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EFFECTIVENESS OF MARKET PRICE DISSEMINATION CHANNELS IN ETHIOPIA COMMODITY EXCHANGE

BY

BIZUAYEHU GIRMA

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A THESIS SUBMITTED TO **ST. MARY'S UNIVERSITY**, SCHOOL OF GRADUATE STUDIES FOR PARTIAL FULFILLMENT OF REQUIREMENT FOR THE DEGREE OF **MASTER OF ART IN DEVELOPMENTECONOMICS.**

BY

BIZUAYEHU GIRMA

June 2020

Addis Ababa, Ethiopia

DECLARATION

I hereby declare that this thesis is my own work and has never been presented in any other university. All sources of materials used for this thesis has been appropriately acknowledged.

Declared by:

Name: Bizuayehu Girma

Signature:

Date: June 19, 2020

Place: St. Mary's University, Addis Ababa

ENDORSEMENT

This Thesis has been advised by me and fulfills the requirements of the School of Graduate Studies St. Mary's University, recommended for open examination with my approval as a university advisor.

Sisay Debebe (PhD)

   Advisor   Signature   June, 2020

 St. Mary's University, Addis Ababa

APPROVED BY BOARD OF EXAMINERS

As members of the board of examining of the final MA thesis open defense, we certify that we have read and evaluated the Thesis prepared by Bizuayehu Girma under the title " *Effectiveness of Market Price Dissemination Channels In Ethiopia Commodity Exchange*" we recommend that this Thesis be accepted as satisfying the thesis requirement for the Degree of Master of Science in Development Economics

Wondimagegne Chekol(PhD) _____

           Chairperson   Signature

  Sisay Debebe(PhD) _____

           Advisor   Signature

 Paulos Asrat (PhD) _____

      Internal Examiner   Signature

Kurabachew Menber (PhD) _____

      External Examiner   Signature

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ACRONOMY AND ABBREVIATIONS

ADLI   Agriculture Development Led Industrialization

CBOT   Chicago Board of Trade

CTA   Technical Centre for Agricultural and Rural Cooperation

DCE   Dalian Commodity Exchange

ECX   Ethiopian Commodity Exchange Market

EPT   Electronic Price Ticker

FAO   Food Aid Organization

GDP   Growth Domestic Product

IVR   Interactive Voice Record

KACE   Kenyan Agricultural Commodity Exchange

LSE   London Stock Exchange

MIK   Market Information Kiosk

MOTI   Ministry of Trade and Investment

MIS   Market Information System

NYSE   New York Stock Exchange

SAFEX   South African Futures Exchange

SHFE   Shanghai Futures Exchange

SMS   Short Message Service

WB   World Bank

ZCE   Zhengzhou Commodity Exchange

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ABSTRACT

The purpose of the study was to examine the effectiveness of Ethiopia Commodity Exchange's market information dissemination among Ethiopia Commodity Exchange members that has been licensed to trade in Ethiopia Commodity Exchange by representing many clients more specifically the objective of the study emphasis gave to explore the kind of market information dissemination channels of Ethiopia Commodity Exchange most frequently used by trade members in the study area, investigate the effectiveness of ECX's market information for members to make decision about production, pricing, place and promotion and identify the challenges members faced in using market information disseminated by ECX. In order to achieve those objectives attempt was made to answer the following research questions: which market information dissemination channels of ECX are most frequently used by members in the study area, how much Ethiopia Commodity Exchange's market information is effective to make decision for what are the challenges members are facing in using Ethiopia Commodity Exchange's market information dissemination in the study area. Descriptive research design was employed. Both primary and secondary source of data were collected using questionnaire, interview and document analysis. The questioner was used to collect data from 80members using simple random sampling technique. In addition interview was administered with all four employees of ECX Business Information System Division. A Multiple Regression model has been used for the effectiveness of market price dissemination channels in the case of ECX. The analysis of quantitative data was made using descriptive statistics; correlation coefficient and t-test were used. The result of data analysis showed that Market Information Kiosks. Interactive Voice Response and Radio is most frequently used by ECX members and followed by Short Message Service. However, Electronics Price Ticker was not frequently used as intended. Moreover, the effectiveness of Market information for ECX members was found at moderate level. The challenges ECX members faced to use market information were associated with infrastructure, language used for production and dissemination of the information and knowledge of users to understand and analyze. Based up on the findings and conclusion made recommendations like; promotion of information kiosks, Utilization of solar energy source and conducting annual stakeholders meeting and action research for feedback were forwarded.

Key Words: - *Market Information, Channel, Market Information Effectiveness, Challenges, ECX members*

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study

Agriculture is the mainstay of the Ethiopian economy, contributing 41.4% of the country's gross domestic product (GDP), 83.9% of the total exports, and 80% of all employment in the country (Matousa, Todob, & Mojoc, 2013). Coffee, tea, cotton, cereals, oilseed products, fruit and vegetables and animals' products would be the significant farming products utilized for domestic use and move. The country's development approach is based on Agriculture Development Led Industrialization (ADLI) and is strictly dependent on the transformation of the sector country (Ministry of Information Ethiopia Report, 2004). Nevertheless, Ethiopia's customs bound development failed not necessarily to give food to the developing people but since well act as the motor unit engine of industrialization and financial advancement. The sector tackles several problems. Among others, just like, for example, all-natural diathesis, traditional technology and limited means promoting plant varieties to market the product.

Besides, in most regions the cultivation market addition is weakened. Products farmed in poor productivity would take many years to reach to beneficiaries since it passed through a large number of stakeholders, and farmers may wait miss a payment (Asrat, 2003). Smallholder farmers' in the world requires up to date expertise and data in order to successfully and effectively perform their farming practices. The knowledge and information that farmers demand levels from accessibility of new farming methods, availability of weather forecast and furnish as properly as rate of inputs and outputs, among others (UNDP 2012).

Based on (World Bank 2008) report, three from every poor people in developing countries live in outlying areas with over 85 %, and 65% of those relied upon agriculture when sourcing of sustenance and work, respectively. With poverty simply being relatively direr in rural Africa (including Ethiopia), progress efficient farming marketing usually is believed to be extremely vital to improve the contribution of smallholder farmers on the market. This implies that the importance of the reliable marketplace information program to provide up dated price information.

In order to have a well-organized marketing system, the report presented by FAO in 2007 suggested that a commodity exchange could fill this critical need by generating market information to both producers and consumers. Based on the report, the Ethiopian government tried to addresses one of these issues by setting up a national farming commodity exchange system. Based on the trend in lots of other Africa countries, Ethiopia has recently created a nationwide commodity exchange known as Ethiopian Commodity Exchange (ECX).

The ECX signifies a major advancement in the development of the Ethiopian agro-commodity market to promote the commercialization of major agricultural commodities. The ECX serves as a central marketplace where trade is funneled through a single, well-defined mechanism. The scope of the ECX is to promote the commercialization of major agricultural commodities, such as grains, pulses and coffee. A commodity exchange is a central marketplace where sellers and buyers meet to transact in an organized fashion, with certain clearly specified and transparent. The market was designed in such a way as to build upon the pre-existing agro-commodity market. Agricultural commodities flow from surplus markets mainly confined in the western highland regions, through the central market to the deficit markets throughout the country (Addisalem, 2009).

ECX is established as a wholly state-owned market institution having its own legal personality. The exchange shall be governed by ECX proclamation No. 550/2007. Following the proclamations, ECX launched its membership recruitment in January 2008 and commenced trading operations in April 2008. ECX membership is made up of a mix of cooperative unions, industrial processing enterprises, commercial farmers, private exporters, and domestic trading firms engaged in the agricultural commodity business. ECX represents a new way of doing old business, bringing international standards of efficiency and reliability to the age-old domestic agricultural trade and, in the process, transforming Ethiopia (Gabremadhin and Goggin 2005).

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

The ECX is expected to increase trust among buyers and sellers. Making use of modern information and communication technology, the ECX is also expected to increase the concentration of buyers and sellers over as single trading floor, improving effective market competition and reducing transaction costs. ECX use the may possibly of modern data technologies to produce access to marketplace information to all or any its stakeholders including the public. The organization carries out rural based market information Tickers, Mobile phone messaging service (SMS) Interactive Voice Response (IVR), Mobile phone, Mass media (TV, radio, Newspapers) and Internet to disseminate market information (Fikru, 2010).

It consists of additionally been producing centered marketing and sales communications to build and have a look at after relationships with clients inside a terrible infrastructures gadget of the state. It is definitely apparent that Ethiopia needs substantial funding to improve the telecommunication merchandise and services to furnish the required services intended for citizens.

This study tries to find the effectiveness of market price dissemination channels in the case of Ethiopia Commodity Exchange; weather it has a contribution on Ethiopia economy or adverse and to what extent; the research will show the trends analysis ranging of the dissemination channels users from year to year.

1.2. Statement of the problem

Communication permeates all areas of human relationship. Trade is no exception. Before modern media channels came to be used in the area of business transaction, market information was widely disseminated through word –of- mouth. With the advent of the modern media outlets such as newspaper, television, and lately the Internet, the transportation of information has become smooth. This does not mean, however, that these various genres of media have totally replaced the way information used to go around in the preceding times. People have often relied on the modern media as well as the interpersonal, age-old means (Dereje, 2011).

The increasing importance of media for marketing activities is widely recognized. Marketing managers in the new millennium face a broad and diverse choice of media through which to send marketing communications to customers. These include most recently and significantly TV,

radio, Internet, and mobile phone communications, such as text – messaging (SMS), Interactive Voice Record (IVR), electronic price tickers, Market Information kiosks (MIKs) and print.

Previous studies have shown that when looking at marketing communication from a consumer perspective, the issue of media effectiveness is challenging. In this regard, pioneer researchers like (Danaher and Rossiter 2006), found out that the relative effectiveness of media, including traditional mass media like television, mail and radio, as well as new digital media such as the Internet and cellular phones.

Their results show that receivers of direct-response marketing communications continue to be most receptive to traditional media, such as mail and television. The Internet and mobile phones are much less useful as channels for generating a response to marketing communication in Australia in which the study was conducted.

On the other hand, (Heinonen and Strandvik 2008) explored consumer responsiveness to mobile marketing and their study was conducted in Finland. The findings of this study indicated that responsiveness to mobile marketing communication varies among consumers. Compared to traditional direct mail and commercial email communication, the responsiveness to mobile marketing was considerably lower.

Similarly, (Leppaniemi 2008) researched on mobile marketing communications in consumer markets. His study was also conducted in Finland. The results suggest that consumers' intention to receive mobile advertising messages is related to the relevance of the message, permission to receive mobile advertising messages, the benefits of receiving the message, and the privacy of personal data. While the use of media technologies for market information dissemination is a recent phenomenon in the Ethiopian context, as ECX has entered into the market with the intent to disseminate market data, some glitches would somehow surface in the overall endeavor. Given the fact that the level of literacy of the people and the destitution that hinders the use of new media technology in day-to-day life.

Therefore, the application of new media technology such as the mobile, Internet, SMS (Short Message Service) and IVR (Interactive Voice Response) in the area of marketing communication in the country will be doubtful to ensure valid business transactions among the involved parties. One media would be more effective than the other would.

The issue of market information disseminated by ECX was not obtained proper attention among researchers. Particularly Effectiveness of market information disseminated by ECX for rural areas was not sufficiently studied. As far as the researcher's knowledge is concerned there is no independent study focused on Ethiopia Commodity Exchange's market information disseminated for rural areas at national or local level. However the researcher come across two researches related to ECX's market information disseminated to rural areas (Mesay, 2007 and Asegid, 2010). But, the studies take place to propose market information system that could link farmers to the market; and they did not focused on effectiveness of ECX's market information and the challenges ECX members faced in using the market information disseminated by ECX.

The study looks into the knowledge of customers in the study area with the channels. It also investigates the dissemination channels provided by ECX go with the preferences of customers or not. It is therefore meant to explore the effectiveness of all the media types involved in the entire process and as well as single out irregularities, if any, in the market information dissemination and management system (Diekmann, et al, 2009) cited in IFPRI Discussion Paper (2012).

Therefore, this initiates the researcher to carry out this study with the attempts to investigate the effectiveness and challenges of market information disseminated by ECX among ECX members that has a license to trade in ECX whom they represent many clients. Hence, this study was primarily aim to answer the following research questions.

1.3.   Research Question

The research tries to answer the following research questions;

1. Which channel(s) does ECX use to disseminate its market information to users?
2. Are sellers and buyers able to get updated market information in real-time?
3. Are the messages tailored to cater to target customers?
4. How many of the customers have access to the channels?
5. What channels are most effective in generating and enhancing the most valuable customer relationship?

1.4. Objectives of the study

1.4.1. General Objectives

The general objective of this study is to assess the effectiveness of market price dissemination channels at Ethiopia Commodity Exchange of Ethiopia.

1.4.2. Specific Objectives

To this end, the specific objectives:

   i. To assess the critical market information dissemination channels.
  ii. To identify the effectiveness of market information dissemination channels.
 iii. To identify the challenges of information dissemination channel/s

1.5. Significance of the study

This study is believed that Ethiopia as an agrarian country can have enormous benefits from the application of market information dissemination channels to increase its production for marketing activities. However, it should be considered that the challenges such as low literacy levels of the society, inadequate infrastructure facilities like lack of roads, telecom services and other infrastructure problems while the system is carried out.

This research has significance to the division of Business Information System who dissemination any market information for agricultural commodities that has been traded through the exchange and for the ECX as well. Moreover, it is also believed that the study contributes to the organization towards the selection of effective dissemination channels to disseminate market information to users. The main benefit of this research is the Ethiopia Commodity Exchange, of which the organization will obtain the necessary information about its customer's knowledge about the traditional and the new media channels, which enables the exchange to consider the users on the information exchange process.

