Adama Science and Technology University

School of Business and Economics

Department of Management

Effectiveness of Ethiopia Commodity Exchange's Market Information Dissemination among Rural Clients: the Case of Adama Branch

By

Solomon Bacha

June, 2015

Adama, Ethiopia

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A Thesis Submitted to the School of Business and Economics Department of Management in Partial Fulfillment of the Requirements for the Degree of Master of Arts in Business Administration

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CERTIFICATE

This is to certify that this Thesis work, "**Effectiveness of Ethiopia Commodity Exchange's Market Information Dissemination among rural clients: the Case of Adama Branch**", undertaking by Solomon Bacha for the partial fulfillment of Masters of Business Administration (MBA) at Adama Science and Technology University is an original work and not submitted earlier for any degree either at this University or any other University.

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Research Advisors

Declaration

I, Solomon Bacha declare that this entitled **"Effectiveness of Ethiopia Commodity Exchange's Market Information Dissemination among rural clients: the Case of Adama Branch",** is the outcome of my own effort and study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently except for the guidance and suggestion of the Research Advisors.

This study has not been submitted for any degree in this University or any other University. It is offered for the partial fulfillment of the degree of Masters of Business Administration (MBA).

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Acronyms

CTA	Technical Centre for Agricultural and Rural Cooperation
ECX	Ethiopia Commodity Exchange
FAO	Food and Agriculture Organization of United Nations
FGD	Focus Group Discussion
FTC	Farmers Training Center
GSM	Global System for Mobile Communications
ICTs	Information and Communication Technologies
IDRC	International Development Research Centre
IVR	Interactive Voice Response
KACE	Kenya Agricultural Commodity Exchange
MI	Market Information
MIS	Market Information System
REPT	Rural Electronic Price Ticker
TVET	Technical and Vocational Education and Training

Abstract

The purpose of the study was to examine the effectiveness of Ethiopia Commodity Exchange's market information dissemination among rural Clients registered under Adama Branch more specifically the objective of the study emphasis gave to explore the kind of market information dissemination channels of ECX most frequently used by rural clients in the study area, investigate the effectiveness of ECX's market information for rural clients to make decision about production, pricing, place and promotion and identify the challenges rural clients 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 rural clients in the study area, how much ECX's market information is effective to make decision about production, pricing, place and promotion what are the challenges rural Clients are facing in using ECX'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 158 rural clients using simple random sampling technique. In addition interview was administered with all three employees of ECX market data department. The analysis of quantitative data was made using descriptive statistics; correlation coefficient and t-test were used. The qualitative data were discussed in triangulation to the analysis of the quantitative data. The result of data analysis showed that Radio is most frequently used by rural clients and followed by SMS. However, REPT was not frequently used as intended. Moreover, the effectiveness of Market information for rural clients was found at moderate level. The challenges rural clients faced to use market information were associated with infrastructure, language used for production and dissemination of the information and knowledge of rural clients 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 forum and action research for feedback were forwarded.

Key terms: Market Information, Channel, Market Information Effectiveness, Challenges, Rural clients

Chapter One

1. Introduction

1.1. Background of the study

"Marketing is rapidly becoming a game where information, rather than raw marketing muscle, wins the race for competitive advantage" Mullins et al, (2011). Information is very important for the overall development of any country, where appropriate use of scarce resources is critical. Decision makers at every level of the economy need relevant and up-to-date information to assist them. "Information needs, accessibility, utilization is being dictated by circumstances man finds himself. The environment that people interact with from the cradle of civilization indicates serious challenges to man in the process of achieving his daily goals and objectives in the areas of economic, social, cultural and spiritual wellbeing. Information itself is not mobile but needs a vehicle of dissemination from one man to another and from one distance to another" (Familusi & Oweleye 2014). The medium of this dissemination could be called a channel. Technology has made it possible for human being to communicate easily irrespective of geographical location through the aid of telephones, telegram, fax, radiophone, television, e-mail, internet, intranet, computer etc. Issa (1997) cited by (Familusi & Oweleye 2014)

Smallholder farmers' in the world requires up to date knowledge and information in order to effectively and efficiently perform their farming practices. The knowledge and information that farmers demand ranges from accessibility of new farming methods, availability of weather forecast and supply as well as price of inputs and outputs, among others. (UNDP 2012)

Market information system is a system that is designed to provide an organized flow of information to enable and support the marketing activities. Marketing information is the lifeblood of marketing process. The importance and use of improved agricultural market information in developing economies increases with the transformation of agriculture from diversified-subsistence to more specialized-commercial production. As farmers move away from subsistence agriculture to commercial agriculture, they interact more with traders and other actors in input and output markets, and information becomes the lubricant that facilitates such exchanges (Andrew, 2011)

MIS is the service, usually but not always operated by the public sector, which involves the collection on a regular basis of information on prices and, in some cases, quantities of widely traded

agricultural products from rural assembly markets, wholesale and retail markets, as appropriate, and dissemination of this information on a timely and regular basis through various media to farmers, traders, government officials, policymakers and others, including consumers (www.fao.org).

The main objective of a MIS is to enhance competition in the market by increasing market transparency for all market actors, and in particular the smallholder farmers. Thus, a MIS means empowerment of farmers by strengthening their bargaining power in order to increase their share of the retail proceeds of their produce (Shubert, 1988) (Robbins, 1998) (Giovannucci, 2003).

Marketing information system is efficient tool providing past, present and projected information relating to internal operations and external intelligence (Armstrong and Kotler 2007). It supports the planning, control, and operational function in an organization by furnishing uniform information in the proper time frame to assist the decision maker.

Transparency of information about physical supply and demand fundamentals in international commodity markets is essential for market participants to form accurate expectations on prices and thus for the efficient functioning of the markets. There are different types of information that can be obtained about these markets: (i) raw data from databases that include various data related to production, consumption, trade, stocks and prices; (ii) processed data that result from analyses of market trends and monitoring of the current situation; and (iii) forecasts or projections about the future evolution of market fundamentals which may be short-term outlooks or medium and long-term outlooks. The frequency of commodity market information varies widely, depending on the data source, and can range from daily to annual data (Pilar 2011).

Globally both governmental and nongovernmental organizations are engaged in collecting and disseminating the market information. Farmers'/Traders/ firms collect the market information through various resources. Advances in information technology will help farmers or traders to collect the marketing information they need to make right decision. However, sophisticated facilities may not benefit farmers, if the system is poorly managed or not designed for their needs in terms of infrastructure. It is not enough for marketing information to be collected: it must also be disseminated in a form accessible to users and adapted in their decisions. (V.M. Open University 2011)

In most developing countries, market information is a public good service provided by governmental organizations. These services generally involve the regular collection of commodity prices and

supply conditions from major market centers. This information is sent to a centralized data processing center, where it is collated before being disseminated back to clients. The dissemination of market information is reached through various media like radio, newspapers, internet, email, phones and notice boards to farmers, traders, consumers, and others. Spot market information is most useful for direct sales negotiations and to keep abreast of market conditions. Analysis of trend data allows farmers and service providers to make more informed decisions on which crops to plant and when to harvest crops based on seasonal price trends. Moreover, historical data enables users to make decisions on where to sell and how collective bulking, grading, and storage can be used to add value to produce. (Ferris et al, 2008)

In Africa, market information is also used to monitor food security conditions and for more accurate and timely provision of food relief. This is increasingly relying on the use of market price data as a trigger indicator for food insecurity and also to identify areas for local procurement of food aid and subsequently to monitor the effects of procurement on commodity prices. Due to the range of potential users and uses of market information and the more important role of marketing in development interventions with farmer groups and food aid, there is increasing demand in accessing such data, but only if it is reliable, accurate, and readily accessible.(Ferris et al, 2008)

Asaba et al, (2007) and Meuleman (2007) stated that provision of marketing information services and technical information addressing various farming constraints has enabled the farmers to earn better profits from their produce. Knowledge obtained from KACE centers has assisted farmers to adapt improved farming technologies that have had a spread out effect on increased yields and better quality produce and easier to find buyers for their produce and can negotiate for better prices, which has led to an increase in their income.

Despite the obvious value of MIS, an FAO survey of 120 countries identified only 53 functioning national MIS and only 13 that offer daily price dissemination. Worse yet, only a handful of those functioning could be judged successful. The problem often stems from poor initial planning and a lack of operational resources that soon result in unsustainable or defunct MIS.

Improved information enables farmers to plan their production more in line with market demand, schedule their harvests at the most profitable time, decide to which markets they should send their produce to sale and negotiate on a more even footing with traders. Improved information also

enables traders to move produce profitably from a surplus to a deficit market and to make decisions about the viability of carrying out storage, where technically possible.

Farmers have limited access to timely and reliable market information while, traders have a good access to the information since they have better facilities and sell commodities to the market every day. The asymmetry of marketing information generally argued to be the main reason for the existence of excessive profit margin in traditional marketing channel. In this case, farmers are becoming a victim of trader's who take advantage of an information asymmetry situation for the trader's personal profit gain. (Wanjiru 2007)

The basic flow of market information between traders and farmers is by word of mouth. Participants in the channel ask each other about market condition and price in their localities. The flow of market information is subjected to the distortions of informal communication media and may be distorted in favor of economic advantage of traders. Up-to-date market information enables farmers to negotiate with traders from apposition of greater bargaining power. (Goosens (n.d.))

