967) was also used. Yamane (1967) provided a simplified formula to calculate sample sizes. This formula was also used to calculate the sample size

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

Where n= the sample size

N= the size of the population

And e=the error of 5 percentage

$$n = \frac{927}{1+927(0.05)^2}$$

$$n = \frac{927}{3.3175} = 279.43$$

A sample of 279.43 were taken as representative sample and given questionnaires to fill out in order to get their perspectives on online trading system. This resulted in a total of 279 questionnaires that was distributed to the selected sample group from the target population.

## **3.3. Data source**

The research data was collected from different sources using the various data collection tools. The study used both primary and secondary data sources and collection approaches.

### **3.3.1 Primary Data**

The primary data comprised of the background, experience, attitude, and perception of respondents. Questionnaires were used to collect the needed information from selected sample members and representatives of the Exchange.

### **3.3.2 Secondary Data**

Secondary data was collected through desk research to identify the extendibility dimension on the research construct and to clarify and substantiate the result from the primary data. Journal articles, case studies and reports, and research papers available on online trading platforms were used to carry out the study.

### **3.4. Method of data Gathering**

The major data collection method in this study was Questionnaires to members as well as for the representatives, exchange officers. Accordingly the first part of the questioner was basic information. This part of the questioner was used to collect information about respondent's characteristics including role and occupation, education and experience in using ECX service. The second part was developed based on the construct of ECX online trading as measured by: - perceived ease of use, trust, perceived usefulness, perceived risk. Online Trading was measured by measures adapted from Ming –Chi Lee. [2009].the data analysis method involved descriptive statistics, correlation analysis and Simple regression analysis.

### **3.5. Data Analysis and Interpretation**

Data analysis methods should be suitable with the type of research method chosen for a study. The primary information for this research was collected with the help of questionnaire and to make a thorough analysis of the responses from the sample population. Also secondary sources of data published articles, publications, books, websites and others.

Following to the data collection, the researcher had been entered data and analyzed it by the use of statistical package for social science (SPSS version 20). The entered data was also counterchecked against the original version of the questionnaire in order to sort out invalid responses, to correct errors committed in the process of data entry and thereby to check the consistency of the data entered. Both descriptive and inferential statistics were applied in the analysis of the data.

Firstly descriptive statistical tools are used in the data analysis to summarize the demographic characteristic of respondents. Particularly descriptive statistical tools such as, frequency, percentages, mean, standard deviations and cross tabular presentation that helps the data to be as accurate as possible are employed in order to describe and interpret the demographic and other

related information of the respondents. Pearson correlation analysis was made to see the direction and significance of the independent variable such as perceived ease of use, trust, perceived usefulness, and perceived risk and dependent variables (ECX operational practice).

In addition, multiple linear regression analysis of all the variables was studied to investigate how the independent variables have influence on the dependent variable. Regression equation for determinants of online trading and ECX operational practice:

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon_i$$

Where, Y= ECX operational practice

$\beta_0$  = Y intercept/constant

$\beta_1$  = the beta weight or regression coefficient of perceived ease of use

$\beta_2$  = the beta weight or regression coefficient of trust

$\beta_3$  = the beta weight or regression coefficient of perceived usefulness

$\beta_4$  = the beta weight or regression coefficient of perceived risk

$X_1$  = perceived ease of use

$X_2$  = trusts

$X_3$  = perceived usefulness

$X_4$  =perceived risk

$\epsilon_i$  = sum of residuals or error terms

# CHAPTER FOUR

## 4. DATA ANALYSIS AND INTERPRETATION

In this chapter the data collected from respondents were analyzed and interpreted using quantitative analysis which involves analysis of the demographical information of respondents and the descriptive and inferential statistics employed to test the hypothesis and to investigate the influence of the independent variables on the dependent variable. To analyze the collected data in line with the overall objective of the research undertaking, statistical procedures were carried out using SPSS version 20.

### 4.1 Data Cleaning and Coding

To address the research objective, data were collected from the members and representatives of ECX. The data was cleaned and coded in order to make the collected data's suitable for the analysis; all questionnaires were screened to be complete. All unreturned and incomplete questionnaires were considered as errors and removed from the survey data. Out of the 279 distributed questionnaires, 79 were incomplete. Hence, a total of 200 complete questionnaires were being used for the study with 71.6% response rate. Coding of data is necessary for transferring and editing data in SPSS. The questions and possible answers were corresponded in the order of the actual questionnaire and coded for further analysis using SPSS.

### 4.2 Descriptive Statistics

After distributing 279 questionnaires for customers, a total of 243 answered questionnaires were retrieved, which is 87% of the total distributed questionnaires. After checking the collected questionnaires the 200 questionnaires were valid for statistical analysis. Ultimately, 71.6% of the total questionnaires distributed entered for the analysis.