1.6. Scope and limitations of the study

The study is investigated the effectiveness of market price dissemination channels used by the organization ECX to deliver market information to its users in the area. Considering the manageability of data, budget, time and resource availability, the study is limited mainly to Ethiopian commodity exchange trading members and Intermediary members that are traded at

head office of the exchange. Lastly, in order to see the market price users, trend the researcher has used the most recent five years data from the fiscal year July 2014 GC up to July 2019 GC.

The study could not cover every user of the market price dissemination channels only some traders that have been traded in ECX marketing platform and respondents may not be reflective of the entire members and client in Ethiopia and this research will also address all agricultural commodities that are not traded through ECX trading platform. . However, none of these affected the quality of the research because the study employed appropriate research methodologies in order to achieve its primary objective and to address fundamental research questions.

1.7.   Organization of the thesis

The reports of the study findings are organized in five chapters. The first chapter is the introductory part of the study which includes background of the study; statement of the problem; research questions; objectives, significances, scopes and limitations of the study..

The second chapter present review of the related literature. The third chapter deals with research methodology of the study which presents the research design, Data Types, Source and Method of collection, the population of the study, Sample Design, method of data collection and method of data analysis . The fourth chapter presents analyses of data and discussion of the findings. Finally, the fifth chapter presents summary, conclusions and recommendations.

CHAPTER TWO
2. LITERATURE REVIEW

2.1. Theoretical Review

The theoretical review is organized to touch upon basic principles, notions, and theories that are in one way or another related to the issue at hand. Besides the definition and subsequent discussion of terminologies, forerunning body of literature would be delved into vis-à-vis the current endeavor.

2.1.1. Basic concepts and definitions of marketing

Marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large ((https://www.ama.org/the-definition-of-marketing-what-is-marketing/).   The market has also been linked to the degree of communication among buyers and sellers and the degree of substitutability among goods.

Similarly, it stated that marketing is the creation of satisfied customers and it involves discovering consumer needs and satisfying those needs.   (Kitchen and Pelsmacker 2004) emphasized marketing in terms of relationships among buyers and sellers.

Accordingly, marketing is not about selling; it is about making loyal customers. Relationship marketing is built upon the relationship between customer satisfaction, customer loyalty and profitability. As (Kotler, P. et al. 1996), Marketing is more than any other business function, deals with customers. Creating customer value and satisfaction is at the very heart of modern marketing thinking and practice. Marketing must be understood not in the old sense of making a sale-selling'-but in the new sense of satisfying customer needs (Kotler, et.al, 1996). Marketing is to establish, maintain and enhance relationships with customers and other partners at a profit so that the objectives of both parties are met.

(Singh and Pandey 2005) also suggested that marketing is based on goals and capabilities, by which a producer provides a marketing mix (products and services, promotion, pricing, distribution, etc., that meets consumer needs within the limits of society.

On the other hand, (Rich 2002:218) describes marketing in the sense of feedback, which he states Marketing, as a discipline, recognizes the value of direct consumer feedback in determining the future direction of customer choices and preferences. As our discipline moves

toward becoming a more proactive voice in the marketplace, such issues as slotting fees could become a thing of the past.

This shows that feedback should be considered in the marketing process in order to evaluate whether the information delivering mechanism is successful or not. Feedback is the term we use to describe any response, critique, criticism, or comment about the way we communicate. According to (Bienvenu and Timm 2002), feedback comes from two sources: external and internal. External feedback comes from the target audience; readers, listeners and trusted colleagues. While internal feedback comes from the process of self –evaluation, both types of feedback form the basis for any improvements in communication skills.

In the sense of marketing, feedback is valuable in determining the future direction of customer's choices and preferences. (Kotler and Lee 2007) define marketing: "When asked what they think of when they think of marketing, most people will mention phrases such as selling, advertising, direct mail, telemarketing, bus boards, and outdoor billboards, In truth, these are only a few of the components of only one of the marketing tools to be considered: promotion. Promotional vehicles might include advertising (billboards), personal selling, sales promotion, public relations, and direct marketing"

Marketing wants to get answers to such questions: who are our customers? What product do they want to buy? Where they want to buy it? Why do they want to buy? What price are they willing to pay for it? How they want to buy –cash or credit? From this, it can be seen that marketers should consider the needs of their customers for creating markets, promoting and supplying goods to the clients.

The concept of marketing can be explained in four ways. These are the consumer market, business market, services market and global market. In the case of consumer goods, the marketers sell products like cars, refrigerators, air conditioners, soaps shampoo s, petrol etc. while business market includes capital goods, such as cotton mills and soon. Hotels, hospitals, and travel agencies are good examples of the type of services market. Other products like ideas, events, properties, people, organizations, and information are included under market. On the other hand, global market is related to a close watch over these happenings to trace business opportunities in the outside world with innovative ideas.

McDaniel and Darden (1987:3) describe marketing from an exchange point of view:

> Marketing is the process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individuals and organizational objectives. Exchange occurs when there are at least two parties and each has something of potential value to the other. When the two parties can communicate and have the ability to deliver the desired goods or services, the exchange can take place.

This indicates that marketing is an exchange activity in which buyers and sellers meet to trade. It is also the social process by which individuals and groups bring forth what they need and want through creating and exchanging products and values.

Marketing is directly related to development. It is the key to the economic growth of underdeveloped countries (Singh and Pandey, 2005). This shows that rural marketing is a popular subject today, though it is far more critical for a developing economy like that of Ethiopia. It has played an increasingly important role in contemporary society and the free market economy. When an effective marketing program is in place, it creates a win-win situation for the marketers and customers.

Overall, marketing is perceived as the art of selling and buying. It is also a social process by which individuals and groups obtain what they need and want. In the process of marketing, managers or organizers are advised to focus on the way to satisfy customers.

2.1.2. Basic Concepts and Definitions of Market Price Dissemination

Dissemination can be defined as the scattering or spreading abroad or distribution or dispersion of specific information (Reader's, 1998). The diffusion of innovations is considered to be the process by which a new product is spread among users, in contrast with adoption, which is when it is absorbed and utilized in the decision-making process (Fisher, et al., 2000). However, if the market price disseminator does not want their efforts to be wasted, it would be most advisable to have excellent communication and working relationships with the agricultural extension, cooperatives, and agricultural suppliers' staff and to promote participatory methods for interactions with farmers (Martin & Sherington, 1997). In this way, it can become a focused effort and collaborative learning process that is more likely to achieve its aim.

According to (Mohammed 2015) generally, information can be said to be relevant and useful when it is disseminated, accessed, and optimally utilized by the target audience. He further stressed that information can be disseminated through variety of channels/media such as body language and direct face-to-face contact in form of inter-personal communication in one-to-one formation, one-to-many formations, and in many-to-one formation which usually quickly takes place in personal private discussions and in public presentations at public gatherings and places such as: in group discussions; classrooms; formal and informal peer group interactions; meetings; promotions and marketing events/agencies' programs; political campaigns; and other public-oriented. Agricultural information dissemination is critical for promoting advances in all agricultural market information. Agricultural information dissemination is the process by which users share results and experiences with the aim of influencing their marketing practices to have a better understanding of the intent and use of said messages, agricultural information dissemination as a system of distribution of information or knowledge by research institutions and universities through varieties of ways to potential users or beneficiaries. However, information dissemination can start by documentation or distribution of activities such as the publication of paper-based products in form of articles, books, monographs or other such scholarly papers. The essence of agricultural information dissemination is to distribute or broadcast information, on one hand, to share information and to invite others towards a better understanding, on the other (IGI Global, 2014). In this regard, relevant information, messages and events should be designed, packaged and disseminated through appropriate media in order for the marketing price make sense out of them. To this end, relevant professionals such as librarians, information scientists, web designers, journalists and extension workers should be seen to lead in the dissemination of agricultural information. This is in line with the fact that information dissemination is regarded as a vital ingredient for promoting agricultural and rural development. According to (Ejembi 2006), agricultural information dissemination is a process that involves the use of mass media, briefings, information officers, printed materials, websites, and informal person to person meetings to share results and experiences with the aim of influencing the way the users think and act, or of making them aware of new idea, product or services.

As expressed by the Chartered Institute of Marketing 2006, advertising is a paid form of non-formal communication that is transmitted through mass media such as television, radio,

newspapers, magazines, direct mail, public transport vehicles, outdoor displays, and the Internet. It has the objectives to raise awareness, to produce the market and to persuade the market.

2.1.1. Theory of Marketing and Market Price Dissemination Channels

In the process of marketing, there is a vast and diverse choice of channels through which to send market prices to users. The channel is the method by which the dissemination travels from the source or sender to the receiver, which means that marketing channels as channels that link flow of commodity that a product flows through various transaction modes on its way starting from the farmers or producers to consumers (Dereje, 2011).

As the broadest level, market price dissemination channels are of two types, personal and non-personal. Personal channels of dissemination channels are direct interpersonal (face-to-face) contact with target individuals or groups. Salespeople serve as personal channels of communication when they deliver their sales message to a buyer or potential customers. Cultural dissemination channels such as friends, neighbors, associates, co-workers, or family members are also personal channels. They often represent word-of-mouth communication, an authoritative source of information for customers (Ibid, 2002).

Furthermore, (Singh and Pandey 2005) indicated that marketers have so far not given adequate attention to the phenomenon of 'word-of-mouth' in rural areas. Marketing information about new products, quality, and performance of a product travels expeditiously through word-of-mouth. In the same manner, (Danaher and Rossiter 2006) asserted that Internet, mobile phone, text messaging (SMS) become popular in marketing activity. This shows that the new media technology especially those, which are categorized under non-personal communications are used by consumers in an everyday, part of life globally.

Although the idea of ICTs has been with us for at least a century in the structure of radios and analogue televisions, the term has only won buzz-word reputation due to the fact that the improvement of greater shrewd and interactive science such as phone phones and the electronic-mailing system through the World Wide Web (Barnard, 2007).

Various organizations are engaged in the introduction and development of information. Likewise, a number of repositories and intermediaries play their function to disseminate the data to the remaining users. Agricultural records created from these sources are saved in a variety of

forms before it is disseminated for use. The main repositories of such expertise include publications, audio visuals, and websites. The stored data is then disseminated to users, such as rural farmers, via intermediaries, subject visits, exhibitions, publications, and using ordinary varieties of ICT (TV and radio), current types of ICT (internet, mobile phone, etc), and others (UNDP 2012).

Producers, consumers and service provider's contact through the Internet-based interactive networked connection. In this aspect, eBay is an excellent example about Internet marketing dissemination process.

Today eBay is a global market place where businesses and individuals can buy and sell practically anything. Traditional business transactions occur through a series of intermediaries. Products flow from manufactures or producers through to wholesalers, then to distributors, then to retailers and on to the retailers (the' middlemen') from the intermediary processes finally to consumers. As stated above as an example, buyers and sellers have been transacted in a very long process due to lack of information. However, the non-personal dissemination channel that is the Internet made things easy. This shows that dissemination channels there might be non-personal or personal have significant role in making smooth the transaction process.

The Ethiopia Commodity Exchange is a national multi commodity exchange established in April 2008 with the aim to serve as a market place where buyers and sellers meet to trade, assure of quality, delivery and payment. To this end, ECX promotes and enables the integrity, efficiency and transparency of the market. It guaranteed market integrity by assuring the product grade, quantity and payment. It works towards market efficiency by operating a centralized trading system where buyers and sellers can trade on the basis of standardized contracts. Equally important, ECX tries to disseminate real time market information to all market players with the objective of enhancing and promoting the transparency of the market.

Various organizations are engaged in the creation and development of information. Likewise, several repositories and intermediaries play their role to disseminate the information to the ultimate users. Agricultural information created from these sources is stored in various forms before it is disseminated for use. The main repositories of such knowledge include publications, audio visuals, and websites. The stored information is then disseminated to users, such as rural

farmers, through intermediaries, field visits, exhibitions, publications, and using traditional forms of ICT (TV and radio), modern forms of ICT (internet, mobile phone, etc), and others (UNDP 2012).

2.1.1.1. Short Message Service (SMS)

Short Message Service (SMS) is a text messaging service component of phone. SMS role is very crucial for furnishing the public with instant market information even in remote areas. Information through SMS can be provided into two ways: Push and Pull. In the case of Pull service, service is initiated by the customer and hence information will be provided on demand. Currently, information on the closing price, volume traded and trading session schedule (Including active trading session) and information on commodity grade is being provided through ECX. Any user can access this information by texting specific prompts to 934.

2.1.1.2. Interactive voice response (IVR)

Interactive voice response (IVR) is a technology where users call a telephone number to access market information in voice mail. Any mobile phone or digital landline can be used to call the IVR system. A caller follows an easy step-by-step pre-recorded voice prompt menu to choose the language and access the information. Alike SMS service, the IVR Hotline service is low-cost, timely and convenient to use. Furthermore it is very important as it avoids language barriers. Currently, information on closing price is being provided in English and Amharic languages.

2.1.1.3. Television

Duncan (2002) perceived television as one of the dynamic and prestigious medium of information dissemination owing to the fact that it delivers information in a dramatic audio and visual manner to an extensive and various audiences; it gives more coverage. (Mahmood and Sheikh 2005) also stated television plays significant in role in creating awareness and knowledge about latest agriculture technologies information among farmers.

2.1.1.4. Radio

Familusi & Oweleye 2014 opined that Radio is the most famous capacity of disseminating information, regardless of the continent. It is very attractive due to the fact of some distinguishing features of interactivity, its potential to provoke speaks and to solicit the participation of nearby populace with decrease manufacturing fees and severe versatility. He

additionally printed Radio lends itself simply as properly to fast interventions as to the broadcasting of in-depth reports and is just appropriate for the dissemination of information. Furthermore, UNDP development brief revealed that radio transmission covers over 80 percent of the country and about half of the Ethiopian households own a radio. This makes radio programs one of the most cost-effective channels for disseminating agricultural knowledge and information to the rural community.