1.2. Background of the organization

The Ethiopia Commodity Exchange (ECX) is a new initiative for Ethiopia and the first of its kind in Africa. The vision of ECX is to revolutionize Ethiopia's tradition bound agriculture through creating a new marketplace that serves all market actors, from farmers to traders to processors to exporters to consumers. The ECX is a unique partnership of market actors, the Members of the Exchange, and its main promoter, the Government of Ethiopia. ECX represents the future of Ethiopia, bringing integrity, security, and efficiency to the market. ECX creates opportunities for unparalleled growth in the commodity sector and linked industries, such as transport and logistics, banking and financial services, and others.

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

ECX creates trust and transparency through clearly defined rules of trading, warehousing, payments and delivery and business conduct, and through an internal dispute settlement mechanism. ECX provides market integrity at three important levels: the integrity of the product itself, the integrity of the transaction, and the integrity of the market actors.

The Ethiopia Commodity Exchange (ECX) commenced trading operations in April 2008. ECX has invited membership of the agricultural and trade industry.

The Ethiopian Commodity Exchange was started to benefit and modernize the way Ethiopia was trading its most valuable assets, its commodities. Ethiopia needed a change from the traditional means of trading to better support the needs of all those involved in the trading and production.

Before ECX was established agricultural markets in Ethiopia had been characterized by high costs and high risks of transacting, forcing much of Ethiopia into global isolation. With only one third of output reaching the market, commodity buyers and sellers tended to trade only with those they knew, to avoid the risk of being cheated or default. Trade is done on the basis of visual inspection because there was no assurance of product quality or quantity, this drove up market costs, leading to high consumer prices.

ECX is developing a new method of exchange and a safer one for all who trade on it. A marketing system that coordinates better, that links faster, and that protects the interests of both sides of the trade. It is time for a marketing system that is transparent, efficient, and innovative, that will take Ethiopian agriculture into the new Millennium. Ethiopia, once a commercial trading hub in antiquity linking markets of East and West, can again claim a place in the global market arena.

The Ethiopia Commodity Exchange, (ECX), is a marketplace, where buyers and sellers come together to trade, assured of quality, delivery and payment. The vision of ECX is to transform the Ethiopian economy by becoming a global commodity market of choice. ECX's mission is to connect all buyers and sellers in an efficient, reliable, and transparent market by harnessing innovation and technology, and based on continuous learning, fairness, and commitment to excellence.

1.3. Statement of the Problem

The contribution of market information and knowledge in bringing about social and economic development has been well recognized globally. (Asenso & Ayalew, 2012) The agriculture sector in developing countries is becoming increasingly knowledge intensive. Researchers at the global, regional, and national levels continue to generate new information (IFPRI, 2012)

Availability of markets and market information gives farmers the potential to bargain and improve their incomes, to seize market opportunities through the adjustment of production plans and better allocation of production factors, and also to use the information to make choices about marketing. (Asenso & Ayalew, 2012) As agriculture systems become more complex, farmers' access to reliable, timely, and relevant information sources becomes more critical to their competitiveness. Information must be relevant and meaningful to farmers, in addition to being packaged and delivered in a way preferred by them. (Diekmann, et al, 2009) cited in IFPRI Discussion Paper (2012)

Bachhav (2012) stated that, the use of information in agriculture sector is enhancing farming productivity in a number of ways. Providing information on weather trends, best practice in farming, timely access to market information helps farmer make correct decisions about what crops to plants and where to sell their product and buy inputs.

The absence of easily accessible market information for farmers leads to lack of market transparency, low bargaining power, low and highly variable prices, coexistence of surplus and deficit areas due to weak spatial integration of markets, high risks, low produce quality and high losses, high transaction costs and insufficient production to satisfy consumer demand.(Eric 2006)

Familusi & Owoeye (2014) also revealed that market needs to provide a mechanism that permits clients to check the price paid for the goods they buy or sell on the market at the same or nearly the same as the price paid by other users of the market at the time of their transaction.

However, the seller has no idea of the price the trader will pay to the next person offering the same item. Furthermore, the seller has no way of knowing the price at which the traders will sell the item to consumers (Familusi & Owoeye 2014).

Some markets of rural areas have no means of informing traders about the periodic details of their transaction. Farmers are often reluctant to bring their commodities to market on time if they have no

idea what price they will get for them. This reduces the overall volume of trade, decreases production and increases waste, which has a negative effect on a country's economy (CTA, 2006).

When there is no institutions that provide market information for market actors formally, the main source of information of the rural farmers become the merchants who come to buy their commodities. However, as a result of conflict of interest merchants do not provide the farmers accurate market information. Due to lack of market information in the major market places other than their localities, farmers are forced to sell their product to merchants at low prices. Another source of market information in rural areas is the oral transmission among farmers. This oral transmission of market information lacks accuracy because of many communication barriers. Mesay (2007)

This is true in Ethiopian context. So, one of the reasons for the establishment of ECX was to solve such problems encountered agricultural commodity producers particularly the rural farmers. According to the statements of article number six of ECX's establishment proclamation (Pro.No.550/2007), the purpose for which ECX is established, was among others, to create an efficient, transparent, and orderly marketing system that serves the needs of users, and that promotes increased market participation of Ethiopian small scale producers to provide automated back office operations to record, monitor, and publicly disseminate information on Exchange transactions to provide timely market information to the public'

In this regard ECX made efforts and have been disseminating market information through seven channels (website, Bulletins–Market Commentary, Radio, Electronic Price Tickers, Mobile Phone SMS, Interactive Voice Response and TV at federal level (ECX, 2015).

The ECX Market Data strategy involves harnessing the power of modern information and communication technologies (ICTs) to empower all market actors, including smallholder farmers to access markets more efficiently and profitably (ECX, 2008).

However, some farmers are complaining about the channels and the information disseminated by ECX. They assumed as the channels and market information disseminated through those channels were for urban dwellers. Some others complained about electricity and network problems to access the information. Still, there are farmers who comment the contents and language of transmission of the channel in disseminating ECX's market information. Nevertheless, there are rural farmers who consider as it was beneficiary and tried to use it infrequently. Yet, unless verified by research

findings, there is no consensus among officials and experts about the benefit rural clients gained and the challenges they faced in using ECX's market information currently disseminated at national level.

Moreover, while working in the company (ECX), the researcher also observed that issues related to effectiveness of the information and challenges rural clients faced in using the information was raised at discussion forums and while conducting field visit. Regarding the effectiveness of market information, as stated by FAO (2003), Mawere (2008) and Bachhav (2012) it should be assessed by emphasizing on the significances it contribute regarding marketing decisions (Production, Pricing, Promotion and Place). Moreover, as a guiding measurement V.M. Open University (2011), Kotler and Armstrong (2002), Andrew (2003), and CAT (2006) agreed to use comprehensiveness of the information, accuracy and trustworthiness, usability, timeliness, accessibility, economic, relevance and clarity as a major criteria of assessing market information effectiveness.

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 rural clients faced in using the market information disseminated by ECX.

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 rural clients registered under Adama Branch. Hence, this study was primarily aim to answer the following research questions.

1.4. Research Questions

In this study the researcher was attempt to answer the following basic research question

1. Which market information dissemination channels of ECX are most frequently used by rural clients in the study area?
2. How much ECX's market information is effective to make decision about production, pricing, place and promotion?
3. What are the challenges rural Clients are facing in using ECX's market information dissemination in the study area?

1.5. Objectives of the study

1.5.1. General Objective

The major purpose of this study was to examine the effectiveness of Ethiopia Commodity Exchange's (ECX's) market information dissemination among rural Clients registered under Adama Branch.

1.5.2. Specific Objectives

The specific objective of the study was To:

- ✓ Explore the kind of market information dissemination channels of ECX most frequently used by rural clients in the study area.
- ✓ Investigate the effectiveness of ECX's market information for rural clients to make decision about production, pricing, place and promotion
- ✓ Identify the challenges rural clients faced in using market information disseminated by ECX.

1.6. Significance of the Study

- ➢ It may contribute to the existing body of knowledge in the area of market information systems, particularly the market price information dissemination.
- ➢ It may serve as a basis to conduct further and detail study in the area
- ➢ It may help the organization to improve its efficiency of MIS practices.

1.7. Scope of the Study

MIS services include development of the system, frequent updates on product demand and prices, market news, market research and analysis, and customized services (feasibility study, business planning, marketing research, etc.). Conceptually the scope of the study is limited to market price information dissemination of ECX and its significance for rural clients in deciding production development, price setting, promoting product and choice of place where to sale. Operations of the Ethiopia Commodity Exchange contains membership management, trading and trading system, market information dissemination, exchange contracts, warehousing and receipts, clearing and settlement, market surveillance, risk management and dispute resolution. However, the scope of this study is confined to market information dissemination. In relation to geographic location Ethiopia Commodity Exchange/ECX/ provides its service to clients by 20 branches in different regional states in Ethiopia (Oromia, Amhara, Southern People Nations and Nationalities, Tigray, Addis Ababa City Administration and Diredawa City Administration). Among those branches, Adama Branch is selected as study area because of time and financial constraints of the researcher.