The questionnaire used for this study was made up of two sections. The first section is made up of general information questions aimed to capture information related to demographic characteristics of respondents. The second section is comprised of questions aiming to address the basic research questions and has 19 indicator questions headed by five constructs, perceived ease of use, trust, perceived use and perceived risk as independent variables and Overall ECX operational practice as dependent.



## 4.2.1 Demographic Characteristics of Gender, Age and Educational Background Respondents.

Before going forward to the analysis of data, discussion on background information of respondents such as demographic data is useful in order to make the analysis more meaningful and interesting for the readers. This part elaborates the characteristics of the respondents in terms of gender, membership and education and working years. Accordingly, the respondents were summarized and described in the subsequent part.

**Table 1 Demographic characteristic of gender, membership, Educational Background and working year of Respondents.**

<b>Gender</b>			
		Frequency	Percent
Valid	Female	75	37.5
	Male	125	62.5
	Total	200	100.0
<b>Membership type</b>			
		Frequency	Percent
Valid	Buyer	87	43.5
	Seller	113	56.5
	Total	200	100.0
<b>Education</b>			
		Frequency	Percent
Valid	Diploma	70	35.0
	Degree	102	51.0
	Post Graduate	28	14.0
	Total	200	100.0
<b>Working years</b>			
		Frequency	Percent
Valid	1 up to 2 years	84	42.0
	2 up to 3 years	38	19.0
	3 up to 5 years	53	26.5
	Above 5 years	25	12.5
	Total	200	100.0

**Source: Survey Result, (2020)**

The table shows that information of 200 respondents of this research by dividing from gender up to working year. Accordingly from the total female respondents constitute 37.5% (75) whereas

male respondents constitute the remaining 62.5% (125). That mean in this investigation number of male respondents of ECX members and representatives have highest percentage than that of female respondents which implies that the majority of members and representatives are male. Respondents in the study are different in membership type. Those in the seller category account 56.5% (113) whereas the buyers are 43.5 % ( 87).

In terms of education classification it indicate that out of 200 respondents, 35% (70) of them were diploma holders, 51 % ( 102) of the respondents were degree holders, the remaining 14% (28) respondent are Post Graduate. This implies that, the majority of respondents are degree holders.

And at last the working year of respondents are explained as 42 % ( 84) of respondents have the experience of 1 up to 2 years. 19 % ( 38) of respondents have the experience of 2 up to 3 years and 26.5 % ( 53) of respondents worked for 3 up to 5 years and the remaining 12.5 % ( 25) have the experience above 5 years.

### 4.3 Test of Reliability and Validity

The reliability test is an important instrument to measure the degree of consistency of an attribute. As stated by Mahon and Yarcheski (2002), the less variation of the instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. It measures the internal consistency of the items in a scale. It indicates that the extent to which the items in a questionnaire are related to each other. It also indicates that whether a scale is one-dimensional or multidimensional. The normal range of Cronbach’s coefficient alpha value ranges between 0-1 and the higher values reflects a higher degree of internal consistency (Hair, 2009).

**The table 4.2 below shows the value of alpha for each dimension as a whole also it shows the measure has internal consistency.**

Measurement	number of items	Cronbach's alpha
Perceived ease of use	3	.862
Trust	2	.795
Perceived use	2	.893
Perceived risk	3	.809
ECX perceived operational practice	6	.903
Reliability of all	16	.917

**Survey Result, SPSS (2020)**

As shown in the above table 4.2, all the constructs were fulfilled the recommended cut-off point of the alpha, which Cronbach's Alpha .862 for perceived ease of use, .795 for trust, .893 for perceived use. .809 for perceived risk, .903 for ECX perceived operational practice. The overall Cronbach's alpha coefficient for all variables is .917. Thus the data generalization was reliable and free of random errors.

#### 4.4 Descriptive Statistics of Variables

In this part descriptive statistics in the form of mean and standard deviation were presented to illustrate the level of agreement of the respondents. The main objective of the study is assessing Electronic transaction model practice in Ethiopia commodity trading. To do so, members and representatives who directly participate in trading at ECX were asked to rate the level of agreement to each question under the four attributes namely: perceived ease of use, trust, perceived use and perceived risk on a five point Likert scale with: 1= strongly disagree, 2= disagree, 3 = neutral, 4= agree and 5= strongly agree.

**Table 3** Table 4.3 descriptive statistics dimension

Descriptive Statistics			
	N	Mean	Std. Deviation
PEOU	200	3.5067	.77146
T	200	3.3650	.84727
PU	200	3.4200	.82432
PR	200	3.4533	.71362
EOP	200	3.3550	.74654
Valid N (listwise)	200		

**Survey Result, SPSS (2020)**

The above table shows mean of independent variable from 4 item range from 3.3650 to 3.5067 which indicates that perceived ease of use has got the highest mean score 3.5067, whereas trust has got the least mean score value of 3.3650.