2.1.1.5. Website

Temmel (2014) stated that internet is turning into greater and more vital for nearly everyone as it is one of the newest and most forward searching media and clearly the medium of the future. By disseminating information, any company can attain its target market and have a greater impact on policy and programming. The websites can serve as useful device in this effort to speak data across a large audience. Information can be disseminated through the use of the World Wide Web (WWW) designed to disseminate data for backyard and member sources.

2.1.1.6. Electronic Price Tickers

Billboards underneath "out-of-home media", referring to "communication cars that the goal target market sees or uses away from home" or "place-based media", which time period refers to "message-delivering possibilities at places where the target audience goes". Traditional static billboards have been used to advertise brands and communicate messages to the public for many years, but the familiar use of digital billboards has only been applied via advertising and marketing communicators for the duration of the previous decade. Electronic billboards can create superb exposure if positioned strategically where many human beings pass by thru on a day by day basis; this can be somewhere from next to public roads to community centers, market facilities and the like. Marketers, however, should do their homework to determine the showing potential of a specific electronic-billboard location with regard to their goal audiences (Duncan, 2002).

2.1.2. Criteria for Evaluating Market Information

According to (V.M. Open University 2011), (Andrew W 2003), (CAT 2006) and the like, for most benefits, the market information has to satisfy a number of criteria. Some of those are:

2.1.2.1. *Complete information:*

The information ought to cover all agricultural commodities and markets inclusive of international markets. Reasonable and complete data includes prices, charge trends, production,

furnish movements, stocks, and demand stipulations at every degree of the market for a product. Providing such a mass of information, mainly underneath the constantly altering prerequisites is a formidable and high-priced mission. V.M. Open University (2011).

2.1.2.2. *Accuracy and trustworthiness*

As V.M. Open University (2011) state, Information must be correct and trustworthy. However by way of nature, market facts can by no means be 100 per cent accurate, however it need to be an honest market appraisal in order to earn the trust of data users. Constant efforts are made to improve the accuracy of market information and news services. According to (Andrew 2003) If MIS are to have any that means for farmers the records they furnish must be accurate and farmers should apprehend to which product, quality, etc. the costs refer.

2.1.2.3. *Usability*

Information also must be relevant and in usable form. It is no longer sufficient to clearly acquire a quantity of reports. Information must be collected, packaged, and disseminated with the user's hobbies in mind. Much market statistics goes unused because it is not in usable form. In such case the efforts made in gathering the statistics go waste (V.M. Open University 2011). As (Kotler and Armstrong 2002) put it; data through itself has no well worth but, its cost comes from its use. (World Bank 2012) additionally stated that Information have to be developed according to want of the give up users, and supplied in local languages, in easy way and in interactive form. Agricultural technical-knowhow and market information to some extent is on hand to guide decision-making at the farm-level and along the fee chain. The fundamental challenge lies in disseminating this knowledge and data to farmers in a manner that they are able to assimilate the science and use it to enhance yields and livelihoods. (UNDP, 2012)

2.1.2.4. *Timeliness*

Market records should be timely, in the sense of being applicable to modern-day decisions, and should be in a timely fashion transmitted to users. Much market records is unusable. Futures market traders require minute-to-minute market facts (V.M. Open University 2011). The regularity of market fee and quantity statistics relies upon on the type of product that is being stated on. For storable, cereal produce it has been located that a each day update of fundamental goods be provided from the country's foremost terminal markets. These records can successfully be supplemented with weekly records from primary provincial markets. If the MIS is offering data on perishable goods, such as fresh veggies and tender fruits, this will require daily updates

in all markets, and in many instances extra than once a day, due to the greater volatile nature of the expenses of these commodities.

2.1.2.5.   Accessibility

According to V.M. Open University 2011 Each interested party like farmers, consumers, government officials and marketing agencies should have equal access to all the information relevant to the bargaining and marketing processes.

2.1.2.6.   Relevance and clarity

According to V.M. Open University 2011, Market information must be relevant and clearwhich the users can easily understand and uses.

2.1.2.7.   Economic

Information is very vital for selection making and is fundamental for the general improvement of any country, mainly so in the case of creating countries, the place fabulous use of scarce resources is critical. Decision-makers at each degree of the economy need relevant and updated facts to help them. The dissemination of these necessary records requires positive advertising so that these who need facts are aware of its existence and accumulate it on time. It is recounted that the usefulness of the data in decision-making and in the technique of financial development in general, little if any attempt is made to disseminate the acquired statistics to these who want it. Users have been confronted with a number of troubles in the utilization of market information disseminated. One of the factors accounting for this is the high fee of illiteracy, in particular in rural areas. Another trouble is the language barrier. Information acquired from ECX wishes to be translated into nearby languages; often, this is a prerequisite for the data to be of any use.

2.1.2.8.   Infrastructure and capacity

As Kwadwo and Daniel (2012) stated that "rural people mostly live sparsely and this would make provision of infrastructure and public utilities such as electric power, water, health facilities, and some devices of modern ICTs very difficult to deploy in rural areas. Moreover, incomes of the rural people tend to be lower as compared to urban areas, and many rural households simply cannot afford modern ICTs (such as mobile phones, computer and internet). In effect, the combination of these constraints would result in a digital divide between the urban and rural areas. The implication of the divide to the development of agriculture in particular and rural development in general is obvious and something has to be done about it so that the rural areas do not remain marginalized forever."

The low stage of get entry to to ICT infrastructure is also believed to have slowed the sharing and change of information generated at national and regional levels. Relatedly, electricity infrastructure coverage in the rural components of Ethiopia stays low regardless of latest efforts to lengthen the electrical energy grid to rural areas through the rural electrification program. Expansion of ICT services to rural areas has restrained via the low stage of electrical energy coverage. Most FTCs have no get admission to to electrical energy and do now not have electronic equipment such as TVs and computer systems that they want to successfully discharge their work (UNDP, 2012).

In Ethiopia the access to ICT infrastructure is still very low even though some substantive enhancements registered in current years. According to the USA diagnostic file of the World Bank issued in March 2010, the insurance of ICT in Ethiopia is one of the lowest in Africa. For instance, the coverage of GSM signal is about 10 percentage of the populace compared to the 48 percent benchmark for low earnings countries. The Internet bandwidth benchmark for low profits international locations is about 20 times higher than that of Ethiopia.

2.1.2.9. *User literacy*

According to Daniele & Andrew market information can fantastic be utilized through these who have a measure of market education. Traders, in particular those in economies that have lately grow to be extra market oriented, can advantage from basic information about what the statistics represents, how it is gathered, what it can mean, and methods to take full gain of it.

2.2. Conceptual Framework of the Study
ECX's Market information flow chart
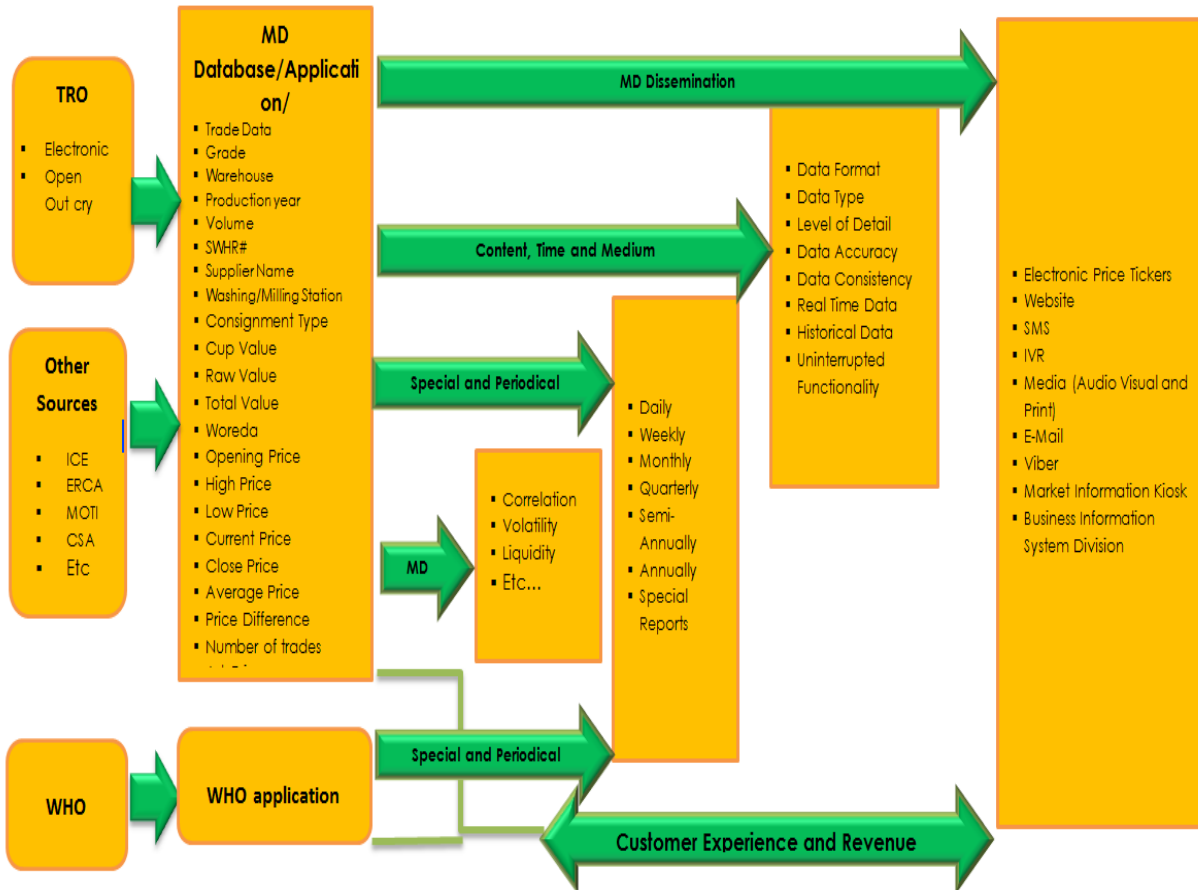
Figure 1: Market information flow chart

Source: ECX (2020)

2.3. Empirical Literature Review

This part provides an empirical review for the study and in literature there have been several reviews that can go with various studies for different purposes. In this study, the researcher believes that an integrated market price dissemination, uses and gratifications, development, diffusion innovations and modernization theories are best suited for exploring the effectiveness of market price dissemination channels in the Ethiopia context.

Kliatchko (2005), who suggests that "Integrated marketing price dissemination is the concept and process of strategically managing audience –focused, channel-centered and result-driven brand dissemination programs over time," advocates this view.

Thus, disseminators with an Integrated Market communication approach will consider all forms of communication, all message delivery channels, customers and prospects, and all brand contact points, while they plan and implement marketing and communications strategies (Kitchen and Pelsmacker, 2004). They also defined Integrated Marketing Communication as follows "An integrated marketing communication has become a strategic business process. It is not just about promotion itself, but about communication. Strategic refers to the overall driving force of the organization."

Kotler, P. et al. 1999, asserted that today, more companies are adopting the concept of integrated marketing dissemination. Under this concept, the company carefully integrates and coordinates its many dissemination channels-mass-media adverting, personal selling, sales promotion, public relations, direct marketing, packaging and others –to deliver a clear, consistent, and compelling message about the organization and its products.

There are two major factors that are changing the face of today's marketing price dissemination. First, as mass markets have fragmented, marketers are shifting away from mass marketing. More and more, they are developing focused marketing programs designed to build closer relationships with customers in more narrowly defined micro markets. Second, vast improvements in computer and information technology are speeding the movements towards segmented marketing. Today's information technology helps marketers to keep closer track of customer needs. More information is available about customers at the individual and household levels than ever before. New technologies also provide new communication avenues for reaching smaller customer segments with more tailored messages.

The market price dissemination environment has changed rapidly due to information technology accessibility. Given this new dissemination environment, marketers are increasingly using mobile phones, text messaging (SMS), interactive voice response (IVR), Internet, along with traditional media such as TV, radio, and print.

People communicate using various channels for many reasons. They ask help, give instructions, provide information, and express ideas and thoughts. In the dissemination process, thousands of messages bombard individuals every day, but all are not realized and remembered. The dissemination flow consists of the following: the source, encoding, the transmission channel, and decoding by the receiver. The source is the originator of the message in the dissemination flow.

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It may be a person or an organization, while encoding is the conversion of the source's ideas and thoughts into message form. A right promotion message is usually concise, brief, logical, and involves the audiences. Whereas decoding is the interpretation of the language and symbols sent by the source through channel, even though; a message is received, this does not necessarily mean that it will be properly decoded.

According to the classical model of effective communication postulates that the sender's message will be most effective when the sender has correctly anticipated the needs and preferences of the receiver, that is when the sender's encoding of the message corresponds with the receiver's decoding of it (e.g., price tickers).

About effective dissemination, (Singh and Pandey 2005) identified several factors affecting of effectiveness of messages. These are languages, pictorial presentation, message, and context associations.

As pointed out by (Belch 1998), for effective market price dissemination to occur, the message decoding process of the receiver must match the encoding of the sender. This means the receiver understands and correctly interprets what the source is trying to communicate. Effective market price dissemination is more likely when there is some common ground between the two parties. The more knowledge the sender has about the receivers, the better it can understand their needs, empathize with them, and communicate effectively.

This shows that the sender or the source should consider the above-mentioned points. By considering the languages of the target audiences, the message has to be understood. In other words, the message is simple, and the words should be appropriate. Similarly, when the sender is using signs, symbols and pictorial presentations should help create a sharp image in the mind of the receiver. Moreover, the message, which is ready to send the receivers, must create interest, hold attention and provide meaning.

In preparing market price information, the disseminator's first task is to identify the target audience and its characteristics. Next, the disseminator has to define the response sought, whether it is awareness, knowledge, liking, preferences, conviction or purchase.

Then a message should be constructed with effective content and structure. Media must be selected for both personal and non-personal communication. Finally, the disseminator must

collect feedback by watching how much of the market becomes aware, tries the product and is satisfied in the process (Kotler et al., 1999).