1.8. Limitations of the Study

The limitation of the study was indeed lack of up-to-date and adequate literatures on the area particularly related to Ethiopia. Another limitation was, respondents were reluctant to give full information during interview and open ended questions of the questionnaire. However those limitations did not affect the significance of this research finding.

1.9. Definition of key terms

Market Information: Information regarding commodity type, price trends, Volume, etc.

Channel: Media used to transmit ECS's market information

Market Information Effectiveness: significances it contribute regarding marketing decisions (Production, Pricing, Promotion and Place)

Challenges: The factor that greatly influence rural clients to use market information of ECX effectively

Rural clients: Any person registered by ECX to sale agricultural commodities through ECX's trading system.

1.10. Organization of the Paper

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; definition of operational terminologies used in the study.

The second chapter present review of the related literature. The third chapter deal with research methodology of the study which presents the research design, method, sources of data, sample and sampling procedure, data collection tools, and 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. Review of the Related Literature

2.1. Concepts and Definition of Market Information System

Information means different things to different people, some it maybe in form of news on radio or television, and the print media, to some it may be a medical report which may be used for taking health decision, to an investor, financial report of an organization as a vital information to decide whether to stake ones investment in such or to divest, to some is the stock analysis and daily trading in the different market. To law enforcement agents information to them is a tool to carry out thorough investigation and absence of the timely and up-to-date information and lead to loss of life and properties. Now a day's information is acknowledged as an important factor in the sustained development of any society because it reduces uncertainty, and enhances awareness of possible actions to take to solve problems. Lack of information is argued to act as a barrier to development because of importance of information provision in capacity building and empowering communities (Wakelin & Simelane 1995)

Knowledge of market information tends to reduce the risks and lower the transaction costs of participating in the market (Giovannucci & Shiphered, 2001). Farmers located in a corner of the country can plan the sale of their products throughout the country or even globally. But for better prices they must have knowledge of potential buyers and prices in various markets. This information provides them opportunities for high sale prices and better profit. In fact, we can say that market knowledge is the power for higher income even to the farmers. Thus, farmers can collect high returns if they are able to take right marketing decisions, given the market information.

Marketing information system consists of people, facilities, and integrated procedures that used to provide management with accurate and regulated information about the environment-related marketing, which helps decision makers to hunt opportunities and build strategies and marketing plans. Kotler realizes that marketing information system is a network, composed of interrelated-relations between people, machines, and procedures to gather, sort, analyze, evaluate, and distribute needed, timely, and a flow of structured information, relying on the internal and external sources of the institution that directed mainly to the formation of marketing decisions base.

V.M. Open University define that marketing information system is system of collecting and analyzing information related to marketing of goods and services. It consists of people, equipment, and procedures to gather, sort, analyze, evaluate, and distribute important, timely and accurate information for use by marketing decision makers. (V.M. Open University 2011)

2.1.1. Marketing Information Benefits

Within the discourse of "Information Society", "Knowledge Society", "Information Economy" and the like, it is maintained that information and knowledge play a key role in ensuring sustainable development (George et al, 2013) Having access to the right information can address major problems that hinder rural community development and it can also improve chances for livelihoods. Market information is an important facilitating function in the agricultural marketing system. It facilitates marketing decisions, regulates the competitive market process and simplifies marketing mechanisms (FAO 2003).

Market information enables farmers to plan their production, harvesting, and selling according to market demand and to choose the optimal marketing channel. Information also helps them to negotiate favorably with traders. Traders, especially smaller ones benefit from better information in making efficient allocation decisions to hold products in storage or ship them to the most profitable markets. In fact lack of information can be an entry barrier to producing alternative crops or participating in markets. Market information is also a necessary part of early warning systems that can identify potentially dangerous food shortage trends. Such broad public benefit characteristics qualify market information services as a public good (Giovannucci & Shiphered, 2001)

Evans and Berman (2001), also depict that market information, especially price information will assist the marketer to take decisions on how much to charge and where to sell the product. Once the marketer has access to market information regarding the kind of product needed by the target market, price, distribution channels, etc. it becomes easier to make marketing decision

In addition, the FAO, (2003) further explain advantages associated with the MIS as follows:

Deciding where to sell

It is important that the farmers should be able to sell their produce at a convenient place. The further along the marketing chain the farmers go, the higher the price they will normally get. However, a high selling price may not mean that farmers will maximize their income. This depends on the costs involved when farmers decide to sell closer to the final consumer. It can be a lot more costly for a farmer to transport small quantities over a long distance than for a trader to transport large quantities over the same distance.

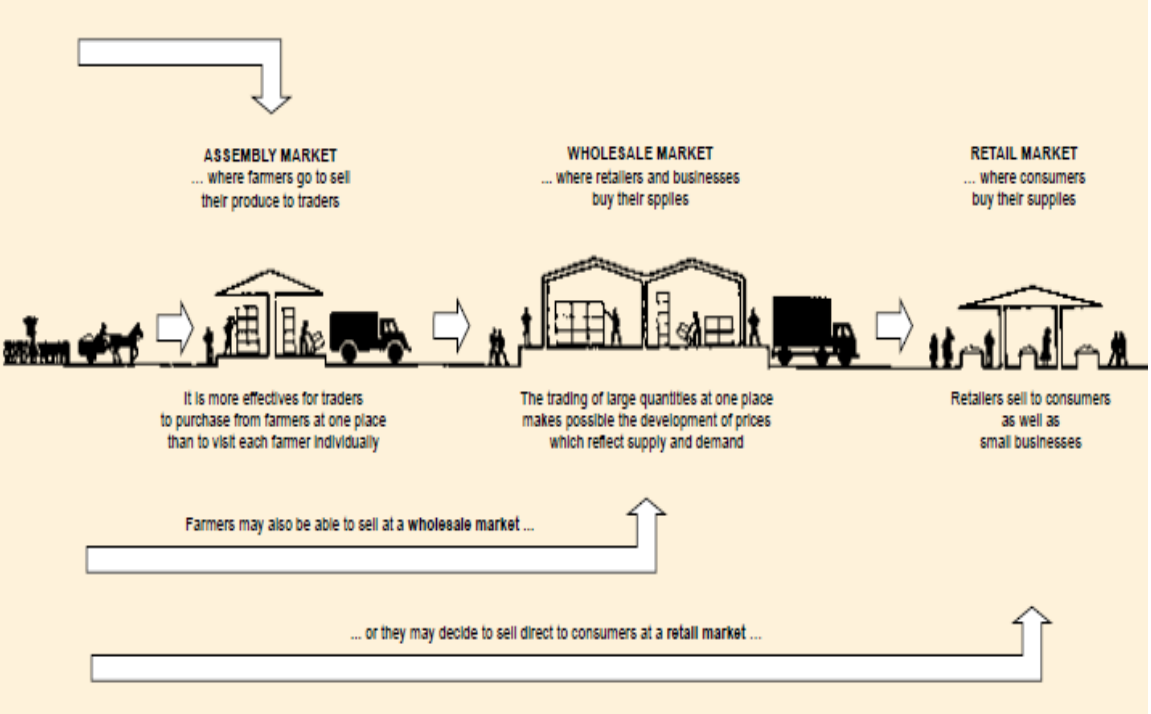

Figure 2.1: Marketing chain Source (FAO, 2013)

Checking on the prices

Checking prices is particularly important for farmers who send their produce on consignment. Farmers have no advance knowledge of the prices they will receive and depend on their agents to get the best prices for them. Checking on prices is also important when farmers sell by auction.

Deciding whether or not to store

Farmers producing grain crops such as maize or crops such as onions, potatoes and apples are able to store them in expectation of higher prices later. Where market information about seasonal price trends is available to farmers, they can get an idea about seasonal price pattern of prices.

Deciding whether to grow different crop

Deregulation may mean that those farmers living in areas where marketing cost are high find that the returns of some products no longer justify the costs. Such farmers need to be able to calculate whether growing other crops may be more profitable. Information on past market prices is essential for them to make such decisions. Having discussed the nature and importance of marketing information systems.

Bachhav (2012) stated that, the use of information in agriculture sector is enhancing farming productivity in a number of ways. Providing information on weather trends, best practice in farming, timely access to market information helps farmer make correct decisions about what crops to plants and where to sell their product and buy inputs.

As Mawere (2008) also stated that, Agricultural marketing information offers knowledge to farmers on what crops are on demand, how to seek buyers and how to go about marketing their produce, how they can be protected from being defrauded, how to bargain and negotiate and up striking better deal in pricing their produce, how to improve their income by basing production on market potential and prevailing prices of their produce on the market.

2.1.2. ICT and Market information dissemination

According to Kotler (2000), the marketing environment is changing at an accelerating rate. Given the changes, the need for real-time market information is greater than at any time in the past. Fortunately, the exploding information requirements have given rise to impressive new information technologies like computers, internet among others.

ICT can accelerate agricultural development by facilitating knowledge management (Rao, 2007). Farmers can take full advantage of ICT to enhance productivity and generate more income by adopting new technologies, including new varieties, adding value and marketing their products. Timely access to market information via communication networks also helps farmers make well informed decisions about what crops to plant and where to sell their produce and buy inputs. The benefit of ICT extends to economic aspects such as better earnings or production *(*Cheryll & Soriano, 2007). The adoption of modern industrial inputs in agricultural production relies on the information and communication infrastructure (Lio and Liu, 2006).