##### 4.4.1 Descriptive Statistics of perceived ease of use

Online trading is the technology based activity; users need to have a perception of ease of use. When the system is not preceded to be easy, it prevents customer not to try to use it and this has its own negative implication on the ECX perceived operational practice. Accordingly, the respondents were asked 3 questions related to perceived ease of use. The table 4.4 below

present's respondent's results of perceived ease of use with mean and standard deviation values for each item.

**table 4.4 Descriptive Statistics of perceived ease of use**

Descriptive Statistics			
	N	Mean	Std. Deviation
The online trading may affect the user's ability to trade.	200	3.55	0.825
Experience in trading using floor based trading will help to use the online trading system.	200	3.42	0.898
in online trading system order placing is easy	200	3.56	0.889
PEOU	200	3.5067	0.77146
Valid N (listwise)	200		

**Survey Result, SPSS (2020)**

The above table indicates that the mean of perceived ease of use attribute for all 3 items ranges from 3.42 to 3.56 which indicate that respondents in the ECX trading floor feel that order placing is easy with the highest mean value of 3.56, and the least value was 3.42 which indicates that the experience in trading floor based trading help to use the online trading system. The overall mean score of perceived ease of use attributes was calculated to be 3.5067.

**4.4.2 Descriptive Statistics of Trust**

It is one's belief that the other party will behave in a dependable, ethical and socially appropriate manner. Trust deals with the belief that the trusted party will fulfill commitment despite the trusting party's dependency and vulnerability (Ming-Chi Lee, 2009). This is the context in which the variable is used throughout this paper. Accordingly, the respondents were asked 2 questions related to trust. The Table 4.5 below present's respondents result of trust with mean and standard deviation values for each item.

**Table 4.5 Trust Descriptive Statistics**

Descriptive Statistics			
	N	Mean	Std. Deviation
The online trading system will allow me to react to market changes more quickly.	200	3.22	1.199
online trading will help me to go forward in my transaction	200	3.51	0.54
T	200	3.365	0.84727
Valid N (listwise)	200		

**Survey Result, SPSS (2020)**

the above table indicate the mean of trust attribute for all 2 items ranges from 3.22 to 3.51 which indicates that trust in online trading is good that it helps to move forward in transaction with the highest mean score of 3.51, whereas the immediate reaction to market changes in online trading has got the least mean score value of 3.22. The overall mean score of trust attribute was calculated 3.365.

**4.4.3 Descriptive Statistics of perceived usefulness**

As defined by Fred Davis Perceived usefulness (PU) is the degree to which a person believes that using a particular system would enhance his or her job performance. This implies that investors will possess positive feelings for using online trading if it can enhance their efficiency and effectiveness of placing orders. Accordingly, the respondents were asked 2 questions related to perceived usefulness. The Table 4.8 below present’s respondents results of perceived usefulness with mean and standard deviation values for each item.

**Table 4.6 Descriptive Statistics of perceived usefulness**

Descriptive Statistics			
	N	Mean	Std. Deviation
Using the online trading system will improve my company's profitability in trading.	200	3.40	0.956
Using the online trading system will enhance my effectiveness in trade.	200	3.44	0.768
PU	200	3.4200	0.82432
Valid N (listwise)	200		

**Survey Result, SPSS (2020)**

The above table indicates mean of perceived usefulness attribute for all 2 items range from 3.40 to 3.44 which indicate that online trading system will improve effectiveness in trading has got the highest mean score of 3.44, whereas increment of profitability got the least score of 3.40. Overall mean score of perceived usefulness attribute calculated to 3.4200.

**4.4.4 Descriptive Statistics of perceived risk**

Peter and Ryan defined perceived risk as a kind of subjective expected loss. And Featherman and Pavlou also defined perceived risk as the possible loss when pursuing a longed for result. Perceived risk also had the indirect influence on intentions to invest through investment performance. Because of this and other reasons the perceived risk has its own impact on the perceived operational practice of ECX. Accordingly, the respondents were asked 3 questions related to perceived risk. The table 4.4 below present's respondents results of perceived risk with mean and standard deviation values for each item.

**Table 5Table 4.7 perceived risk Descriptive Statistics**

Descriptive Statistics			
	N	Mean	Std. Deviation
Doing trade (business) online is safe	200	3.49	0.862
online trading will resolve the issues associated with collusion	200	3.36	0.935
there is better condition to avoid collusion in online trading system than floor trading system	200	3.51	0.702
PR	200	3.4533	0.71362
Valid N (listwise)	200		

**Survey Result, SPSS (2020)**

The above table indicates that the mean of perceived risk attribute for all 3 items ranges from 3.51 to 3.36 which indicate that respondents in the ECX trading floor feel that using electronic trading system avoid collusion than floor based trading system with the highest mean value of 3.51, and the least value was 3.36 which indicates that online trading will resolve collusion. The overall mean score of perceived risk attributes was calculated to be 3.4533.