Besides,media should be selected by considering audience's needs, such as requirements for information, knowledge and understanding since different media to a varying extent can meet these needs.

As we have seen from the above perspectives, market price information channels are paramount essential to fill the existing information gaps. Especially in the marketing sector, buyers and sellers are not benefited without access to market information. There is surplus production on one side and there is also high demand for production on the other side; therefore; market price dissemination channels play a pivotal role in contacting buyers and sellers together. This enables to assure social and economic change.

According to Development theory, mass media facilitate the exchange of ideas, information, opinions, etc. among individuals, friends, families, nations, etc. The exchange of information is also helpful for the development of the country, and it has the power to mobilize people for mass participation.

2.4.   Commodity Exchange

A commodity exchange is a market where commodity-linked contracts are traded based on rules and procedures determined by the exchange. Well-functioning commodity exchanges require several conditions: large trading volumes per transaction, a tremendous amount of liquidity in the market, grades and standards of quality, storage facilities, a reliable banking service, and a robust legal framework to enforce commercial laws and contracts. The most typical contracts traded include spot prices, forwards, futures and options. Commodity exchanges can reduce the costs and risks of transacting. They can provide valuable public information such as prices and volumes of trade. In many indirect ways, they can encourage the financial sector to invest in agricultural value chain development, improve farmers' access to markets, reduce marketing margins, and encourage agricultural productivity growth (T.S. Jayne, 2014).

(Gabremedhin 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 reach or inappropriate to low-income countries.

2.4.1. History of Commodity Exchange

The history of commodity exchange dates back to the middle ages. The growth and the scale of overseas trade in England had created the incentive to establish the Royal Exchanges in the sixteenth century. The 1840s Berlin Grain Exchange in Germany (Hirschstein and Scholz, 1931) and the Chicago Exchange in the USA (Eleni, P. et al. 2005) were icebreakers in their perceptive.

Before the commodity exchanges established, sellers and buyers had come across a barrier to meet each other to trade. These exchanges have played a significant role in bringing together the two parties. For instance, farmers in USA often had found no buyers for the grain they had transported to Chicago. Given the high transport costs, they had been left with no choice but to dump the unsold produce in the lake. However, after the Chicago Board of Trade (CBOT) founded in 1848 by a group of Chicago merchants, buyers and sellers could come together to trade (Babcock, 1999).

Similarly, Babcock (1999) stated that in the United States, commodity exchange started in the grain markets in the middle of the 19th century. The Chicago Board of Trade was established in 1848. In the 1870s and 1880s, the New York coffee, cotton, and produce exchanges were born. Today there are ten commodity exchanges.

Around the same year, the Japanese spot commodity exchange to facilitate the commercial transaction of their exceptionally large market produce-rice (Sano and Lura, 1931). In general, there are major commodity exchanges worldwide in over twenty countries, including Canada, France, Singapore, Australia, New Zealand etc.

According to Eleni et al. (2005), most of the exchanges in the developing world were established in the 1980s and 1990s in response to government liberalization of commodity markets. They also explained that the stories of such market institutions in the developing nations, however, are still a little more than a decade old. There are more than 100 of these exchanges across developing countries of which only three to five are located in Africa.

2.4.2. Global Commodity Exchange Experiences

In this section, the exchange experiences or lessons of some countries were presented shortly and briefly. Especially those that can be a good lesson for the Ethiopia context

2.4.2.1. Commodity Exchanges in China

Of Asian countries that have benefited most from the commodity exchange system, China and India stand out. There are nine commodity exchanges in China, which had contributed to the growth of economy. The Dalian Commodity Exchange (DCE), the Shanghai Futures Exchange (SHFE), and the Zhengzhou Commodity Exchange (ZCE) are the three major agricultural commodity exchanges in China (CMA/AOC, 2009).

Of all the transition economies, China has had perhaps the most active focus on encouraging the development of markets, especially in the agricultural sector. Commodity exchange in the country helps rural residents and improves their incomes.

(Ambissa Tilahun 2007) also stated that China had achieved 8% economic growth for the last 25 years. It has lifted over 200 million of its people out of poverty mainly because of the expansion of trade with countries of the world. As it explained in above, commodity exchange is played a significant role, enhance foreign trade through delivering market information.

2.4.2.2. The Multi Commodity Exchange of India

India has created the most dynamic market by interconnecting sellers and buyers worldwide. What is known as Multi-Commodity Exchange (MCX) and the National Commodities and Derivatives Exchange (NCDEX) are the major commodities in the country (FAO, 2007). The commodities are played an essential role in solving market information accessibility primarily in the rural areas.

According to (Singh and Pandey 2005), communication channels in India are a source of market information to customers. Television has made inroads into rural homes. Mass media today has an enormous approach and access to rural masses, capable of influencing their habits and lifestyles in the country.

2.4.2.3. Commodity Exchange in Cambodia

Cambodia is found in Southeast Asia. Mex Cambodia, the commodity Futures Exchanges in Cambodia is an important market center of commodities trading in Cambodia, which was established in 2010. It is the first online commodity in which buyers and sellers come together here through their respective members.

Cambodia Mercantile Exchange PLC the commodity Futures Exchange is a regulated market place where the local (Cambodia) and global community of market participants including farmers, importers, exporters, hedgers, industrialists, and financial service providers can operate (http://www.mexcambodia.com)

2.4.3. Commodity Exchange Experience in Africa

In the world, several commodity exchanges have been engaged at different models, but it is a recent phenomenon that the formation of commodity exchanges in the African countries. The Africa Agricultural Commodity Exchange in terms of region it has been classifying as East Africa, Southern Africa and Western Africa which is presented as follows:

Table 13: Agricultural Commodity Exchanges in Africa

East Africa	West Africa	Southern Africa
- East African Grain Council - The Kenya Agriculture Commodity Exchange (KACE) - Uganda Commodity Exchange (UCE) - Ethiopia Commodity Exchange (ECX) - Agriculture Commodity Exchange for Africa (ACE) Zambia - Malawi Agricultural Commodity Exchange (MACE	- Abuja Securities and Commodity Exchange (ASCE)	- SAFEX Agricultural Exchange(part of Johannesburg Stock Exchange) - Zimbabwian Agricultural Commodity Exchange

Source: CMA (2009)

2.4.3.1. The Kenya Agriculture Commodity Exchange (KACE)

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 essential 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 (Dawit and Meijerink, 2010).

2.4.3.2. South Africa Future Exchange

The agricultural commodity derivatives market in South Africa was established in 1995 as a separate division of the South African Future Exchange. The primary reason for the establishment of the market was the emergence or recognition of agricultural price risk within the sector. Around 20% of commercial farmers are actively involved in the market. Indeed, the price discovery role of the exchange is such that the price is used throughout South Africa as reference price, and the Warehouse receipts are used as collateral.

This enhances active participation from the market players; apart from fraud there is a view that the certificate is reliable; legally not protected, but still accepted by everyone in the market; banks have established credit limits for each participant who is warehousing.

2.5. Ethiopia Commodity Exchange

Gabre-Madhin (2009) explains ECX as a marketplace where buyers and sellers come together to trade, assured of quality, delivery and payment. ECX is a national multi-commodity market that: Provides market integrity, Enhances market efficiency, Enables market transparency and Allows risk management.

ECX is designed as a public-private partnership enterprise. The government of Ethiopia is the owner of ECX, while it offers the sale of membership seats, which are privately owned, permanently and freely transferable rights to the stream of earnings from trading on the

exchange. ECX is established as a demutualized corporate entity with clear separation of ownership, membership, and management (Dawit and Meijerink, 2010:16).

In ECX Market transparency is achieved by disseminating market information in real-time to all market players (ECX 2008). As Mheen-Sluijer et.al 2010 explain, trading takes place on a physical trading floor located in Addis Ababa and Regional Trading, which recently launched in Hawassa and Hummera, where buyers and sellers participate in shout (open outcry) bidding. Market prices are dynamical changing within trading hours. Once a deal is made, the ECX credits the seller's account and transfers title of the commodity to the buyer. The buyer then needs to collect its goods within ten days from the warehouse where the product was deposited. Once the product is deposited in the ECX warehouse, the ECX samples, grades, weighs, and certifies the product according to ECX established, and Products are stored in the ECX warehouse and an Electronic Warehouse Receipt is issued to the depositor or his/her representative.

Membership is acquired through the purchase of membership Seat. A Membership Seat is a permanent and transferable right to trade. Members are required to follow the Rules of the Exchange and thus maintain the integrity of the marketplace (Alemu et al, 2009).

ECX also provides market information in a neutral, timely, and accurate fashion to all stakeholders and to enable all market actors from small scale farmers to large scale traders and exporters to have sufficient information for decision making through different channels like electronics price tickers, SMS and IVR service, local radio and television mediums, newspapers and market information kiosks.

CHAPTER THREE
3. RESEARCH METHODOLOGY

The previous chapters have been discussed on theories and empirical views that are related to the research directly and indirectly. This chapter discusses the research design and methodology that was used to achieve the objective of the study. Research design, sample size and sampling method, source and method of data collection, procedure of data collection and method of data analysis is presented.

3.1. Research Design

This research conducted in a descriptive research method in order to describe and specify the effectiveness of market price dissemination channels through Ethiopia commodity exchange. Descriptive research is concerned with conditions and relationships that exist; practices that prevail; beliefs, points of view and attitudes that are held; processes that are going on; effects that are being felt; or trends that are developing. At times, descriptive research is concerned with how, what is or what exists is related to some other event that has influenced or affected a present condition or event' (Best, 1970).

The study used both quantitative and qualitative approaches. It allows for both quantitative and qualitative data to be gathered and analyzed using their respective quantitative and qualitative techniques. Moreover, this study is a cross-sectional survey design. According to Zikmund, cross-sectional survey design is the type of survey design in which necessary data is collected at one point in time from a particular set of populations. This research design will be utilized because of resources and time limitations to undertake a longitudinal survey.

3.2. Data Types, Source and Method of collection

The study will use of both quantitative and qualitative data that will be collected from both primary and secondary data sources. The reason for using mixed methods is to keep the validity and reliability of the finding. To generate valuable and relevant data, the primary source of data was the exchange's trading members and employees of ECX working on Business Information System Division from IT department. In addition the secondary data has been gathered from reports and data from ECX, published and unpublished materials and electronic sources.

To conduct the study fruitfully, the researcher used close-ended questionnaire as a primary data-gathering instrument. Sets of questionnaires designed by the researcher to collect the data. The questionnaire has two parts. The first part of the questionnaire consists of individual level basic information such as age, level of education, employment status etc. Part two consists of operation and customer satisfaction issues. Generally, the questionnaire contains a broad range of information on operational performance of Ethiopian commodity exchange (ECX) and its effect on customer satisfaction.

To habits the find out about fruitfully, the researcher used close-ended questionnaire as a major data-gathering instrument. Sets of questionnaires designed by using the researcher to acquire the data. The questionnaire has two parts. The first part of the questionnaire consists of individual degree primary records such as age, degree of education, employment repute etc. Part two consists of Market price dissemination channels related questions.

3.3. The population of the study

A population is a large number of objects and more precisely it is called 'universe' from which the researcher is collecting information (Goddard & Melville, 2004). In research, the word 'population, refers to "the abstract idea of a large group of many cases from which a researcher draws a sample and to which results from a sample are generalized" (Neumann, 2011, P.241).

For the purpose of fulfilling the research's main objective, which is to assess the market price dissemination channels of Ethiopian Commodity Exchange; it is necessary to focus on marketing membership that has a license to trade in of ECX. The population size was determined based on the number of members at the ECX Headquarters as of July 30, 2019, ECX which has been 346. Considering the manageability of data, budget, time and resource availability, the target population has been only limited in Addis Ababa.

3.4. Sampling Design

3.4.1. Sampling Technique

It is always tricky or more often impossible to approach the entire universe of the population and collect the data due to some operational problems and practical issues (Creswell, 2009). The objective of sampling is to make correct inferences about the aggregate and is only justified if the selected part the sample population is a true representative of the main population.

A Simple random sampling technique had been applied for the study since it gives an equal chance for each members of the population.

The basic reason for choosing this technique was random sampling is a set of items that have been drawn from a population in such a way that each time an item was selected, every time in the population had an equal opportunity to appear in the sample (Hoffman,2002).

Sampling is generally used in the case of explorative research study or design, where researchers do not have much lead information. It starts by identifying respondents who meet the criteria for selection in the study and can give lead for another set of respondents or information to move further in the study (Kultar, 2007).

In addition to the selected members purposively all Business Information System division team members which are 4 in number that are working on market price dissemination channels and relates tasks has been included in this study to respond interview questions using census sampling technique. Since those employees are small in number and they are directly engaged on market information dissemination tasks of the organization; they have detailed information about the issue under study. This helped the researcher to get significant information for the study.

3.4.2. Sampling Size

The decisions about sample size are influenced by many factors that need to be taken into account. The factors include the cost and time constraints, the variability of elements in the target population, required estimation precision and whether the findings are to be generalized and, if so, to what degree of confidence (Hair et al., 2007). For this study to determine the sample size the researcher preferred to use a method developed by (Carvalho 1984), as cited in (Malhorta Naresh, K. 2007) sample size determination in addition (Sisay, 2017) adapted to obtain the desired sample size of Ethiopian commodity exchange members. At the end of January 2020, there were 346 members, both trading and an intermediary member at ECX.

Table 14: Sample size determination

Population Size	Sample Size		
	Low	Medium	High
51-90	5	13	20
91-150	8	20	32
151-280	13	32	50
281-500	20	50	80
501-1,200	32	80	125
1,201-3,200	50	125	200
3,201-10,000	80	200	315
10,001-35,000	125	315	500
35,001-150,000	200	500	800

Source: (Naresh, 2007)

From the total study population of 346 ECX member participants that has engaged in buying, selling and exporting of commodities, 80 sample respondents will be taken as per (Naresh 2007) sample size determination.