ICT can play a crucial role in benefiting the resource-strapped farmers with up to date knowledge and information on agricultural technologies, best practices, markets, price trends, and weather conditions. The experiences of most countries indicate that rapid development of ICT, which facilitates the flow of data and information, has tremendously enhanced the knowledge management practice in agriculture. However, in Ethiopia the use of ICT for the accumulation and dissemination of knowledge and information is still low. Currently, among the various ICT related initiatives, radio is frequently used to share and inform users on agricultural issues, including new and upgraded farming techniques, production management, market information, and other issues. Due to its strategic importance in reaching the majority of the smallholders, attempts are being made to strengthen the delivery of knowledge and information through radio programs(UNDP 2012).

2.1.3. Market Information dissemination channels

Although the concept of ICTs has been with us for at least a century in the form of radios and analogue televisions, the term has only gained buzz-word status since the development of more intelligent and interactive technology such as cell phones and the electronic-mailing system via the World Wide Web (Barnard, 2007).

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).

2.1.3.1. Voice Information Delivery Services

This includes a telephone-based information delivery service that provides advice on farming methods and market access to improve the lives of rural farming communities. Answers too many of these problems may well be on the internet but with connectivity, literacy and language barriers; this is way beyond the reach of the vast majority of farmers. Some use call-in centers for agricultural extension support. More complex voice technology uses a simple telephone community fixed phone or mobile as the medium of information exchange while sophisticated communication technology and computing applications have been configured at the back-end platform for the provision of the

requisite information service. The solution is comprised of a unified messaging platform incorporating Interactive Voice Response (IVR) functionality, integrated with a Customer Relationship Management application to support integrated call handling and management of a very large audio database (Mucemi et al, 2009).

2.1.3.2. Mobile

Set against this backdrop of rural transformation, the advent of the mobile phone is stimulating a revolution in rural connectivity for small-holder farmers and other small-scale rural producers in developing countries. Infrastructure networks have expanded rapidly and for many rural producers the mobile phone is enhancing communication, information exchange, and innovation in service delivery (Donner, 2009; Tickner, 2009; Parikh et al, 2007). Mobile phone-based services have proliferated in recent years, providing new ways to access price and market information, and coordinate input/output resources including transport and logistics, finance and production techniques (Qiang et al, 2011; Gakuru, et al, 2009). Asefa (2004) also stated that Mobile phone message has also become the preferred mode of communication for not just the developed world but also in Africa. Using mobile phone we can receive and send fax, email, SMS, pictures or even video recordings. Mobile phones have become a comprehensive and instant communication tool.

2.1.3.3. 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.

2.1.3.4. Website

Temmel (2014) stated that internet is becoming more and more important for nearly everybody as it is one of the newest and most forward looking media and surely the medium of the future. By disseminating information, an organization can reach its target audience and have a greater impact on policy and programming. The websites can serve as invaluable tool in this effort to communicate information across a wide audience. Information can be disseminated through the use of the World Wide Web (WWW) designed to disseminate information for outside and member sources.

2.1.3.5. Radio

Familusi & Oweleye 2014 opined that Radio is the most popular means of disseminating information, regardless of the continent. It is very appealing because of some distinguishing features of interactivity, its capacity to provoke dialogue and to solicit the participation of local population with lower production costs and extreme versatility. He also revealed Radio lends itself just as well to rapid interventions as to the broadcasting of in-depth reports and is just suitable 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.

2.1.3.6. Electronic Price Ticker

Duncan (2002) classifies billboards under "out-of-home media", referring to "communication vehicles that the target audience sees or uses away from home" or "place-based media", which term refers to "message-delivering opportunities 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 general use of electronic billboards has only been applied by marketing communicators during the past decade. Electronic billboards can create effective exposure if placed strategically where many people pass through on a daily basis; this can be anywhere from next to public roads to community centers, market centers and the like. Marketers, however, should do their homework to determine the showing potential of a specific electronic-billboard location with regard to their target audiences (Duncan, 2002).

2.1.4. Criteria for Evaluating Market Information

According to V.M. Open University (2011), Andrew W (2003), CAT (2006) and the like, for maximum benefits, the market information must meet a number of criteria. Some of those are described below:

2.1.4.1. Comprehensive information:

The information must cover all agricultural commodities and markets including international markets. Reasonable and comprehensive information includes prices, price trends, production, supply movements, stocks, and demand conditions at each level of the market for a product. Providing such a mass of information, especially under the constantly changing conditions is a formidable and expensive task. V.M. Open University (2011)

2.1.4.2. Accuracy and trustworthiness

As V.M. Open University (2011) state, Information must be accurate and trustworthy. However by nature, market information can never be 100 per cent accurate, but it must be an honest market appraisal in order to earn the trust of information users. Constant efforts are made to improve the accuracy of market information and news services. According to Andrew W (2003) If MIS are to have any meaning for farmers the information they provide must be accurate and farmers must understand to which product, quality, etc. the prices refer.

2.1.4.3. Usability

Information also must be relevant and in usable form. It is not enough to simply collect a number of reports. Information must be collected, packaged, and disseminated with the user's interests in mind. Much market information goes unused because it is not in usable form. In such case the efforts made in collecting the information go waste (V.M. Open University 2011).As Kotler and Armstrong (2002) put it; information by itself has no worth but, its value comes from its use. World Bank (2012) also stated that Information should be developed according to need of the end users, and provided in local languages, in simple way and in interactive form.

Agricultural technical-knowhow and market information to some extent is available to support decision-making at the farm-level and along the value chain. The major challenge lies in disseminating this knowledge and information to farmers in a manner that they are able to assimilate the technology and use it to improve yields and livelihoods. (UNDP, 2012)

2.1.4.4. Timeliness

Market information must be timely, in the sense of being relevant to current decisions, and must be speedily transmitted to users. Much market information is unusable. Futures market traders require minute-to-minute market information (V.M. Open University 2011). The regularity of market price and volume information depends on the type of produce that is being reported on. For storable, cereal produce it has been found that a daily update of basic goods should be provided from the country's main terminal markets. This information can effectively be supplemented with weekly data from major provincial markets. If the MIS is providing information on perishable goods, such as fresh vegetables and soft fruits, this will require daily updates in all markets, and in many cases more than once a day, due to the more volatile nature of the prices of these commodities.(CTA, 2006)

2.1.4.5. 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.

2.1.4.6. Relevance and clarity:

According to V.M. Open University (2011), Market information must be relevant and clear. Cravens (1996), cited by Githuka (2007) also stated information that users need to know: it is important to single out only the most relevant data to analyze.

2.1.4.7. Economic

V.M. Open University (2011) stated**,** market information must be economical. In other words it should be cost effective to the users. According to White (2005), the marketing process needs to be undertaken as efficiently as possible, at the lowest cost and with the minimum of losses occurring at each stage. Moreover, although the tariff for modern ICT services such as mobile phone, internet, and fixed lines in Ethiopia is one of the lowest in Africa. (Ethio Telecom)

Information is very important for decision making and is vital for the overall development of any country, particularly so in the case of developing countries, where appropriate use of scarce resources is critical. Decision-makers at every level of the economy need relevant and up-to-date information to assist them. The dissemination of this vital information requires effective marketing so that those who need information are aware of its existence and acquire it on time. It is acknowledged that the usefulness of information in decision-making and in the process of economic development in general, little if any attempt is made to disseminate the acquired information to those who need it. Users were faced various problems in utilization of market information disseminated. One of the factors accounting for this is the high rate of illiteracy, especially in the rural areas. Another problem is the language barrier. Information acquired from ECX needs to be translated into local languages; often, this is a prerequisite for the information to be of any use.

2.1.5. The rural setting, infrastructure and capacity problems

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. Private companies invest their resources in areas where they would get good returns. In addition, provision of ICT services would

require electricity which is limited in most places of rural Africa. 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."

Munyua (2008) conducted a study on ICTs and small-scale agriculture in Africa and found low usage patterns and anecdotal adoptions. It was argued that ICT initiatives were scattered and uncoordinated and summarized the main challenges and factors that influence the use of ICTs as: high cost of available technologies, inadequate infrastructure and low ICT skills, poor and expensive connectivity, inappropriate ICT policies, language barriers, low bandwidth.

The low level of access to ICT infrastructure is also believed to have slowed the sharing and exchange of information generated at national and regional levels. Relatedly, electricity infrastructure coverage in the rural parts of Ethiopia remains low despite recent efforts to extend the electricity grid to rural areas through the rural electrification program. Expansion of ICT services to rural areas has restrained by the low level of electricity coverage. Most FTCs have no access to electricity and do not have electronic equipments such as TVs and computers that they need to effectively discharge their work (UNDP, 2012).

In Ethiopia the access to ICT infrastructure is still very low even though some noticeable improvements registered in recent years. According to the country diagnostic report of the World Bank issued in March 2010, the coverage of ICT in Ethiopia is one of the lowest in Africa. For instance, the coverage of GSM signal is about 10 percent of the population compared to the 48 percent benchmark for low income countries. The Internet bandwidth benchmark for low income countries is about 20 times higher than that of Ethiopia.