**4.4.5 Descriptive Statistics of ECX operational practice**

Operational practices refer to the methods of operating a business or providing a service. It includes the daily practices that a business observes in order to ensure safety of process and employees. Moreover, operational practice has a great impact on one company. The Table 4.12 below present's respondents results of ECX operational practice with mean and standard deviation values for each item.

**Table 4.8 Descriptive Statistics of ECX operational practice**

Descriptive Statistics			
	N	Mean	Std. Deviation
The online trading system enhances ECX's capacity to introduce new products to trading floor.	200	3.86	0.831
online trading increase profitability of the company	200	3.51	0.833
the new features that the online trading platform brings will improve the price discovery process the execution of an order is immediate	200	3.2	0.511
online trading system make remote access possible	200	3.61	0.794
online trading will increase the number of traders and liquidity	200	3	1.152
The performance of the system is good.	200	2.95	1.166
EOP	200	3.355	0.74654
Valid N (listwise)	200		

**Survey Result, SPSS (2020)**

As indicated in the above table mean of ECX operational practice attribute for 6 items range from 3.86 to 2.95. This indicates that new product introduction to trading floor has got the highest score of 3.86, whereas immediate order execution has got the least score of 2.95. The overall mean score of ECX operational practice attributes was calculated 3.355. therefore the overall mean of variables is 17.1.

Descriptive Statistics			
	N	Mean	Std. Deviation
GM	200	17.1000	3.39001
Valid N (listwise)	200		

## 4.5 Inferential Statistics

### 4.5.1 Correlation Analysis

To meet this research objective, the researcher conducted correlation analysis because Correlation analysis helps the researcher to investigate the direction and strength of relationships between the dimensions of online trading and ECX operational practice. Correlation coefficients



take values between -1 and 1 ranging from being negatively correlated (-1) to not correlated (0) to positively correlated (+1). Hence, to determine the existence and level of association the relationship between adapting of online trading and ECX operational practice scale were investigated using Spearman's correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity.

**Table 4.9 Spearman's correlation**

			<b>Correlations</b>				
			PEOU	T	PU	PR	EOP
Spearman's rho	PEOU	Correlation Coefficient	1.000	.727**	.660**	.792**	.690**
		Sig. (2-tailed)	.	.000	.000	.000	.000
		N	200	200	200	200	200
	T	Correlation Coefficient	.727**	1.000	.334**	.711**	.511**
		Sig. (2-tailed)	.000	.	.000	.000	.000
		N	200	200	200	200	200
	PU	Correlation Coefficient	.660**	.334**	1.000	.728**	.848**
		Sig. (2-tailed)	.000	.000	.	.000	.000
		N	200	200	200	200	200
	PR	Correlation Coefficient	.792**	.711**	.728**	1.000	.708**
		Sig. (2-tailed)	.000	.000	.000	.	.000
		N	200	200	200	200	200
	EOP	Correlation Coefficient	.690**	.511**	.848**	.708**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	200	200	200	200	200

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

**Survey Result, SPSS (2020)**

The results of correlation coefficient for the relationship between perceived use and ECX operational practice 0.848 is higher compared to the other variable the relationship are also significant at the 0.1. As a result H3 is accepted.

A correlation analysis from the above table that 0.708 exist a positive relationship between perceived risk and ECX operational practice. The relationship is significant at 0.01 levels. Accordingly H4 is partially not supported.

A result of correlation analysis clearly depicts in the above that ECX operational practice is positively and significantly correlated to perceived ease of use levels of coefficient. So it has relationship and significant. Then H1 is accepted.

Trust is also correlated with ECX operational practice; the direction of the relationship is positive implying that respondents are not worried about using the online trading which has positive impact on the ECX operational practice. Correlation coefficient 0.511 is significant at 0.01 levels. H2 is accepted.

In general, perceived ease of use, trust, perceived use and perceived risk factors were positively correlated to ECX operational practice. The most significant factors correlated to ECX operational practice are perceived use and perceived ease of use.