After sample size and the number of members from each group determine, simple random sampling method utilized to determine specific members of ECX that should covered by the study. 80 questionnaires have been distributed randomly to actively participating members as sample respondent to conduct the study.

3.5. Method of Data Collections

In this study, the researcher uses both semi structured questionnaire and unstructured interview methods of data collection and more specifically a self-administered one. Due to the fact that the study is descriptive in nature both quantitative and qualitative data will be collected using primary and secondary sources.

Questionnaire method can be used for collecting information. It consists of relevant questions, which the respondents can easily answer. It is the most common and effective way of getting the answers as it means direct contact with the user and gets the replies to the problems baffling the marketer (Mathur, 2008:367). A questionnaire is usually self-administered, allowing respondents

to fill them out themselves (Kultar, 2007:69). For developing questionnaire for the study, model questionnaires with standardized format are reviewed. Primary data required for assessing the effectiveness of market price dissemination channels used by ECX to transfer market data were collected from sample customers. The data collect using structured questionnaire. The questionnaires will be developed both in Amharic and in English versions. Both open-ended and close-ended questionnaires will be employed. The close-ended ones require respondents to specify extent of their agreement to a particular statement. While the open-ended ones will be used to gather attitudes, beliefs, preferences, perceptions and wider views of the respondent. The questionnaires will distribute to the target customers to survey their preferences and perceptions towards the dissemination channels used by ECX for transferring market data and to find out the dominant channel.

3.6. Method of Data Analysis

This study categorized under descriptive data analysis and econometric models. A quantitative data has been collected through structured questionnaires and analyzed by using various feature of Statistical Package for Social Science (SPSS 20 and STATA 14).

3.6.1. Descriptive Analysis

Descriptive statistics has been provided a summary statistic related to variables of interest. In this section of analyses descriptive statistics such as trends, percentage, mean and standard deviation were used. In addition to this, descriptive tools such as tables and chart have been used to present data.

3.6.2. Econometric Analysis

In the econometric analysis a Multiple Regression model has been used for the effectiveness of market price dissemination channels in the case of Ethiopia Commodity Exchange.

The research methodology is based on statistical analysis, which in this paper includes the multiple regression analysis. This type of analysis is used for modeling and analyzing several variables. The multiple regression analysis extends regression analysis Titan et al., by describing the relationship between a dependent variable and several independent variables (Constantin, 2006). It studies the simultaneous emotions that some independent variables have over one dependent variable (Lefter, 2004), and it can be used for predicting and forecasting. The multiple

regression models can be much more realistic than the uni-factorial regression model (Goschin and Vatui, 2002). In this study the dependent variable consists of the effectiveness of the market price dissemination channels, while the independent variables are the following: SMS, IVR, MIK, Radio, TV and EPT. The necessary data had been collected for the analysis, after which the regression equation obtained. The coefficient of determination $R2$, which had the aim of indicating the percent of how much of the total variance is explained by the independent variables. Than F test, t with n-(k+1) degrees of freedom will be calculated in order to see which hypothesis can be accepted.

In this study, the study aimed to determine socioeconomic and demographic factors for the effectiveness of market price dissemination channels in the case of Ethiopia Commodity Exchange. A number of dissemination channels which had been related to effectiveness SMEs. The dependent variable is the market price dissemination channels in specific period of time. For the measurement of effectiveness of market price dissemination channels of MSEs which is dependent variable, dissemination channels the regression analysis multiple linear models was used.

The effectiveness has been addressed by dividing the weighted output of six market price dissemination channels namely Electronic Price Tickers, Mobile Phone Short Messaging Service (SMS), Interactive Voice Response (IVR) service, Market Information Kiosks (MIK), Radio, TV, Website.

Multiple regression models as typically specified is:
let Y_i denote the K-dimensional random variable describing the joint set of choices for individual $i = 1, \ldots, N$, defined as $Y_i = \{Y_{i1}, \ldots, Y_{iK}\}$, where Y_{ik} denotes the kth choice for individual i, for $k = 1, \ldots, K$. The set of possible realizations of Y_i is called S which contains 2^K elements. The choices in Yi may be correlated. To describe these dependencies, Russell and Petersen (2000) specify the conditional probabilities of the kth random variable Y_{ik} given all other choices, that is, y_{il} for $l \ddagger k$.
With

$$Y_{ij} = \beta_o + \sum_{i \ddagger k} (\beta i X i + U ij$$

Where, β_o = Intercept

$\quad\quad \beta_i$ = the coefficient of $X_i U_{IJ}$

While dealing with the above independent variables, the following tests will be applied **Multicollinearity test: -** among them to precisely gauge the individual effect of the independent variables on the dependent variables was ruled out. Multi co linearity is possible correlation that may exist among explanatory variables, making the coefficient estimates unreliable. Variance of Inflation Factor (VIF) and Tolerance are two important measures that can detect multi co linearity in a regression model (Wooldridge, 2002).

Heteroskedasticity test: - In regression analysis, Heteroskedasticity is a systematic change in the spread of the residuals over the range of measured values. Ordinary least squares (OLS) regression assumes that all residuals are drawn from a population that has a constant variance (homoscedasticity). The paper will test the variables hetroscedacity.

Normality test

On the residuals disclosed the fact that the residuals were not normally distributed. Withoutthe assumption of normal distribution of error terms (residuals) statistics derived for testing hypothesis would be misleading**.**

3.6.3. Definition of variables and their measurement

Independent variables are variables that are manipulated or are changed by researchers and whose effects are measured and compared. The other name for independent variables is Predictor(s). The independent variables are called as such because independent variables predict or forecast the values of the dependent variable in the model. The other variable(s) are also considered the dependent variable(s). The dependent variables refer to that type of variable that measures the effect of the independent variable(s) on the test units. We can also say that the dependent variables are the types of variables that are completely dependent on the independent variable(s). The other name for the dependent variable is the Predicted variable(s). The dependent variables are named as such because they are the values that are predicted or assumed by the predictor independent variables (https://www.statisticssolutions.com/independent-and-dependent-variables/).

Dependent variable

The dependent variable is the effectiveness of market price dissemination channels and it can be measured by several attributes such as **Comprehensive information:** Market information disseminated by ECX covers all types of commodities, including prices, price trends, supply

movements, stocks, **Accuracy and trustworthiness:** The market information provided by ECX are accurate and trustworthy, **Usability:** The provision of ECX's market information is in usable form. **Timeliness:** Market Information of ECX is transmitted timely to rural clients to made decisions, **Accessibility:** Market information disseminated by ECX are equally access to all rural clients, **Relevance and clarity:** market information disseminated by ECX is relevant, clear and understandable by clients and **Economic:** Receiving ECX's market information is cost effective for rural clients.

Independent Variables:-The independent variables include the market price dissemination channels like EPT, SMS, IVR, MIK, Radio, TV, and website

CHAPTER FOUR
4. RESULT AND DISCUSSION

This study was, as described in the aforementioned chapter, aiming at examining the effectiveness of Ethiopia Commodity Exchange's (ECX's) market price dissemination channels. The data were collected from the members that have been traded in ECX which they are a representative of clients for the commodities that has been traded in the exchange. To gather relevant data for the purpose of the study, questionnaire, and interview means of data instruments were employed. Therefore, the data collected from the target population of the study through these instruments were presented and discussed in this chapter.

4.1. Descriptive statistics results

In this section, the amassed facts had been discussed, analyzed, presented. In doing so, the statistics gathered through the questionnaire had been presented in tables. Apart from this, the data collected through interview were merged together and interpreted with the result of the questionnaire. This chapter normally consists of presentation of the statistical outcomes obtained, illustrated tables, discussions of the outcomes got from the questionnaire and interview of the target population.

4.1.1. Demographic, socio and economic characteristics-

The complete of 80 respondents out of the 80 contributors that have been traded in ECX has participated in the study. The questionnaires had been allotted to80 members and all the individuals has filled and returned the questionnaire. Hence, the analysis and interpretation of the facts have been carried out using the responses of these respondents. Furthermore, records received via interviews had been additionally used in the analysis.

In this part, the demographic information of the respondents which includes gender, age and level of education were presented and analyzed below.

Table 3: Demographic characteristics of the respondents

Variables	Frequency	Percent
Sex		
Male	51	63.8
female	29	36.3
Education		
secondary	30	37.5
Graduate	50	62.5

Source: Own survey, 2020

From the table presented above from the total 80 respondents 63.8% were males and the rest 36.3% were female.

Since the trading system in ECX is an e-Trade and e-auction system it needs to be the member with an education level of secondary and graduate and from the table stated above 62.5% of the respondents has been graduated and the rest respondents complete a secondary education level.
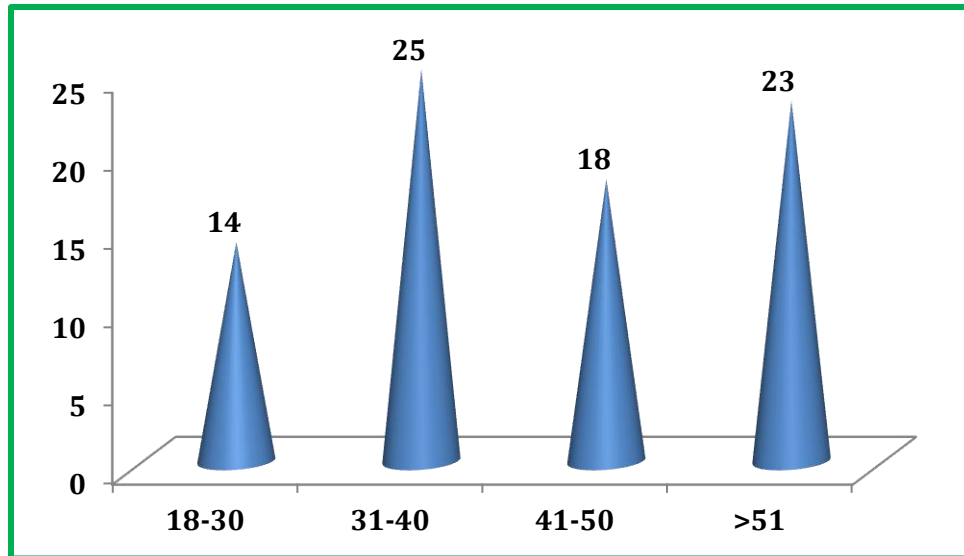
Source: Own survey, 2020

Figure 2: Respondents by Age

Concerning the age of respondents, as can be seen from figure1, the majorities of the respondents' (31.3%) were between age of 31-40 years; followed by 28.8% of the respondents

found in age group of >51 years. Moreover, there were 22.5% of respondents were on the age group of 41-50 the rest 17.5% were under youth age group (18-30 years old).

4.1.2. Results of market information dissemination channels

In this part data collected related to the first basic research question (Which market information dissemination channels of ECX are most frequently used) is presented and analyzed as follows:

Table 4: Source of Market information for Members

Source of Market information	Frequency	Percent
ECX Channel	63	78.75
Traders	17	21.25

Source: Own survey, 2020

From table 4 described above 78.75% of the members that has been transacted in ECX used market information which is disseminated through ECX dissemination channels whereas the rest 21.25% of the respondents get market information from traders. This denotes that, ECX members that have been traded in ECX mostly used ECX's market information disseminated through different market price dissemination channels.

Therefore, market information disseminated from Ethiopia Commodity Exchange remains as a source of agricultural market information for members that has traded in ECX which members of ECX are a representatives of many other clients for commodities that has been traded in ECX like coffee, Sesame, Haricot Bean, Green Mung Bean and Soya Bean respectively.

Table 5: ECX's frequently used Market price dissemination channels

Parameters of Market Dissemination Channels	AN	S S	S	F	AA	Mean	St.dev.
Electronic Price Ticker	0	16	10	0	54	1.45	0.71
Short Message Service		16	8	40	16	3.8	0.88
Interactive Vocie Record	0	0	0	33	47	4.59	0.50
Market Information Kiosk	0	5	0	17	58	4.67	0.594143
Radio	0	22	0	31	27	4.06	0.79
Television	2	27	21	26	4	3.11	0.94
Website	9	27	34	8	2	2.5	0.914

NB: AA= Almost Always; F=frequently; SS=Sometimes; S=Seldom; and AN=Almost never
Source: Own survey, 2020

Market information, at first, disseminated by way of phrase of mouth, as market user's journey to from the market to other locations especially from essential market location which all merchants grow to be collectively which is convenient to share ideas. As the market evolves, market information is also often passed by newspapers that are disseminated within the market's catchment area; today such information can also be disseminated by radio, telephone links and via the web. (CTA, 2006).

It is obvious that, illiterate peoples are shrinking back from the use of technologies that require a certain stage of literacy than these people who are sufficiently literate. Moreover, literate peoples are extra interested to search and use facts on shortest time viable for their immediately needs. In this study, ECX member's choice of a channel via which ECX currently disseminates agricultural market facts for them. The mean score and t-tests results illustrated in table 17 confirmed statistically full-size differences at P<.05 level of 5 percent never used, 20 percent seldom and the rest 12.5 percent of the respondents select sometimes use EPT.

The parameter that identifies the type of market information dissemination channels that ECX members are using SMS, the overall summarized result revealed that 10 percent seldom, 20 percent some times, 50 percent frequently and the rest 20 percent of the respondents select almost always use SMS.

The parameter that identifies the type of market information dissemination channels that ECX members are using IVR; the overall summarized result revealed that 41.25 percent frequently and the rest 58.75 percent of the respondents select almost always use IVR to get a market information.

The parameter that identifies the type of market information dissemination channels that ECX members are using Market Information Kiosk; the overall summarized result revealed that 6.25 percent sometimes, 21.25 percent frequently and the rest 72.5 percent of the respondents select almost always use Market Information Kiosk to get a market information from ECX.

The parameter that identifies the type of market information dissemination channels that ECX members are using Radio; the overall summarized result revealed that 27.5 percent some times, 38.75 percent frequently and the rest 33.75 percent of the respondents select almost always use Radio to get market information from ECX.