2.1.6. User literacy

According to Daniele & Andrew Market information can best be utilized by those who have a measure of market education. Traders, especially those in economies that have recently become more market oriented, can benefit from basic knowledge about what the information represents, how it is gathered, what it can mean, and ways to take full advantage of it. An educational component is a useful feature of any MIS (Daniele & Andrew, 2001).

In addition to income, educational attainment, social and cultural constraints are other factors which affect the likelihood of an individual having the necessary e-skills to use different technologies optimally (Gillwald et. al. 2010; Hafkin and Odame, 2002; Hafkin and Taggart, 2001). Based on panel data from Uganda, Muto and Yamano (2009) found that the total value of assets and the education level of both male and female household members are directly related to possession of mobile phones.

According to e-forum held by World Bank (2012), Information Communication Technology may make tools and information available, but users must know they exist and be able to use them. The capacity of individuals to use what ICT are available is often overlooked, or taken for granted, leaving older people and women in some communities at a particular disadvantage.

2.2. Empirical Evidences Related to Market Information

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 (Table 2.1) related to ECX's market information disseminated to rural areas. They are:

- Market Information System and the Ethiopia Commodity Exchange (Mesay, 2007) and
- Ethiopian Commodity Exchange (ECX)- Linking Farmers to the Market (Assegid, 2010)

Table 2.1: Summary of *Empirical Evidences Related to Market Information*

Author	Title	Objective	Major Finding
Mesay Zegeye (2007)	Market Information System and the Ethiopia Commodity Exchange	To investigate and recommend suitable Market Information System for the Ethiopia Commodity Exchange.	At that time in Ethiopia, farmers do not have efficient mechanism of market information access. High level system design of the selected Market Information System is developed and proposed.
Assegid Zewdu (2010)	Ethiopian Commodity Exchange (ECX)- Linking Farmers to the Market	To describe ECX market information system in linking farmers to the Market using 27 farmers from Adama and Hawasa.	Findings of this article show that ECX system has a major impact on the life of the farmers. Improving the quality of the information also lead the beneficial farmers to adopt a better life.

As demonstrated in the table, the objectives of the study in both of them were not similar. The purpose of the study for Mesay (2007) was to investigate and recommend suitable market Information System for Ethiopia Commodity Exchange as of its establishment. The researcher attempted to identify and recommend suitable Market Information System when Ethiopia Commodity Exchange is newly established.

On the other hands, the major objective of the study conducted by Assegid (2010) was, to describe ECX market information system, particularly in connecting the farmers to the market. In this study the researcher used 27 farmers from Hawasa and Adama.

Their differences in terms of objective of the study: the first one focus on market information system design while, the latter gave emphasis on linking the farmers to the market.

In similar manner, with respect to the findings of the two studies, variation was also observed as that of the objectives.

The study conducted by Mesay (2007), investigated absence of market information system prior to the study; farmers do not have efficient mechanism of market information access. The researcher argued a high level market information system to be developed and proposed. As a result the study identified Interactive Voice Response based technology to be implemented by ECX.

Whereas, the findings of the study carried out by Assegid (2010) identified, weak linkage of ECX with farmers. He further argued that, since ECX system has a major impact on the life of the farmers, using SMS and IVR may strengthen the linkage between them.

In general, those studies take place to propose market information system that could link farmers to the market. However, they did not focused on effectiveness of ECX's market information and the challenges rural clients faced in using the market information disseminated by ECX.

So, this study was proposed and conducted considering issues related to effectiveness of ECX's market information and the challenges rural clients faced in using the market information disseminated by ECX.

2.3. Conceptual Framework of the Study

ECX's Market Data Flow Chart

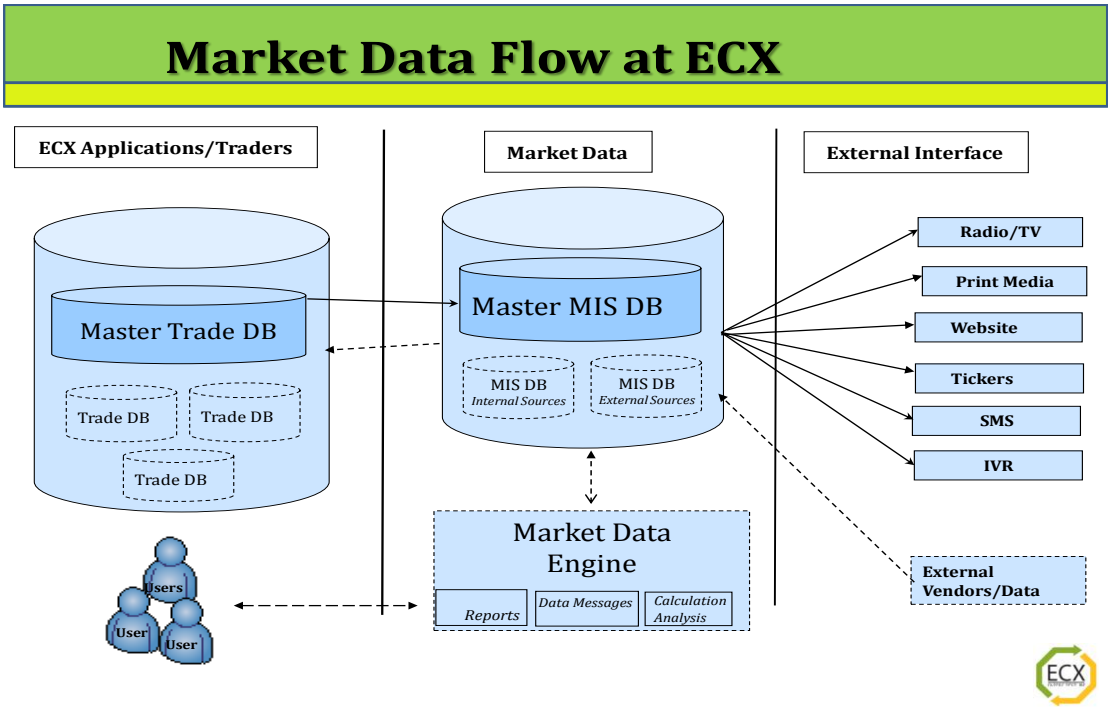

Figure 2.2: Market Data Flow Chart, Source: ECX (2015)

ECX collects, processes, updates and disseminates market information in real-time to all market actors and other market intermediaries through the MIS. Market information includes prices of commodities in different markets, and commodity offers to sell and bids to buy, as well as short extension messages. The key market dissemination channels at ECX are rural based Market Information Tickers, mobile phone Short Messaging Service (SMS), Interactive Voice Response (IVR) service, Mass media (TV, Radio, and Newspaper) and Website (ECX, 2015)

Market information is an important facilitating function in the agricultural marketing system. It facilitates marketing decisions, regulates the competitive market process and simplifies marketing mechanisms (FAO, 2003).

Organizations disseminate market information 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).

ECX disseminates market information to all market actors and other market intermediaries through the Market Information dissemination channels. Market information includes prices of commodities in different markets, and commodity offers to sell and bids to buy, as well as short extension messages. The key market dissemination channels at ECX are rural based Market Information Tickers, mobile phone Short Messaging Service (SMS), Interactive Voice Response (IVR) service, Mass media (TV, Radio, and Newspaper) and Website (ECX, 2015)

According to Andrew (2003) If MI are to have any meaning for farmers the information they provide must be accurate and farmers must understand to which product, quality, etc. the prices refer. According to V.M. Open University (2011), Andrew W (2003), CAT (2006) and the like, for maximum benefits, the market information must meet a number of criteria; Comprehensive information, Accuracy and trustworthiness, Usability, Timeliness, Accessibility, Relevance and clarity and Economic.

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; among others comprehensiveness of the information, accuracy and trustworthiness, usability, timeliness, accessibility, economic, relevance and clarity are usually used as indicative criteria.

Nevertheless, Market Information by itself has no worth but, its value comes from its use (Kotler and Armstrong, 2002). Since market information helps potential buyers and sellers to make marketing decisions, once market information is disseminated properly, rural clients will use a MI by analyzing the information for marketing decision-making.

Basically the effectiveness of any market information is expressed by its significances and contributions it offer for key users of the information (Kotler 2003), (Andrew 2011) and (World Bank 2012).

Market information, especially price information will assist the marketer to take decisions on how much to charge and where to sell the product. Once the marketer has access to market information regarding the kind of product needed by the target market, price, distribution channels, etc. it becomes easier to make marketing decision (Evans and Berman, 2001).

Munyua (2008) conducted a study on ICTs and small-scale agriculture in Africa and found low usage patterns and anecdotal adoptions. It was argued that ICT initiatives were scattered and uncoordinated and summarized the main challenges and factors that influence the use of ICTs as: high cost of available technologies, inadequate infrastructure and low ICT skills, poor and expensive connectivity, inappropriate ICT policies, language barriers, low bandwidth.