## 4.6 Tests for Linear Regression Model Assumptions

### 4.6.1 Normality Test Assumption

Hair et al. (2006) noted that normality relates to the shape of the data distribution for an individual metric variable and its relationship to the normal distribution. Assessment of the variables „level of skewness and kurtosis is one of the method that will determine Normality (Hair et al, 2006).In fact; Skewness provides an indication of the symmetry of the distribution (Hair et al., 2006). Kurtosis turns to the peakedness or flatness of the distribution relative to the normal distribution (Hair et al., 2006).For determining skewness and kurtosis values, if the calculated z value for skewness and kurtosis goes beyond the critical values of  $\pm 2.61$  at 0.01 significance level or at 0.05 significance level, the distribution of data is considered nonnormal (Hair et al., 2006).The result of the analysis shows that none of the variables falls outside the  $\pm 2.61$  range of skewness and kurtosis in this study. Thus, the data for this study is normal in relation to Skewness and kurtosis (Hair et al., 2006). Table 4.17, summarizes the variables of skewness and kurtosis for the study is normally distributed.

**Table 4.10 Table of normality**

**Descriptive Statistics**

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
PEOU	200	-1.497	.172	1.111	.342
T	200	.243	.172	-1.577	.342

PU	200	-.176	.172	-.133	.342
PR	200	.023	.172	.009	.342
EOP	200	-.263	.172	-.403	.342
Valid N (listwise)	200				

Source: Survey Result, SPSS (2020)

#### 4.6.2. Multicollinearity Test Assumption

Multicollinearity refers to the situation in which the independent variables are highly correlated. When the independent variables are multi-co linearity, there is overlap or sharing of predictive power. When the predictor variables are correlated among themselves, the unique contribution of each predictor variable is difficult to assess. One should check for the problem of Multicollinearity which is present if there are high correlations between some of the independent variables. The study checks this with the Variance Inflation Factor (VIF) which calculates the influence of correlations among independent variables on the precision of regression estimates. The VIF factor should not exceed 10, and should ideally be close to one. Tolerance is an indicator of how much of the variability of the specified independent variable is not explained by the other independent variables in the model and is calculated using the formula  $1-R^2$  for each variable. If this value is very small (less than 0.10), it indicates that the multiple correlation with other variables is high, suggesting the possibility of multicollinearity.

**Table 4.11 Multicollinearity Test Assumption**

Model	Collinearity Statistics		
	Tolerance	VIF	
1	PEOU	.286	3.502
	T	.363	2.756
	PU	.227	4.409
	PR	.175	5.702

a. Dependent Variable: EOP

Source: Survey Result, SPSS (2020)

As can be seen from table 4.16, regarding this study the tolerance level of all independent variables are greater than 0.1 and the VIF value of all the independent variables are also less than 10. This confirms the absence of Multicollinearity.

## 4.7 Regression Analysis

### 4.7.1 Multiple Regressions

In order to see the contribution of determinants of online trading towards of ECX operational practice, multiple linear regression analysis was employed. Multiple Linear regression estimates the coefficient of the linear equation, involving one or more independent variables that best predict the value of the dependent variables. ECX operational practice was used as the dependent variable while the underlying four dimensions of determinants of online trading (perceived ease of use, trust, perceived use and perceived risk) were used as the independent variables.

**Table 4.12 Model Summary**

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.910 <sup>a</sup>	.828	.824	.31314

a. Predictors: (Constant), PEOU, T, PR, PU

Source: Survey Result, SPSS (2020)

The model summary table shows an Adjusted R-Square value is 0.824 which means that 82.4% of online trading towards ECX operational practice was explained by the variation of the four determinants dimensions. In other words, this means that 17.6% of the dependent variable i.e. ECX operational practice cannot be explained by these four dimensions and that there must be other variables that have an influence on the outcome.

**Table 4.13 ANOVA Analysis**

#### ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	91.785	4	22.946	234.014	.000 <sup>b</sup>
	Residual	19.121	195	.098		
	Total	110.906	199			

a. Dependent Variable: EOP

b. Predictors: (Constant), PEOU, T, PR, PU

Survey Result, SPSS (2020)

From the ANOVA table, it is possible to see the overall significant of the model. The mean squares can be calculated by dividing the sums of squares by the associated degrees of freedom.

F-ratio is a test of the null hypothesis that the regression coefficients are all equal to zero. The table shows that the F-value (234.014) is significant at 0.01 level of significant (P value that corresponds to F statistics is significant). The result of the study indicated that regression model significantly predicts online trading towards ECX operational practice of ECX account in the study area.

**Table 4.14 Coefficient Matrix**

Coefficients <sup>a</sup>						
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1	(Constant)	.168	.114		1.471	.143
	PEOU	.126	.054	.130	2.333	.021
	T	.099	.043	.112	2.271	.024
	PU	.608	.057	.672	10.756	.000
	PR	.123	.074	.092	1.302	.027

a. Dependent Variable: EOP  
**Survey Result, SPSS (2020)**

Table 4.19 presents the result of regression analysis which is based on the four independent variables (perceived ease of use, trust, perceived usefulness and perceived risk). The independent variables that contribute to variance of the dependent variable are explained by the standardized Beta coefficient.