The parameter that identifies the type of market information dissemination channels that ECX members are using Television; the overall summarized result revealed that 2.5 percent Never used, 26.25 percent seldom used, 33.75 percent some times, 32.5 percent frequently and the rest 5 percent of the respondents select almost always use Radio to get market information from ECX.

The parameter that identifies the type of market information dissemination channels that ECX members are using ECX website; the overall summarized result revealed that 11.25 percent Never used, 42.5 percent seldom used, 33.75 percent some times, 10 percent frequently and the rest 2.5 percent of the respondents select almost always use ECX website to get market information from ECX.

The table evidently indicated that, all the channels were frequently used by more educated members. This was particularly high regarding the utilization of radio, Mobile, Interactive Voice Service and Electronic Price Ticker by educated members and share to their clients that are not a member of ECX. This could indicate the influence of educational status of rural client's in the utilization of channels through which ECX disseminates market information for them. The findings of this study identified that preference of market information dissemination channel of ECX were showed that statistically significant differences by members that are traded in ECX whom they share the information to their clients.

4.1.3. Result on effectives of market information dissemination channels

In this part respondents data collected related to the second basic research question were presented and analyzed.

Table 6: Effectiveness of ECX's market information in terms of evaluating criteria

Parameters of Effectiveness of ECX market information	VL	L	M	H	VH	Mean	St.dev.
Comprehensiveness	0	0	0	55	25	4	0.47
Accuracy	0	0	0	55	25	4	0.47
Usability	0	0	0	45	35	4	0.50
Timeliness	0	0	0	55	25	4	0.47
Accessibility	0	6	39	26	9	3	0.80
Relevancy	0	0	37	40	3	3	0.57
Economic	0	0	3	54	23	4	0.52
Effectiveness of ECX							

NB: VH= Very High; H= High; M=Moderate; L=Low; and VL=Very Low

Source: Own survey, 2020

It is believed that the major purpose of disseminating market information is to provide pertinent information up to the expectation of major users (IFPRI, 2012).

Thus in order to measure the extent of achievement of market information objectives; comprehensiveness of the information, accuracy and trustworthiness, usability, timeliness, accessibility, economic, relevance and clarity are usually used by professionals and practitioners were used as a criteria. Considering the above stated facts, ECX members were asked to rate the effectiveness of market information disseminated by ECX using the criteria listed in table 18. As can be seen from the data of the table, the highest rating result (M=4.44, SD=.499) was identified for Usability, in that, market information of ECX is transmitted to members whom they represent thousands of clients is very important and it was highly helped them to make marketing decision related to their commodities. Moreover, the accuracy and timeliness are the second highest criteria with a mean of 4.31 and S/D of 0.166 respectively. Economical, that is, receiving ECX's market information is cost effective for members, was rated 4.25 mean score (SD=.516) and ranked the third criteria with highest effectiveness rating results. The fourth and fifth highest criteria with 3.575mean score (SD=.569) was about Relevance of market information disseminated by ECX for ECX members.

On the other hand, the effectiveness of ECX's market information in terms of comprehensiveness was rated by ECX members the least mean score among the seven criteria listed in the table and (M= 4.31, SD=.466); followed by accessibility (M= 3.475, SD=.795 indicating, ECX's market information were not equally accessible for all rural clients and does not sufficiently included information regarding all types of commodities, prices, price trends, supply movements, stocks and demand conditions at each level of the market in which ECX members have a share.

In general, the effectiveness of ECX's market information with respect to the criteria listed in table 18 varies between a minimum of 2.56 mean score and a maximum of 3.85 mean score.

The result on table 6 above, on the parameter to measure the effectiveness of market information dissemination channels about its comprehensiveness of the information, the overall summarized result revealed that 68.75 percent of them select high and the rest 31.25 percent of the respondents select very high.

The parameter to measure the effectiveness of market information dissemination channels about its accuracy of the information that the respondents gets from ECX dissemination channels, the overall summarized result revealed that 68.75 percent of them select high and the rest 31.25 percent of the respondents select very high.

The parameter to measure the effectiveness of market information dissemination channels about the usability of the information that the respondents gets from ECX dissemination channels, the overall summarized result revealed that 56.25 percent of them select high and the rest 43.75 percent of the respondents select very high.

The parameter to measure the effectiveness of market information dissemination channels about the timeliness of the information that the respondents gets from ECX dissemination channels, the overall summarized result revealed that 68.75 percent of them select high and the rest 31.25 percent of the respondents select very high.

The parameter to measure the effectiveness of market information dissemination channels about the accessibility of the information that the respondents gets from ECX dissemination channels, the overall summarized result revealed that 7.50 percent very low, 48.75 percent moderate, 32.5 percent of them select high and the rest 11.25 percent of the respondents select very high.

The parameter to measure the effectiveness of market information dissemination channels about the relevancy of the information that the respondents gets from ECX dissemination channels, the overall summarized result revealed that 46.25 percent moderate, 50 percent of them select high and the rest 3 percent of the respondents select very high.

The parameter to measure the effectiveness of market information dissemination channels about the Economic impact of the information that the respondents gets from ECX dissemination channels, the overall summarized result revealed that 3.75 percent moderate, 67.5 percent of them select high and the rest 28.75 percent of the respondents select very high.

That is bellow 'High' level of respondent's ratings and above 'Low' level of their responses. However, the overall results illustrated in figure 4.3 indicated the effectiveness of ECX's market information was found at moderate level.

As Evans and Berman (2001), portrait that market information, especially charge facts will help the marketer to take selections on how lots to cost and the place to sell the product. Once the marketer has get entry to market facts related to the variety of product wanted by means of the target market, price, distribution channels, etc. it becomes simpler to make marketing decision.

4.1.4. Challenges of ECX Members in using ECX's Market Information

ECX members have faced with various problems in utilization of market information disseminated from ECX. Respondents were asked to rate the degree of the challenges using rating scale.

Table 7: Factors that influence ECX members using Market information disseminated by ECX

Variables	Mean	Std. Dev.
Shortage of adequate electricity service in the area	4.275	0.502525
Insufficiency and interruption of telecommunication service in the area	4.425	0.522288
Poor roads that link the rural areas to the place where ECX's market information is to be obtained	4.25	0.51558
Lack of rural clients knowledge to understand and analyze market information disseminated by ECX	4.25	0.51558
Absence of market information receivers in the area (like Price Board, TV, Radio, Mobile, …) in person or group	1.8375	0.48896
Obsolesce of the information disseminated by ECX with current market	1.8375	0.48896
The language used to disseminate ECX's market information is not known by rural clients in the area	1.8	0.43283
Frequent disruption of electronic price board found around the area	1.8	0.43283

Note: 5=Very High; 4=High; 3=Moderate; 2=Low; and 1= Very Low.
Source: Own survey, 2020

As revealed by table 7 Frequent disruption of electronic price board, the language used to disseminate market information, insufficient telecommunication and electric services, Lack of knowledge to understand and analyze market information, distance from where electronic price board is located, Poor roads that link the rural areas and Absence of market information receivers problems exist.

According to e-forum held via World Bank 2012, Information be developed in accordance to want of the end customers (e.g. farmers), and furnished in neighborhood languages, in simple, interactive form. Farmers lack pertinent records to enhance their productivity and claims that excessive degrees of illiteracy keep them from making use of written sources of information, besides incapability to use the services owing to the low ranges of pc literacy.

Market facts can be affected via a number of factors related to disseminator, channel, person or any different external factors. Particularly the effectiveness of market facts can be affected via

the user's facet variables in phrases of their literacy level, monetary reputation to have the receivers, understanding transmission language, attitude toward market records and the like.

Considering these facts ECX Members were asked to rate major factors that hinder their utilization of ECXs' market information effectively. In relation to these, response of those respondents, nine factors were identified by them and illustrated in table 4.8. According to their responses, top five factors currently affecting utilization and significance of market information disseminated by ECX are:

1. Insufficiency and interruption of telecommunication (M=4.425, SD=0.522)
2. Shortage of adequate electric services (M=4.275, SD=0.503)
3. Poor roads that link the rural areas to the place where ECX's market information is to be obtained (M=4.25, SD=0.516)
4. Lack of rural clients knowledge to understand and analyze market information disseminated by ECX (M=4.25, SD=0.516) and
5. Frequent disruption of electronic price board (M=1.8, SD=0.433),

The mean score of the top five factors (above 4.00 mean score) clearly indicated that those factors have high level of influence on members that are representatives of many clients to use the information effectively.

On the other hand obsolescence of information (M=1.84, SD=0.488) was identified as a least factor by respondents. This means ECX members were not strongly affected by obsolescence of information as the remaining eight items listed in table 7. However the calculated mean result for this item shows the extent of its influence was found above moderate level.

4.1.5. Correlation results

The data showed in table 8 presented below the results of correlation matrix; that indicated the choices of market price dissemination channels are positively related with educational levels of members. As educational status of the respondents increased their preference of website (r(80)=.176, P<0.05), MIK (r(80)=.38, P<0.05), IVR (r(80)=.347, P<0.01), SMS(r(80)=.0, P<0.05), EPT (r(80)=.092, P<0.01) and TV (r(80)=-0.155, P<0.05) as source of market information disseminated from ECX would also raise.

The degree of their relationship varies between Moderate level (regarding website, EPT and Radio) and lower level for Mobile Phone SMS, Interactive Voice Response and TV.

Moreover, the data of the table showed the choice of market information channels by members was negatively related with their age; in that, as the age of them increased their utilization of channels as a source of market information disseminated from ECX would decreases. Particularly, this was statistically significant for Radio ($r (80) = -.197$, $P < .05$), Website ($r (80) = -0.075$, $P < .05$), TV ($r (80) = -0.074$, $p < .05$) and IVR ($r (80) = -0.035$, $p < .05$).

In general, the results of table 4.5 showed that, as the age of members increased utilization of channels decreases. However, statistically significant relationship was not observed at 0.05 levels of confidences for channels like Electronic Tickers, website and TV. On the other hand the results of the table identified that, as the level of Education increases; the practice of utilizing channels of ECX also increases. This was statistically significant at 0.05 levels of confidences for all channels.

In general ECX members in the study area frequently obtained agricultural marketing information of ECX through MIK (M=4.66, SD=0.594), followed by Interactive Voice Response (M=4.59, SD=.495) and Radio (M=4.06, SD=.785). However, there was significant variation among ECX members in using market information dissemination channels between different age groups and by their educational status.

But, Regarding Electronic Price Ticker (M=1.45, SD=.71) was not used frequently by members to get market information since most electronic price tickers are not functional.

As stated by ECX (January 2015), the purpose of installing electronic price tickers was to disseminate agricultural price information in real time to producers, consumers, and traders. According to UNDP (2012), it also used to transmit any change of price information directly in real time to the users.

However, the practice was very much different from the intended purpose of installing electronic price tickers across rural areas of the country. According to the reports of Ethiopia Commodity Exchange (January 2019), there are 119 Rural Electronic price Tickers installed in strategically selected Woredas' across the country. However, most of them are not actively serving the rural clients to obtain market information disseminated by Ethiopia Commodity Exchange. Yet, in their interview responses, the officials are assumed as Electronic Price Tickers was most frequently used than other channels which was not coincide with what was responded by rural clients and actual practices stated in their own recent reports.

Table 15: Correlation Matrix between Channels and member's educational level and age

		Age	Education	EPT	SMS	IVR	MIK	Radio	TV	Website
Age	Pearson Correlation	1	-0.019	0.081	.299**	-0.035	-0.197	.246*	-0.074	-0.075
	Sig. (2-tailed)		0.867	0.475	0.007	0.755	0.08	0.028	0.511	0.508
Education	Pearson Correlation	-0.019	1	0.092	0.03	.347**	0.038	-0.103	-0.155	.227*
	Sig. (2-tailed)	0.867		0.419	0.794	0.002	0.736	0.361	0.169	0.042
EPT	Pearson Correlation	0.081	0.092	1	-0.159	0.031	-0.086	0.017	-0.209	0.176
	Sig. (2-tailed)	0.475	0.419		0.16	0.788	0.451	0.881	0.062	0.119
SMS	Pearson Correlation	.299**	0.03	-0.159	1	0.041	-0.18	-0.037	-0.003	-0.142
	Sig. (2-tailed)	0.007	0.794	0.16		0.719	0.111	0.746	0.978	0.209
IVR	Pearson Correlation	-0.035	.347**	0.031	0.041	1	.338**	0.067	0.101	-0.014
	Sig. (2-tailed)	0.755	0.002	0.788	0.719		0.002	0.554	0.374	0.902
MIK	Pearson Correlation	-0.197	0.038	-0.086	-0.18	.338**	1	-.226*	-.316**	0.012
	Sig. (2-tailed)	0.08	0.736	0.451	0.111	0.002		0.044	0.004	0.918
Radio	Pearson Correlation	.246*	-0.103	0.017	-0.037	0.067	-.226*	1	0.093	0.168
	Sig. (2-tailed)	0.028	0.361	0.881	0.746	0.554	0.044		0.411	0.137
	N	80	80	80	80	80	80	80	80	80
TV	Pearson Correlation	-0.074	-0.155	-0.209	-0.003	0.101	-.316**	0.093	1	-0.125
	Sig. (2-tailed)	0.511	0.169	0.062	0.978	0.374	0.004	0.411		0.269
	N	80	80	80	80	80	80	80	80	80
Website	Pearson Correlation	-0.075	.227*	0.176	-0.142	-0.014	0.012	0.168	-0.125	1
	Sig. (2-tailed)	0.508	0.042	0.119	0.209	0.902	0.918	0.137	0.269	
	N	80	80	80	80	80	80	80	80	80

From Table 9 revealed that there is significant relationship between criteria to evaluate the effectiveness of market information disseminated by ECX. As market information become economic, comprehensiveness, accessibility, accuracy and trustworthiness, timeliness, usability and relevance and clarity of the market information increased the overall effectiveness of the information also increased. Strong relationships were observed between criteria's and overall effectiveness.