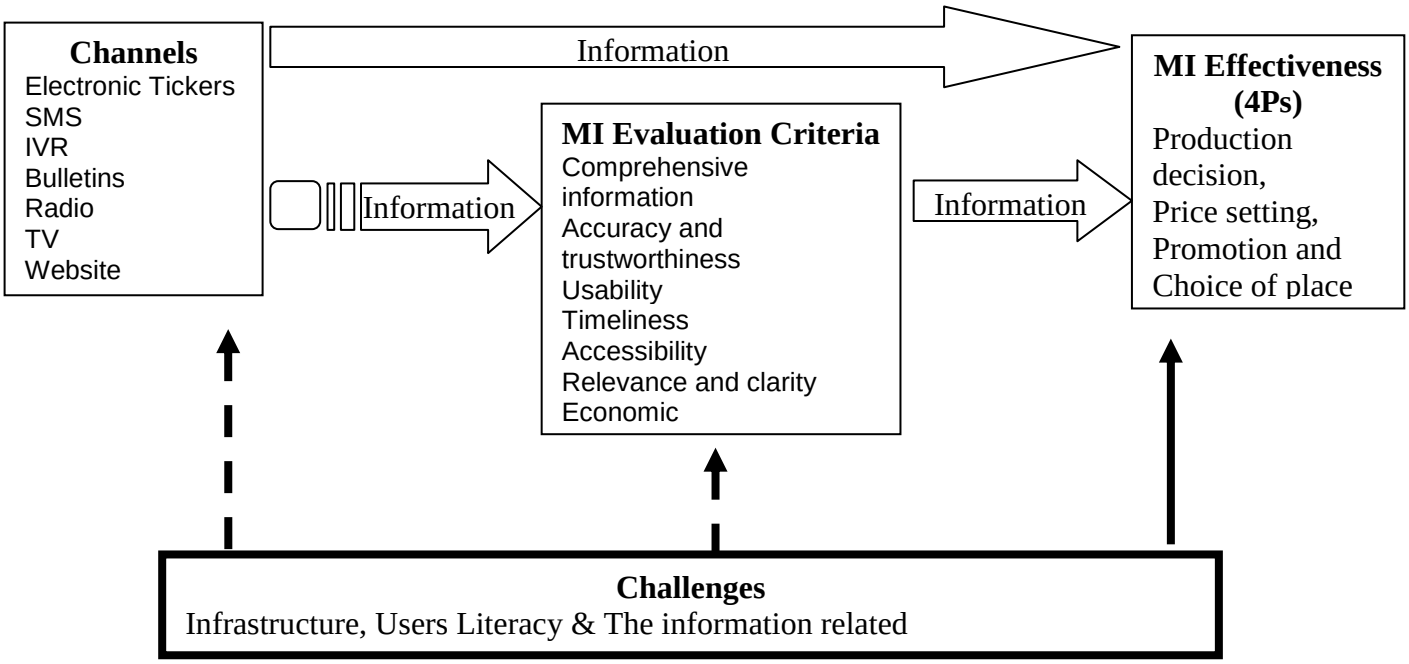

Figure 2.3: Conceptual Framework of the Study

Source: The researcher

Therefore, the conceptual framework illustrated in figure 2.3 was developed for this study based on the theoretical knowledge compiled from the literature and objective of the study. Accordingly, the framework encompasses Channels frequently used by rural clients, major criteria used to evaluate market information, effectiveness of market information for rural clients marketing decision and

challenges that affect utilization of market information. According to this framework primarily among ECX's market information dissemination channels the most frequently used channels by rural clients of the study area were investigated. Then, market information disseminated by ECX through the channels was evaluated using the criteria listed in the framework. This evaluation could result the extent of market information's accessibility, timeliness, comprehensiveness, accuracy and trust worthiness, usability, economic, relevancy and clarity for rural clients. The highest evaluation result regarding those criteria enable rural clients to use the information for marketing decisions. So, next to this, the effectiveness of ECX's market information for rural clients to made production decision, price setting, promotion and choice of place where to sale their commodities was assessed. At this level the results of ECX's market information effectiveness for rural clients could be identified.

Finally, the major challenges rural clients faced in using ECX's market information effectively were identified for further action to improve utilization of the information among rural clients. Regarding this, the framework clearly shows the possibility of the challenges to affect channels through which the information is disseminated, the information itself and its utilization for rural clients marketing decisions. This indicates the possibility of the challenges occurrences at any point of the framework.

Chapter Three

3. Research Methodology

In this part, issues related to methodology of the study; which includes research method, sample and sampling techniques, data collection tools and procedures, method of data analysis, and ethical considerations are presented and discussed as follows:

3.1. Research Design

Since, this study is intend to investigate market information dissemination practices based on fundamental theories and principles that are supposed to be effective parameters just to evaluate the actual performance of the case company; the researcher preferred to use descriptive research design in this study to figure out what exists at present by determining the nature and existing situation of the issue in the study area. Moreover, it helps to describe the situations of the issue under study quantitatively and qualitatively using the data collected through questionnaire and interview.

This design was preferred as it permits to find out the underlying facts and/or actual circumstances (Greener, 2008). Moreover, as stated by Kothari (2004), descriptive research design is used to collect information through interview or administering a questionnaire or other data collection tools from a sample of individuals, and analyzed to describe the current situation of the topic under study. Descriptive research answers who, what, where, when and how questions.

Thus, in order to properly analyze the existing conditions of market Information dissemination of ECX for rural clients in the study area, and to identify the factors affecting such practices; descriptive research design was used in this study.

3.2. Research Method

Mixed methodologies were used because the method combines quantitative and qualitative data collection techniques and analysis procedures. Tashakkori and Teddlie (2003) argue that multiple methods are useful if they provide better opportunities to better evaluate the extent to which the research findings can be trusted. The method can be used to triangulate the phenomenon (Greener 2008).

3.3. Sources of Data

In this study both primary and secondary sources of data were used. Both sources give reliable responses which play a vital role for the success of the study. The primary sources of data were rural

clients and employees of ECX working on jobs related to market information dissemination. In addition, the secondary data also gathered from records, reports, statistical abstracts, and other official documents related to ECX's market information dissemination to the rural clients in the study area.

3.4. Population and Sampling Technique

3.4.1. Population

According to the data obtained from ECX Member and Clients' Relation department, there are 289 registered clients under Adama Branch; who are engaged on Agricultural commodity exchange. Since those clients are basically producing their agricultural products at rural areas; they are considered as rural clients and a population of the study. In addition, three employees of ECX working on Market Data Department also regard as a population of the study. So, the required sample size was determined from the total number of rural clients and the above mentioned employees.

3.4.2. Sample Size

A sample is a subset or relatively small portion of the total number of elements in a given population. Since business researchers typically deal with samples; the researcher normally based sample data to make a judgment about a population, or the total collection of all elements about which a researcher seeks information, based from a subset of that population (William et al, 2010).Thus, for this study, to determine the number of sample respondents, the formula developed by Krejcie and Morgan (1970) is considered. This formula is recommended by the writers of the field like William et al, (2010), and Saunders et al, (2007) in Business research. It helps to correctly determine appropriate sample size for the study. According to the suggestions of those authors, the required sample size for this study is, therefore, determined by using the following formula:

$$S = \frac{X^2 NP(1-P)}{(d^2(N-1)) + (X^2 P(1-P))}$$

Where*:*

S= required sample size.

X^2= the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841 at 0.05 level of confidence).

N= the population size.

P= the population proportion (assumed to be 0.50; since this would provide sufficient sample size).

d= the degree of accuracy expressed as a proportion (0.05).

Therefore;

$$S = \frac{(3.841 * 289) * 0.5 * (1 - 0.5)}{(0.05^2) * (289 - 1)) + (3.841 * 0.5) * (1 - 0.5))} = 165.16$$

Accordingly; on the base of the above formula among 289 rural clients; 165 of them are identified as a sample size.

3.4.3. Sampling Techniques

There are different sampling techniques which can be applied to selected subject of the study. For the purpose of this study, among the population of ECX rural clients registered under Adama Branch, the determined sample size above were selected using simple random sampling techniques to respond the questionnaire. Simple random sampling technique were used to select the sample respondent; because, this technique gives equal chance for each members of the population the likelihood of a probability of being chosen for the study as a sample (Greener, 2008). In order to select the required number of sample respondents, a list of clients' registration number were used. This was obtained from ECX Adama Branch.

In addition to rural clients of ECX, purposively all three employees working on Market Data Department of ECX are included in this study to respond interview questions using census or absolute 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.

3.5. Data Collection Tools and Procedures

There are several methods and instruments used to collect data in social science researches: which includes questionnaire, interview, observation, and FGD. However, the selection of a particular instrument could depend on one's problem. As stated by William et al, (2010), a decision of a researcher to select a particular instrument of data collection required considering the type of people dealing with, the nature of the social circumstances, the disposition of the social environment, and the character of the people selected as a sample respondent for the study. Accordingly, considering the above facts, questionnaire and structured interview are selected as data collection tools for this study.

3.5.1. Questionnaire

A questionnaire is selected as an instrument of data collection based on the fact that; it provides a wider coverage of the sample and it facilitates the collection of a large amount of data (Kothari, 2004). Moreover, it provides respondents high freedom; and can be easily accessible to every respondent at the same time to give well thought out answers.

The questionnaire was developed having close-ended and open-ended questions. The close-ended questions were developed, with the belief that, it helps the respondents to choose one option from the given responses that best fit their responses. In addition, the open-ended questions are employed in order to give an opportunity for respondents to express their view, feelings, perceptions, and intensions related to ECX's market information disseminated for rural clients in the study area.