The beta value on the coefficient table indicates level of effect each dimension has on the dependent variable which is ECX operational practice. The strength of each independent variable influencing the dependent variable can be investigated via standardized Beta coefficient. The regression coefficient explains the average amount of change in the dependent variable that is caused by a unit change in the independent variable. The larger value of Beta coefficient an independent variable has, brings the more support to the independent variable as the more important determinant in predicting the dependent variable. So all of the regression coefficients (beta coefficients) between the online trading determinants (PEOU, T, PU, PR) and ECX operational practice have positive value.

The finding reveals that as expected perceived risk show significant relationship with the ECX operational practice also maintained positive ones.

The empirical findings also indicated that perceived usefulness is the stronger predictor or the most significant impact in the organization because it has the highest beta coefficient result ( $\beta=0.608; p<.05$ ). The beta coefficient result of 0.608 signifies that for a 1 unit change in the independent variable (perceived use); the dependent variables (ECX operational practice) will change 0.608 units. It is apparent from this result perceived use is a factor that affects ECX operational practice. This result implies that perceived use will provide ECX ample opportunities to scale up its operations by way of enhancing its capacity to introduce new instruments, to launch new contracts, and to adapt to new models.

According to the regression equation established, taking all the four independent variables into account constant, a unit increase in perceived ease of use will lead to a 0.126 increase in operational practice of ECX; a unit increase in trust will lead to a 0.099 increase in operational practice of ECX; a unit change in perceived use will lead to a 0.608 increase in ECX operational practice and a unit change in perceived risk will lead to a 0.123 increase in operational practice of ECX.

$$Y=168+0.126X_1+0.099X_2+0.608X_3+0.097X_4$$

## 4.8 Hypothesis Testing and Interpretation of Results

**Table 4.15 hypothesis testing**

Hypothesis	Result	Reason
H1: perceived ease of use has positive significant influence on ECX operational practice.	Accepted	$\beta=0.126; p<.05$
H2: trust has positive significant influence on ECX operational practice.	Accepted	$\beta=0.099, p<0.05$
H3: perceived use has positive significant influence on ECX operational practice.	Accepted	$\beta=0.608, p<0.05$
H4: perceived risk of online trading has significant positive	Accepted	$\beta=0.123, p<0.05$

influence on ECX operational practice.		
--	--	--

As hypothesized in literature review perceived ease of use (H1), trust (H2), perceived use (H3) have significant positive effect on operational practice of ECX. Perceived risk (H4) has positive t but not significant effect on operational practice of ECX. As it can be seen from 4.7.1 perceived ease of use (0.021), trust (0.024), perceived use (0.000) significant at p-value <0.05 whereas Perceived risk (0.027) were significant at p-value <0.05. Hence, all hypotheses were accepted. The findings of the study gave support for perceived ease of use, trust, perceived use and perceived risk dimensions to have a positive and significant influence on the ECX operational practice.

# CHAPTER FIVE

## 5. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

This chapter winds up the study undertaken so far by giving insights about summary, conclusions, recommendations and highlighting future research areas.

### 5.1 Summary of Findings

The total sample size was 279 questionnaires were distributed at main trading center of ECX in Addis Ababa. Out of which, 200 questionnaires were returned. After the data was collected the analysis were made accordingly. The first test was the reliability and the sum of the independent variables average Cronbach's alpha value is ( $\alpha = 0.917$ ) and the reliability test of the study was Acceptable and the data generalization was reliable and free of random errors. And on second the mean of variables were tested and the weighted mean value of perceived ease of use (3.50), trust (3.36), perceived usefulness (3.42) and perceived risk (3.45) below average level of agreement among respondents. Following the above testes the correlation was tested and the result between ECX operational practice and perceived usefulness is positive and significantly correlated at ( $R = .885^{**}$ ), ( $P < 0.01$ ) with strong magnitude of correlation, the correlation between ECX operational practice and perceived risk positive and significantly correlated at ( $R = .818^{**}$ ), ( $P < 0.01$ ) with strong magnitude of correlation, the correlation between ECX operational practice and perceived ease of use is positive and significantly correlated at ( $R = .782^{**}$ ), ( $P < 0.01$ ) with strong magnitude of correlation, the correlation between ECX operational practice and trust is positive and significantly correlated at ( $R = .505^{**}$ ), ( $P < 0.01$ ) with strong magnitude of correlation. The results of correlation analysis supported the hypotheses of H1, H2, H3 and H4 proved that there is a positive relationship between ECX operational practices.

Multicollinearity assumption model was conducted and all independent variables are greater than 0.1 and VIF of all values the independent variables also less than 10. After this test the regression analysis were conducted from the testes the model summary results showed that, a linear combination of all the independent variables considered under the study predicts ( $R^2 = .824$ ), of the variance in the dependent variable of ECX operational practice. And the



ANOVA test result showed that, the value obtained under the model summary part was statistically significant at ( $F=234.014$ ), ( $P<0.01$ ).