Table 16: Correlation Matrix between market information evaluating criteria and Effectiveness of ECX's market information

		Comprehensive	Accuracy	Usability	Timeliness	Accessibility	Relevance	Economic
Comprehensive	Pearson Correlation	1	1.000^{**}	$.764^{**}$	1.000^{**}	.209	$-.400^{**}$	$.461^{**}$
	Sig. (2-tailed)		0.000	.000	0.000	.063	.000	.000
	N	80	80	80	80	80	80	80
Accuracy	Pearson Correlation	1.000^{**}	1	$.764^{**}$	1.000^{**}	.209	$-.400^{**}$	$.461^{**}$
	Sig. (2-tailed)	0.000		.000	0.000	.063	.000	.000
	N	80	80	80	80	80	80	80
Usability	Pearson Correlation	$.764^{**}$	$.764^{**}$	1	$.764^{**}$	.012	$-.541^{**}$	$.455^{**}$
	Sig. (2-tailed)	.000	.000		.000	.916	.000	.000
	N	80	80	80	80	80	80	80
Timeliness	Pearson Correlation	1.000^{**}	1.000^{**}	$.764^{**}$	1	.209	$-.400^{**}$	$.461^{**}$
	Sig. (2-tailed)	0.000	0.000	.000		.063	.000	.000
	N	80	80	80	80	80	80	80
Accessibility	Pearson Correlation	.209	.209	.012	.209	1	.004	.108
	Sig. (2-tailed)	.063	.063	.916	.063		.971	.340
	N	80	80	80	80	80	80	80
Relevance	Pearson Correlation	$-.400^{**}$	$-.400^{**}$	$-.541^{**}$	$-.400^{**}$	.004	1	-.194
	Sig. (2-tailed)	.000	.000	.000	.000	.971		.084
	N	80	80	80	80	80	80	80
Economic	Pearson Correlation	$.461^{**}$	$.461^{**}$	$.455^{**}$	$.461^{**}$	.108	-.194	1
	Sig. (2-tailed)	.000	.000	.000	.000	.340	.084	
	N	80	80	80	80	80	80	80
**. Correlation is significant at the 0.01 level (2-tailed).								

Moreover, correlation coefficient calculated between the items identified as influencing factors and effectiveness of market information in the study area also showed negative relationship at 0.05 level of significance for all items listed in the table 9.

The table further indicates the presence of strong negative relationship between top four influencing factors identified in table 9 and effectiveness of market information. In similar manner, the two factors identified as least challenges among the items listed in table 9 also confirmed by having weak relationship with effectiveness of market information illustrated in table 8.

In sum, the result of descriptive statistics illustrated in table 9and a correlation matrix of table 10 were supported each other in identified major challenges who have strong influence on effectiveness of market information and statistically significant at 0.05 level of significance.

Moreover, an interview response regarding challenges of market information among ECX members also identified similar issues listed in table 10. They emphasized problem related to telecommunication services and adequacy of electricity.

They said that because of frequent disruption of electric power and interruption of telecommunication service they usually faced difficulty to properly disseminate market information through price ticker board in the study areas. However, they did not mentioned language of transmission as a major challenge while they mention literacy level of the client's that the ECX members are representing as a problem. In addition, more than 90% of the price tickers are not functional because of the outdated technology that can't be maintained easily to make it functional.

In general, all the above responses obtained through questionnaire and interview indicated that the major challenge affecting the effectiveness of market information utilization by ECX members were associated with infrastructure (electric and telecommunication service), language used for production and dissemination of the information and knowledge to understand and analyze market information disseminated by ECX.

Table 10: Correlation between the items identified as influencing factors and effectiveness of market information

	Shortage	Insufficency	Poor roads…	lack of rural…	Absence_in ~s	Obsolesce_ ~n	The_langua ~e	Frequent_d ~n
Shortage	1.0000							
Insufficency	0.7065	1.0000						
Poor roads…	0.9038	0.6346	1.0000					
lack of rural…	0.9038	0.6346	1.0000	1.0000				
Absence_in ~s	(0.0219)	0.0260	(0.0377)	(0.0377)	1.0000			
Obsolesce_~ n	(0.0219)	0.0260	(0.0377)	(0.0377)	1.0000	1.0000		
The_langua ~e	0.0233	(0.0112)	0	0	0.9211	0.9211	1.0000	
Frequent_d~ n	0.0233	(0.0112)	0	0	0.9211	0.9211	1.0000	1.0000

4.2.   Econometrics model result

4.2.1. Multiple Linear Regression Model Assumptions

4.2.1.1.   Multicollinearity

Multicollinearity is one of the assumptions that need to be fulfilled to have a suited parameter estimates of OLS regression coefficients, Multicollinearity is a problem that take place when the unbiased variables have a linear relationship with every other. In order to check this assumption Variance inflating issue (VIF) take a look at used to be used after running the regression. The interpretation is executed as if there is any variable that has a VIF value greater than 10 it is the indication of the existence of collinearity among explanatory variables. Hence, as we can see in table 11 all variables have much less than 10 which point out that there is no problem of Multicollinearity.

Table 17: Multicollinearity test result

Variable	VIF
MIK	1.59
TV	1.31
IVR	1.28
EPT	1.17
SMS	1.14
Radio	1.13
Website	1.09
Mean VIF	1.24

4.2.1.2.   Heteroskedasticity

The researcher conducted Breusch Pagan / Cook-Weisberg test for Heteroskedasticity to test whether a systematic pattern in the errors exists and whether the variances of the errors are constant or not. The result shown below showed that there is no Heteroskedasticity problem.

```
Breusch-Pagan / Cook-Weisberg test for heteroskedastic
> ity
        Ho: Constant variance
        Variables: q6_where_do_we_get_info

        chi2(1)      =      0.09
        Prob > chi2  =   0.7621
```

4.2.1.3. Normality

On the residuals disclosed the fact that the residuals were not normally distributed. Without the assumption of normal distribution of error terms (residuals) statistics derived for testing hypothesis would be misleading. However, given the large sample (347) used in the study the distributions of F, t would approach normal distribution, making the inference reliable. Moreover, the values inferred under these distributions were mere approximations rather than precise estimates. Approximations approach actual values as the sample size increases. An 'F Test on joint significance of co-efficient estimates gave a p-value of zero indicating the significant.
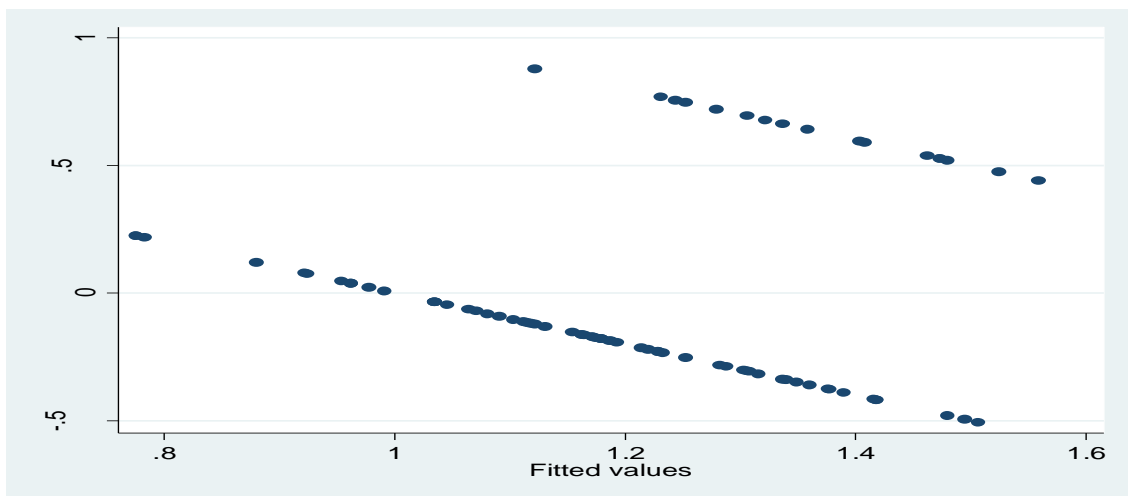
chi2(1) = 15.02 Prob > chi2 = 0.0001
Figure 3: Normality Residual Test

4.2.1.4. Overall model goodness

The overall model goodness or wellbeing of the multiple linear regression model result indicated by a combination of both ANOVA or F statistics result and R- square. A shown on below table 24 below indicates that ANOVA or F statistics with (7, 72) result with a value of 43.28 statistically significant at 1% level of significance level which indicates that the wellbeing of the model is good or well fit in representing the actual empirical data. In addition, coefficient of determination or R-square explained 82.14 percent of the variation in the level of effectiveness of market information dissemination channels is explained by the selected explanatory variables and the remaining 18.86 percent are not explained in the model. Therefore, based on a

combination of both ANOVA and F statistics result and R- square results the overall model well fit and should be interpreted.

Dependent variable

The dependent variable is the effectiveness of market price dissemination channels and it can be measured by several attributes such as **Comprehensive information:** Market information disseminated by ECX covers all types of commodities, including prices, price trends, supply movements, stocks, **Accuracy and trustworthiness:** The market information provided by ECX are accurate and trustworthy, **Usability:** The provision of ECX's market information is in usable form. **Timeliness:** Market Information of ECX is transmitted timely to rural clients to made decisions, **Accessibility:** Market information disseminated by ECX are equally access to all rural clients, **Relevance and clarity:** market information disseminated by ECX is relevant, clear and understandable by clients and **Economic:** Receiving ECX's market information is cost effective for rural clients.

Independent Variables:-The independent variables include the market price dissemination channels like EPT, SMS, IVR, MIK, Radio, TV, and website

Table 12: Multiple Linear Regression Model result

Variables	Coef.	Robust Std. Err.	t- ratio	p-value
EPT	0.098***	0.063956	1.48	0.0067
SMS	0.140**	0.528403	2.66	0.01
IVR	0.044	0.101238	-0.45	0.0045
MIK	0.025	0.080176	2.69	0.009
Radio	0.158**	0.053464	2.68	0.0049
TV	0.087**	0.053805	1.65	0.039
Website	0.015**	0.046201	0.3	0.038
Constant	-0.978***	0.604031	-2.01	0.048
Number of obs.	80			
F(7, 72)	.4328*			
R-square	0.8214			

Interpretation of significant variables

Based on table 12 model result, EPT has Postive and significant effect on market price dissemination channels at a 1% statistical significance level. The postive coefficient of EPT services shows that as EPT market information dissemination channel service inccreases by one unit keeping other variables constant, the level of effectiveness of market price dissemination disseminated through EPT decreased by 0.098 units. The result of this study is consistent with Dereje (2011) and Solomon (2015) finding on their respective similar studies conducted at various institutions.

On the table described above, SMS has positive and significant effect on market price dissemination channels at a 1% statistical significance level. , The result implies ECX members can easily get market information through the dissemination channel of SMS. The result of this study is consistent with Dereje (2011) and Solomon (2015) finding on their respective similar studies conducted at various institutions.

On the table described above, IVR has positive and significant effect on market price dissemination channels at a 1% statistical significance level. The positive coefficient of IVR services shows that as IVR market information dissemination channel service increases by one unit keeping other variables constant, the level of effectiveness of market price dissemination disseminated through IVR increased by 0.044units. The result implies ECX members can easily get market information through the dissemination channel of IVR. The result of this study is consistent with (Dereje 2011) and(Solomon 2015) finding on their respective similar studies conducted at various institutions.

On the table described above, MIK has positive and significant effect on market price dissemination channels at a 1% statistical significance level. The positive coefficient of MIK services shows that as MIK market information dissemination channel service increases by one unit keeping other variables constant, the level of effectiveness of market price dissemination disseminated through MIK increased by 0.025 units. The result implies ECX members can easily get market information through the dissemination channel of MIK. The result of this study is consistent with (Dereje 2011) and (Solomon 2015) finding on their respective similar studies conducted at various institutions.

On the table described above, Radio has positive and significant effect on market price dissemination channels at a 1% statistical significance level. The positive coefficient of Radio services shows that as Radio market information dissemination channel service increases by one unit keeping other variables constant, the level of effectiveness of market price dissemination disseminated through Radio increased by 0.158 units. The result implies ECX members can easily get market information through the dissemination channel of Radio. The result of this study is consistent with (Dereje 2011) and (Solomon 2015) finding on their respective similar studies conducted at various institutions.

On the table described above, TV has positive and significant effect on market price dissemination channels at a 1% statistical significance level. The positive coefficient of TV services shows that as TV market information dissemination channel service increases by one unit keeping other variables constant, the level of effectiveness of market price dissemination disseminated through TV increased by 0.087 units. The result implies ECX members can easily get market information through the dissemination channel of TV. The result of this study is consistent with (Dereje 2011) and (Solomon 2015) finding on their respective similar studies conducted at various institutions.

On the table described above, Website has positive and significant effect on market price dissemination channels at a 1% statistical significance level. The positive coefficient of Website services shows that as Website market information dissemination channel service increases by one unit keeping other variables constant, the level of effectiveness of market price dissemination disseminated through Website increased by 0.015 units. The result implies ECX members can easily get market information through the dissemination channel of Website. The result of this study is consistent with (Dereje 2011) and (Solomon 2015) finding on their respective similar studies conducted at various institutions.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

5.1. Summary

The major purpose of this study was to examine the effectiveness of market information disseminated by Ethiopia Commodity Exchange (ECX) to ECX members licensed to trade in ECX. In order to achieve this objective, attempt was made to answer three basic research questions: which market information dissemination channels of ECX are most frequently used by ECX members whom they are a representatives of many clients in the study area; how much ECX's market information is effective in terms of production, pricing, place, promotion and expected benefits for members of ECX in the study area; and what are the challenges members are facing in using ECX's market information dissemination in the study area.

To answer these basic research questions the data were collected through questionnaire and interview. The questionnaire was initially distributed to 80 respondents. All the respondents were correctly filled and returned. Thus, the analysis and interpretation of the data were carried out using the responses of those respondents. Furthermore, data obtained through interview were also used in the analysis.