The questionnaire were prepared in English language, and then translated to Afan Oromo and Amharic language for better understanding of the respondents. Moreover, the questions in the questionnaire were organized in to two parts. The first part encompasses items focused on demographic characteristics of the respondents. In the second part, questions related to specific objectives of the study were included.

The collection data through the questionnaire from the sample respondents was done by the researcher himself with the assistance of four trained data collectors for two weeks.

3.5.2. Interview

An interview is used to gather information about the thoughts, feelings and beliefs that the interviewee has about a particular topic. The interview permits greater depth of response which is not possible through any other means (Jacobs, 2005). The reason to use interviews is; its suitability for intensive investigation, helpful to overcome miss interpretation of the answers for questions and it is helpful to collect supplementary information for the study. Thus, the purpose of using interview in this study is to collect more supplementary opinion so as to stabilize the responses collected through the questionnaire.

For the purpose of conducting interview, leading interview questions were prepared; bearing in mind the advantages of flexibility in which new questions could be forwarded during the interview session based on the responses of the interviewees. The interview schedule was administered by the researcher on face-to-face bases. This enables the researcher to focuses on some specific issues raised during interview session.

3.6. Validity and Reliability Test

In order to assure data quality, the questionnaire prepared for this study was validated and pre-tested at pilot level before it were used as data collection tool. Primarily, the validity of the instrument was tested by three lectures from the deportment, including my research advisers. Then, its reliability of the instrument was tested through the pilot study.

In pilot testing, the amended questionnaires were distributed to 12 randomly selected respondents from the study area. Then, to its measure reliability and determine acceptance level of the questionnaire, Cronbach's alpha coefficient were calculated for each parts of the questionnaire. Concerning the acceptance level of Cronbach's alpha results, Cohen et al, (2007:506) identified that, the reliability level is acceptable if it is 0.70 or above. In this study the alpha coefficient for the all items is 0.877, suggesting that the items have relatively high internal consistency.

3.7. Methods of Data Analysis

The quantitative data collected through the questionnaire were processed using the Statistical Package for Social Sciences (SPSS V20.0). The SPSS V20.0 has the capabilities and flexibilities of analyzing huge data within seconds and generating an unlimited range of simple and sophisticated statistical results including frequency distribution tables, percentages, cumulative frequencies, and others. Thus, the researcher was considered appropriate using SPSS package for processing the data and the analysis in this study.

Moreover, open ended questions of the questionnaire and interview responses were organized and processed based upon contents and objectives of the study; in relation to the quantitative data. The responses of each interview question collected from the respondents were categorized according to their similarities to support the quantitative data.

The analysis of quantitative data was made using descriptive statistics, like frequency, percentage, mean, standard deviation and the like. Moreover, correlation coefficient and t-test were used to analysis significances of associations among respondents' responses of the questionnaire; and between different categories of the respondents'.

In the interpretation of the quantitative data, tables and graphs were used for visual presentation of the results of the study. Furthermore, the qualitative data were discussed in triangulation to the analysis of the quantitative data under each tables and graphs.

3.8. Ethical Consideration

Throughout this research process, the researcher can be governed by the ethical principles of the research. Specially, the most importantly emphasized ethical principles that are applied in this study were respecting the privacy of respondents and confidentiality of information revealed by the respondents.

An introductory letter from the department of Management; School of Business and Economics of Adama Science and Technology University were used as introductory means to get permission to collect data from the sample respondents and ECX. The data collection processes were conducted by informing the respondents' the right they have to participate or not in the research activities. They can withdraw from the study at any time without explaining their reasons. Thus, all the data for this study were collected from the sample respondents' only by their own well and interest.

Furthermore, confidentiality of information about the respondents was secured: no personal details of individual respondent's are produced on any parts of the study documents. Besides, any confidential information revealed by the respondents was kept secret except they could be used for academic purpose.

Chapter Four

4. Data Presentation, Analysis and Discussion

This study was, as described in the aforementioned chapter, aiming at examining the effectiveness of Ethiopia Commodity Exchange's (ECX's) market information dissemination among rural Clients registered under Adama Branch. The data were collected from the rural clients and employees of ECX's. 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.

In this section, the collected data were discussed, analyzed, presented. In doing so, the data gathered through the questionnaire were presented in tables. Apart from this, the data collected through interview were merged together and interpreted with the result of the questionnaire. This chapter generally consists of presentation of the statistical results obtained, illustrated tables, discussions of the results obtained from the questionnaire and interview of the target population.

Gender	Population	Sample		Responded	
		#	%	#	%
M	272	154	56.62	148	96.104
F	17	11	64.71	10	90.909
Total	289	165	57.09	158	95.758

The total of 158 respondents out of the 289 rural clients was participated in the study. The questionnaires were distributed to 165 rural clients. Among these 158 (95.76%) were kind enough to fill the questionnaires properly and return. The remaining 7 (4.24%) were failed to complete and return the questionnaires. Hence, 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.

4.1. Background Information of the Respondents

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

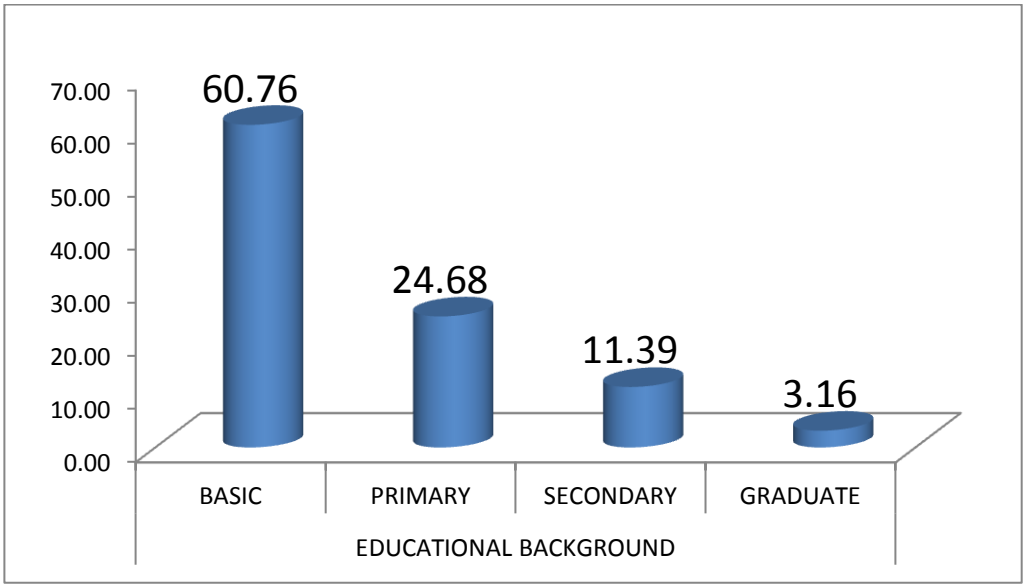

Figure 4.1: Educational status of respondents

Source: Questionnaire

With regard to educational status of the respondents Figure 4.1 revealed that 60.76% respondents have attained basic education, while 24.68% had attained primary education and 11.39% had attained Secondary education. Only 3.16% of the respondents were graduate level.

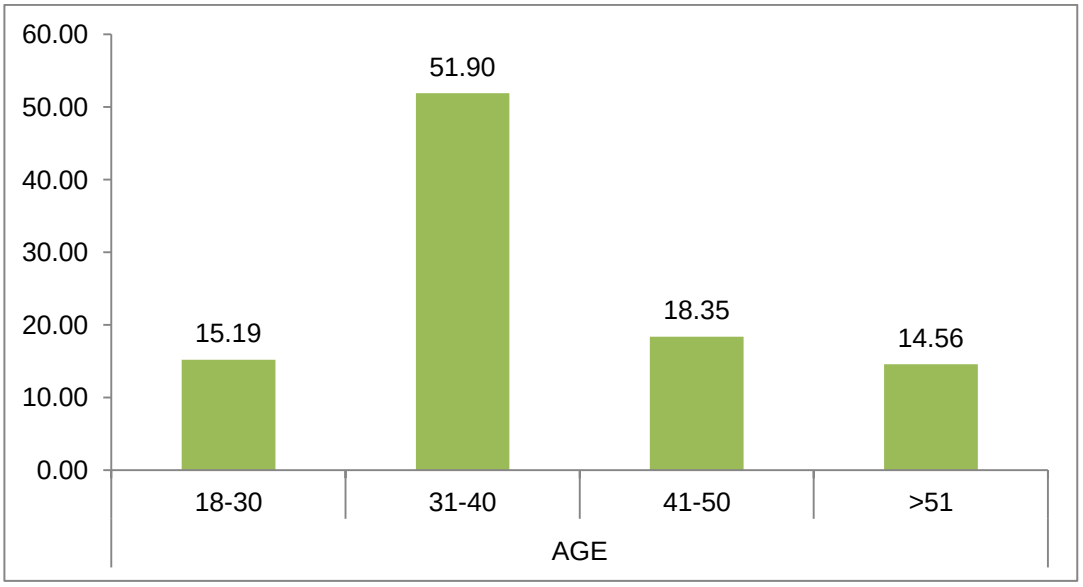

Figure 4.2: Respondents by Age (percentage)

Concerning the age of respondents, as can be seen from figure 4.2, the majorities of the respondents' (51.90%) were between age of 31-40 years; followed by 18.35% of the respondents found in age group of 41-50 years. Moreover, there were 15.19% of respondents under youth age group (18-30 years old) and 14.56% of respondents above 51years old.