## **5.2 Conclusion**

The users will improve their ability and can compete not only manually but also automatically to cope up with the technological change that is occurring worldwide. In addition, the traders can put orders easily and can process several orders at once which will manage the time of traders and the transaction. Traders can move forward by their transaction when the trading is technological. They can have lots of contracts and product categories as they can process large volume and orders at once. This will increase the trust that traders have on the ECX which will be a good influence on the operational practice of ECX.

The online trading also increases the effectiveness of traders in their transaction. As the contracts increase, the members will have the opportunity to participate on the trading floor which will lead them to effectiveness.

The introduction of electronic trading has a crucial benefit to avoid collusion of trade. Because as the trade is held online, plus each session and activities are transparent and accountably processed, information on the level of negotiating the trade before the session begins and other kinds of frauds will be reduced compared to floor-based trading. Traders also felt that doing trade using an electronic trade system is safe due to the above explanation. This implies that trust is also not an issue for the traders.

The online trading also provides the stage for several products to be traded by traders. Coffee and sesames and pea bean seed were the oldest products that were traded under the ECX trade platform. Recently chickpea, soybeans were also added due to the electronic trading platform. This implies that the online trading is enhancing the floor's capacity and the ECX operational practice. The remote access will be possible by the implementation of the online trading platform. Recently new trading centers were opened in Hawassa, Humera, and Nekemte cities. These help traders to trade in a convenient place where they prefer to transact. This also has its own implication: traders feel the profitability of their company will increase because of the online trading platform. Price discovery can be faster in online trading because the pre-trade information and the immediate execution of trade make the dissemination of trade information

faster and transparent. The more transparent and available the information is the more helpful it becomes for traders to exploit informational opportunities. The liquidity of ECX increases because of low trading cost.

### **5.3 Recommendation**

This study was conducted to assess electronic transaction model practice in Ethiopia commodity trading. Therefore, based on the observed gaps the researcher forwards the following recommendations:

- Experience creation for the online trading is important since it is not the same as the floor based platform. The traders must feel comfort using the online trading platform by trainings in every change on the system.
- Respondents feel that to cope up to the changes in market is not easy comparatively. This create hesitation to use the platform comfortably so ECX should prepare follow ups to make traders friendly to the system.
- The collusion resolving method that ECX is using now should be more improved to make the market fair than it is now. The online trading is excellent way to resolve the collusion issues because it can provide traceable and accountable transaction.
- As the trading centers are expanding and new products are being introduced the system of the online trading platform should be upgraded every now and then in order to make the transaction smooth. Any system interruption may cause the traders to lose lots of opportunity and jamming of the transaction may occur which will lead to time wastage.

Finally the ECX organization must keep up the good thing that the online trading provided and keep improving the system to enhance its operational practice.

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# APPENDIXE

**St. Mary's University  
School of Graduate Studies  
Department of Marketing Management**

**Dear Respondent,**

The objective of this questionnaire is to gather and analyze relevant, accurate, and timely information that will provide insights about the significance, limitations and the prospects and challenges of online trading system in the Ethiopia Commodity Exchange. This study is undertaken as a partial requirement for the completion of Masters in marketing management.

This questionnaire consists of five sections: **Section I** deals with the general profile of the respondent, **Section II** covers general knowledge respondents have about ECX, **Section III** covers general knowledge respondents have about computer **Section IV** covers questions that are related to the proposed online trading system. The information you provide in this survey will be used purely for academic purposes and it will be held confidential. I appreciate your voluntary and valuable participation in this survey. I thank you in advance for sharing your valuable experience and time with in completing the questionnaire.