Thus, based up on analysis of the data; summary of major findings of the data, conclusions made on the base of the findings and recommendations forwarded were presented here under.

The majorities of the respondents' (28.8%) were between age of 31-40 years; followed by 25% of the respondents found in age group of >51 years. Moreover, there were 22.5% of respondents were on the age group of 41-50 the rest 17.5% were under youth age group (18-30 years old).

In general, data related to the demographic characteristics of the respondents showed the dominance of the number of male respondents and those respondents graduated from higher institutions.

Here the dominance of male respondents happened as a result of the number of registered male members in ECX.

Market information disseminated from Ethiopia Commodity Exchange was used by majority of rural clients 63(78.75%) as a major source of agricultural market information. Overall frequency of market information utilization of the respondents was found at moderate level.

ECX members frequently obtained agricultural market information disseminated from Ethiopia Commodity Exchange (ECX) through Radio (M=4.06, SD=0.785),IVR service (M=4.59, SD=0.495) and Mobile Phone Short message service (M=3.8, SD=0.877).

However, Electronic Price Ticker (M=1.45, SD=0.71) and website (M=2.5, SD=0.914) is not frequently used ECX members to get market information.

Moreover, the choice of market information channels by ECX members was inversely related with age of members. In that, as the age of them increased their frequency of utilization of channels as a source of market information disseminated from ECX would decreases. This is statistically significant at 0.05 level of confidence. In addition, the study clearly shows that of educational status, more educated ECX members of ECX are frequently utilized to satisfy their market information need.

Out of seven criteria used to measure the effectiveness of ECX's market information the minimum effectiveness result were 3.475 mean score regarding accessibility and 3.575 mean score concerning Relevancy. On the contrary the maximum effectiveness result was 4.44 mean score concerning Usability; which was followed by Comprehensiveness, Accuracy and timeliness which have an equal mean of 4.313. This implies relatively market Information of ECX was transmitted on the time required by ECX members,

ECX's market information is cost effective and the provision of ECX's market information is in usable form for ECX members. However, it was not equally accessed and did not cover all types of information required.

The overall result of ECX's market information effectiveness in terms of the seven criteria was found at moderate level. This indicated that, ECX members were not sufficiently benefited from the market information disseminated by ECX as intended with all its quality.

Among the challenges identified by respondents the major challenges that affect the effectiveness of market information in the study area includes the following five challenges

1. Insufficiency and interruption of telecommunication (M=4.425, SD=0.522)
2. Shortage of adequate electric services (M=4.275, SD=0.503)
3. Poor roads that link the rural areas to the place where ECX's market information is to be obtained (M=4.25, SD=0.516)
4. Lack of rural clients knowledge to understand and analyze market information disseminated by ECX (M=4.25, SD=0.516) and
5. Frequent disruption of electronic price board (M=1.8, SD=0.433),

In general, all the above responses obtained through questionnaire and interview indicated that the major challenge affecting the effectiveness of market information utilization by ECX members were associated with infrastructure (electric and telecommunication service), language used for production and dissemination of the information and knowledge of members to understand and analyze market information disseminated by ECX.

5.2. Conclusions

Based on the research findings', regarding the frequency of market information utilization practice of the respondents was found at moderate level. The reasons for this result being the majority of ECX members that represents many clients for commodities that has been traded in ECX were graduated.

On the other hand, ECX members frequently obtained agricultural market information disseminated from Ethiopia Commodity Exchange (ECX) through MIKs, IVR and Radio followed by Mobile Phone Short message service (SMS) and TV. However, Website and EPT were not usually used because it is not accessible for them, this may associated with technical failures, and frequent disruption of electric and telecommunication service. However, as stated by ECX Jan 2020 the basic purpose of installing EPT was to disseminate agricultural market information for rural clients in real time to fulfill their information need. However, the actual practices were very much different from the expected once. From this it is possible to conclude that EPT are not achieving its intended objectives. As a result ECX members are forced to use mostly IVR service and Radio as a means to get market information disseminated from Ethiopia Commodity Exchange.

Basically the effectiveness of any market facts is expressed via its significances and contributions it gives for key customers of the information.

Once the marketer has access to market information regarding the kind of product needed by the target market, price, dissemination channels, etc. it becomes easier to make marketing.

The effectiveness of any market facts should be mirrored via the output of end-users. However, the information transmitted for them should be evaluated to check whether they fulfill required standards specially accessibility, clarity timely, and the like. The findings of this learn about tested that for ECX participants the problem of clarity and time has been not a problem. Moreover, trouble associated to Relevance and clarity, usability, and accuracy of the market information have been no longer a collection issue. However, the difficulty of accessibility and the contribution of market information for participants had been not satisfactory.

It is generally concluded that the ECX members still faces problems accessing essential market information that could help them in making timely and accurate decisions. In general ECX members were not sufficiently benefited from the market information disseminated by ECX as intended with all its quality.

Thus, it is safe to conclude that the challenges of ECX members to use market information effectively was highly associated with production and dissemination of the information rather than receiving and utilizing the information.

5.3. Recommendations

The findings of this study confirmed that, although progress is being made in using ICT, like using MIK, SMS and IVR, to provide a wide range of information comparatively low.

Innovative approaches such as Market Information Kiosks (MIK) that serve as centers for providing a range of market information are not yet available in the country. In rural parts of Ethiopia, where access to information on individual basis may be costly and also

unavailable, such arrangements are believed to have the potential to bring the required market information to the users in the most cost effective way.

To increase accessibility to market information, information kiosks should be promoted in the rural areas. It is recommended if linkage is created between ECX and regions. Linked information kiosks with regions make accessible provision of market information to the rural clients. Rural Clients might take the form of short-term practical skills training about how to operate and utilize channels of ECX used to disseminate market information through invited TVET instructors as guest in addition to the information that has been provided through ECX members.

Just like other electronic tools, all ICT tools/facilities require power to function. However, as the finding of this study identified, ECX members are usually not with regular supply of electricity. Thus, this study suggests the utilization of solar power supply system especially for Electronic price tickers installed in rural areas. This can be facilitated by ECX in collaboration with local authorities.

This study identified that, the outcomes of market information disseminated by ECX were not get proper attention. ECX gave more attention for dissemination of the information than follow up and getting feedback about the results of market information disseminated through the channels.

Finally, although the findings of this study identify principal challenges that have an effect on ECX member's to use market information of ECX, there might be different influencing factors not assessed through this study. So, to investigate such factors and to take suitable movements on time; it is really helpful if in addition in-depth find out about is carried out on the problem associated to utilization of market facts at all tiers and branches of ECX specifically elements to be considered.

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APPENDIX

St. Mary's University
School of Graduate Studies
Institute of Agriculture and Development Studies
MA in Development Economics

Dear Respondents:

The main objective of this study is to assess the effectiveness of market price dissemination channels in the case of Ethiopia Commodity Exchange and your participation and cooperation is very relevant for the success of this study. Please provide answers to all questions with honesty and integrity. Rest assured that all information you would fill herein shall be kept confidential and no need of your name.

I would greatly appreciate your participation in this study
Sincerely!

General Direction:
- No need of writing your name in any page of the questionnaire
- Respond to all closed-ended questions by putting"√" marks in the box

Part I: Respondent's Background Information

1. Gender: Male ☐   Female ☐

2. Education : Basic Education ☐   Primary ☐   Secondary ☐ Graduate ☐

3. Age : 18-30 ☐   31-40 ☐   41-50 ☐   >51 ☐

4. Membership Status:

   Trading Member: Exporter ☐   Domestic Wholesaler ☐ Supplier ☐

   Intermediary Member: Exporter ☐ Domestic Wholesaler ☐pplier ☐

   Clients Exporter ☐   Akrabi ☐

Part II: Market Information Dissemination Channel Related Items

5. How did you hear about Ethiopia Commodity Exchange?

   Television ☐   SMS ☐
   Radio ☐   IVR ☐
   Newspaper ☐   Others,   please
   Magazine ☐   Specify--------------
   Internet ☐   --------------------
   Word of Mouth ☐

6. Where do you get market information so far?

    a) ECX Channel ☐   b) Traders) ☐   Friends ☐   Others ☐

7. How frequently do you use the market information disseminated by ECX?

    a) Every Day ☐   b)Sometimes ☐   c) Seldom ☐
       Not at all ☐   others, please specify --
      ----

8. What product/Commodity you usually transact at ECX using market information disseminated by the organization?

    a) Coffee ☐   b) Sesame ☐   c)Haricot Bean ☐

    d) Green Mung Bean ☐ e) Soya Bean ☐

9. In the following table market information dissemination channels of ECX are listed. Please read each statement and tick the channel you widely used to get market information using the rating scales: 5= Almost Always; 4= frequently; 3=Sometimes; 2=Seldom; and 1=Never.

No.	Channels	5	4	3	2	1
1	Electronic Price Tickers					
2	Mobile Phone Short Messaging Service (SMS)					
3	Interactive Voice Response (IVR) service					
4	Market Information Kiosks (MIK)					
5	Radio					
6	TV					
7	Website					

Please, justify the answers you gave for the above question.

Part III: Effectiveness of ECX's Market Information Dissemination Related Items

10. How do you rate the benefit you get from ECX's market information in terms of the items listed in the following table? Please use the rating scales (5= Very High; 4= High; 3=Moderate; 2=Low; and 1=Very Low) in responding each items of the table.

No.	Items	5	4	3	2	1
1	Encourages me to produce more commodity					
2	Helped me to produce different commodities					
3	Guides me to produce new product in the future					
4	Helped me to determine the price of the commodities					
5	Helped me to sale the commodities with reasonable prices and to obtain appropriate return					
6	Improves my bargaining and negotiation position					
7	Helped me to communicate with potential buyers of the commodities easily					
8	Helped me to save promotion time					
9	Make me to be free from incorrect promotion of others and unfair compactions					
10	Enables me to sale the commodities at central market with better price					
11	Allows me to sale the commodities at local primary market easily					
12	Help me to determine to sale the commodities at convenient place					

11. Overall, how do you rate the significances of market information you obtained from ECX in relation to the commodity you provide and the benefit you gained as a Client?

a)Very High ☐   b) High ☐   c) Moderate ☐   d)Low ☐
e)Very Low ☐

12. How do you rate the effectiveness of market information disseminated by ECX to rural clients of found in your locality in terms of the criteria listed in the following table? Please, use the rating scales: 5= Very High; 4= High; 3=Moderate; 2=Low; and 1=Very Low in responding each items of the table.

No.	Criteria	5	4	3	2	1
1	**Comprehensive information:** Market information disseminated by ECX covers all types of commodities, including prices, price trends, supply movements, stocks,					
2	**Accuracy and trustworthiness:** The market information provided by ECX are accurate and trustworthy					
3	**Usability:** The provision of ECX's market information is in usable form					
4	**Timeliness:** Market Information of ECX is transmitted timely to rural clients to made decisions					
5	**Accessibility:** Market information disseminated by ECX are equally access to all rural clients					
6	**Relevance and clarity:** market information disseminated by ECX is relevant, clear and understandable by clients					
7	**Economic:** Receiving ECX's market information is cost effective for rural clients					

Part IV: Challenges of Rural Clients to use ECX's Market Information

13. In the following table major challenges that influence rural clients using Market information disseminated by ECX are listed. Please, respond to each statement by putting a tick mark (☑) in the box that best describes the extent it influence you using the scales: 5=Very High; 4=High; 3=Moderate; 2=Low; and 1= Very Low.

No.	Factors/Challenges	5	4	3	2	1
1	Shortage of adequate electricity service in the area					
2	Insufficiency and interruption of telecommunication service in the area					
3	Poor roads that link the rural areas to the place where ECX's market information is to be obtained					
4	Lack of rural clients knowledge to understand and analyze market information disseminated by ECX					
5	Absence of market information receivers in the area (like Price Board, TV, Radio, Mobile, …) in person or group					
6	Obsolesce of the information disseminated by ECX with current market					
7	The language used to disseminate ECX's market information is not known by rural clients in the area					
8	Frequent disruption of electronic price board found around the area					
9	Long distance where electronic price board is located from rural clients					

14. Would you please list any other challenges you had been facing in using market information disseminated by ECX.

----

15. What would you suggest to improve the utilization of market information disseminated by ECX in your area?

THANK YOU!!!

Interview Questions

1. Is there any consideration of the types of channels for rural clients producing and disseminating market information by ECX?

2. Which channel do you think rural clients widely used to get market information disseminate from ECX? What is the reason they prefer this channel?

3. How much do you believe rural clients are benefited by market information disseminate from ECX (effectiveness) with regards to outcomes or marketing mix(Product development, price setting, promotion and place choice) for rural clients?

4. What challenges do you think rural clients were affected from effective utilization of market information disseminate from ECX?

5. Personally what do you suggest for the improvement of market information disseminated for rural clients?

6. If any additional idea

THANK YOU!!!

Multiple Linear Regression Model result

Number of Obs. = 80

F(7,72) = 43.28

Prob>F = 0.0232

R-squared = 0.8214

Adj R-squared = 0.7923

Root MSE = .38668

variable	Coef.	Robust Std.Err.	t	P>/t/	(95% Conf.Interval)	
EPT	0.098	0.064	1.48	0.0067	-0.341517	0.2302124
SMS	0.140	0.528	2.66	0.0100	0.0349761	0.2456466
IVR	0.044	0.101	-0.45	0.0045	-0.2427853	0.1538823
MIK	0.025	0.080	2.69	0.0090	0.0644738	0.4322625
Radio	0.158	0.053	2.68	0.0049	0.0405993	0.2751563
TV	0.087	0.054	1.65	0.0390	-0.0184287	0.1927104
Website	0.015	0.046	0.3	0.038	-0.084296	0.1138408
cons	(1.366)	0.604	-2.01	0.0480	-2.721294	-0.0116211