Please do not write your name on the questionnaire

**Section I-General Profile**

1. Please indicate your role at ECX.

A, Intermediary member  C, Client

B, Trading Member

2. Please indicate the commodities you trade at ECX. (You can tick more than one commodity)

A, Coffee  C, Pea beans

B, Sesame  D, others

3. Please indicate your membership type at ECX.

A, Exporter  C, intermediary

B, Supplier

4. Please indicate your academic qualification

A, diploma  Masters

B, degree  D, PHD

5. How long have you been working with ECX?

A, between 1-2 years  C, between 3-4 years  E, above 5 years

B, between 2-3 years  D, between 4-5 years

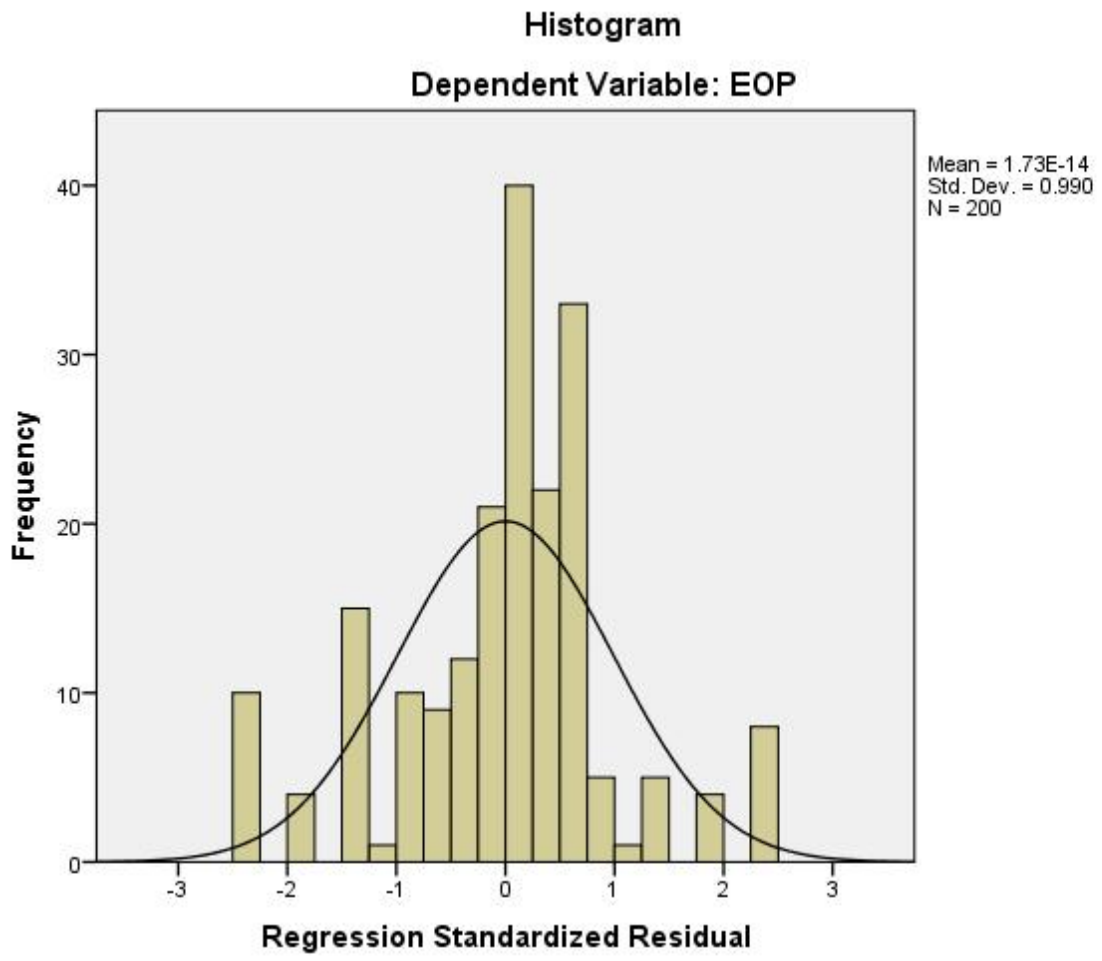
PLEASE INDICATE YOUR LEVEL OF AGREEMENT OR DISAGREEMENT WITH EACH OF THE FOLLOWING ITEMS.

Perceived Ease of Use variables	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. in online trading system order placing is easy	5	4	3	2	1
2. Experience in trading using floor based trading will help to use the online trading system.	5	4	3	2	1
3. the online trading may affect the user's ability to trade.	5	4	3	2	1
<b>Trust</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
4. The online trading system will allow me to react to market changes more quickly.	5	4	3	2	1
5. online trading will help me to go forward in my transaction	5	4	3	2	1
<b>Perceived Usefulness</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>

6. Using the online trading system will improve my performance in trading.	5	4	3	2	1
7. Using the online trading system will enhance my effectiveness in trade.	5	4	3	2	1
<b>perceived risk</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
8. Doing trade (business) online is safe	5	4	3	2	1
9. online trading will resolve the issues associated with collusion	5	4	3	2	1
10. there is better condition to avoid collusion in online trading system than floor trading system	5	4	3	2	1
<b>ECX operational practice.</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
11. The online trading system enhances ECX's capacity to introduce new products to trading floor.	5	4	3	2	1
12. online trading increase profitability of the	5	4	3	2	1

company					
13. the new features that the online trading platform brings will improve the price discovery process	5	4	3	2	1
14. online trading system make remote access possible	5	4	3	2	1
15. online trading will increase the number of traders and liquidity	5	4	3	2	1
16. the execution of an order is immediate	5	4	3	2	1





Normal P-P Plot of Regression Standardized Residual  
Dependent Variable: EOP