In general, data related to the demographic characteristics of the respondents showed the dominance of the number of male respondents and those respondents who attended only basic education. Moreover, when the numbers of youth respondents were compared with adult age groups the large majority of the respondents are above 30 years old. Here the dominance of male respondents was happened as a result of the registered rural clients of ECX in the study area. The data regarding educational attainment of the respondents and their age indicates the likelihood of them to understand and respond the questionnaire used in this study with the support of data collectors.

4.2. Most frequently used Market information dissemination channels of ECX

In this part data collected related to the first basic research question (Which market information dissemination channel of ECX are most frequently used by rural clients in the study area?) is presented and analyzed.

Table 4.1 Sources of market information for rural clients

No	Sources	N	%
1	ECX Channels	113	71.52
2	Traders	26	16.46
3	Friends	18	11.39
4	Others	1	0.63
Total		158	100.00

The data illustrated in Table 4.1 shows, majority of respondents' (113 or 71.52%) were used market information disseminated from ECX as a major source of agricultural market information. While

26(16.46%) obtain such information from traders at the time of exchange and 18(11.39%) of the rural clients use their friends to get market information.

This implies that, seven out of ten respondents (rural clients) had mostly used ECX's market information disseminated through different channels.

Therefore, market information disseminated from Ethiopia Commodity Exchange remains as a source of agricultural market information for rural clients registered under Adama Branch.

Table 4.2: Frequency of Market Information Utilization by rural clients

Demographic Characteristics		N	Mean	Std. Deviation	t-test	P-Value
Education	Basic Education	96	3.00	0.696	-4.917	.000
	Above Basic Education	62	3.68	1.037		
Age	Up to 30 Years	24	3.67	1.129	2.389	.018
	Above 30 Years	134	3.19	0.845		
Combined Overall result		158	3.27	.906		

The data in table 4.2 illustrates the frequency of market information utilization among rural clients of ECX by age and educational status. As can be seen from the table, overall frequency of market information utilization of the respondents was found at 3.27 mean score (SD=.906); indicating moderate level of utilization.

However, when the practice of rural clients' utilization of market information disseminated from ECX was compared among them by their educational status; a significant difference was observed between the groups of the respondents. Accordingly, those who had attended above basic education (M=3.68, SD=1.037) utilized the information better than rural clients who attained basic education (M=3.00, SD=.696). The calculated t-test result (t(95, 61) =-4.529, P=.000 <.05) also shows statistically significant differences between the two groups of respondents.

This implies more educated clients of rural areas were more frequently used the market price information disseminated by Ethiopia Commodity Exchange (ECX) than the counterpart.

Age is yet another influencing factor in the use of technologies, as the younger generation "grows up" with these technologies and feels more comfortable and confident in using them. The fear of using technology, named "technophobia", is more apparent in the older generation owing to an apparent lack of skills, experience and confidence with regard to technology (Gilbert, et al., 2003).

With regard to age; the data in the table shows that rural clients found at youth age group (between18-30 years old) have more utilized the market information of ECX (M=3.6, SD=1.129) than adult and old age group rural clients (M=3.19, SD=.845). The results of t-test (t(23,133)=2.389, P=.018<.05) also indicates statistically significant differences between youth and other age groups' in utilization of market information currently disseminated by ECX.

This means young rural clients (between18-30 years old) are frequently used the market information disseminated from Ethiopia Commodity Exchange (ECX) for their agricultural marketing decision than elder clients those above 30 years old; who used the market information moderately.

According to Susan's (2010), generation classification and the characteristics of generation; the current young generations are the most technologically sensed generation. They grew up with information technology and easily adapt to new information and technology. They like to test new developments and applications of information technology and try to identify ways of linking information technology functionalities.

In this regard the findings of this study identified supportive results with what was stated above: in that younger rural clients of ECX Adam branch used more frequently the market information disseminated from Ethiopia Commodity Exchange (ECX) than adults.

Table 4.3: ECX's Market Information Channels Frequently Used by Rural Clients: (by Age)

Channels	Up to 30 Years (N=24)		Above 30 Years (N=134)		Total (N=158)		t-test	P-Value	Rank
	Mean	SD	Mean	SD	Mean	SD			
Electronic Tickers	2.88	0.537	2.58	0.895	2.63	0.856	1.551	0.123	4
Mobile Phone Short SMS	3.46	0.588	3.07	0.915	3.13	0.882	1.980	0.049	2
Interactive Voice Response	3.25	0.532	2.84	0.748	2.90	0.733	2.595	0.010	3
Bulletins – Market Commentary	1.17	0.565	1.19	0.577	1.18	0.574	-0.156	0.876	7
Radio	4.04	0.204	3.74	0.547	3.78	0.521	2.671	0.008	1
TV	2.50	0.590	2.43	0.921	2.44	0.877	0.383	0.702	5
Website	1.50	0.659	1.19	0.577	1.23	0.599	2.396	0.018	6

NB: 5= Almost Always; 4=Frequently; 3=Sometimes; 2=Seldom; and 1=Almost never.

Market information, at first, disseminated by word of mouth, as market user's travel to from the market to other locations. 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)

The data in Table 4.3 revealed that rural clients frequently get agricultural marketing information of ECX through Radio (M=3.78, SD=0.521), followed by Mobile Phone Short Message Service (M=3.13, SD=.882), and Interactive Voice Response (M=2.90, SD=.733), which were moderately used by rural clients to get ECX's agricultural market information in the study area.

However, Electronic Tickers (M=2.63, SD=.856) and Television (M=2.44, SD=.877) are used by rural clients to get market information rarely. The data in the table further showed, Website (M=1.23, SD=.599) and Bulletins-Market Commentary (M=1.18, SD=.574) were not usually used by rural clients of the study area to access market information of ECX.

It is argued that, Radio provides a cheap and on time means of information dissemination at any corner of a country, and it can be available and affordable widely because they do not usually require electric (most radios are used battery power to function), most rural peoples frequently use to get information. In relation to this the findings of this study identified Radio as the most frequently used channel to get agricultural market information disseminated by ECX.

They may frequently used Radio as they can carry and listen at their farm place while working their activities. Further, they may prefer to frequently use Radio; in view of the fact that, Radio disseminates information in different languages which helped rural clients to understand the information transmitted by their own language.

In relation to this an Audience Survey conducted at national level of the country by Electoral Reform International Services, indicated that in rural areas of Ethiopia radio is frequently used by 78.7% of rural people and considered as a key source of information in these areas (Ward and Ayalew, 2011). In addition, UNDP (2012) argued that radio is one of the most cost-effective channels for disseminating agricultural information to the rural community.

With respect to Mobile Phone Short message service Familusi et. al (2014), argued that, the coming of Global System for Mobile Communications (GSM), it has made it possible for people irrespective of their social status to use mobile phone. Asefa (2004) on his part stated that Mobile phone message has also become the preferred mode of communication among all types people not just for urban dwellers but also in rural areas. Using mobile phone they can receive and send multiple forms of information, as a result the utilization of Mobile phones have become a comprehensive and instant communication tool to send and receive any information that help an individual and community at large.

In this regards this study identified that among the channels listed in table 4.3 next to Radio, Mobile Phone Short Message Service was frequently used by rural clients in the study area. This was particularly more significant among young rural clients participate in this study. This was also true concerning Interactive Voice Responses and websites.

Furthermore, the results of t-test calculated between Youth respondents (Up to 30 Years) and other respondents with 31 and above years old on frequently used ECX's Market Information Channels, statistically significant differences were observed at $P<.05$ level of significances concerning Radio, Mobile Phone Short message service (SMS), Interactive Voice Response (IVR) and Website. The result of the data in the table clearly indicated that, those channels are mostly used by young age group of the rural clients than adults and old age groups.

On the other hand statistically significant difference was not observed between the two age groups of rural clients on the utilization of Electronic Tickers, TV and Bulletins-Market Commentary as Channel to receive ECX's Market Information.

Furthermore, the results of Interview administered with Manager and Experts of ECX in relation to most frequently market information dissemination channels; they responded that Electronic Price Ticker is mostly utilized by rural clients of ECX. However the finding of the study was much different from their expectations.

Table 4.4: ECX's Market Information Channels frequently Used by Rural Clients: (by Educational Status of the respondents)

Channels	Above Basic Education (N=62)		Basic Education (N=96)		Total (N=158)		t-test	P-Value
	Mean	SD	Mean	SD	Mean	SD		
Electronic Tickers	2.92	0.836	2.44	0.818	2.63	0.856	3.584	0.000
Mobile Phone SMS	3.42	0.933	2.95	0.800	3.13	0.882	3.387	0.001
Interactive Voice Response	3.13	0.799	2.75	0.649	2.90	0.733	3.270	0.001
Bulletins- Market Commentary	1.47	0.844	1.00	0.000	1.18	0.574	5.441	0.000
Radio	3.98	0.528	3.66	0.477	3.78	0.521	4.040	0.000
TV	2.63	0.814	2.31	0.898	2.44	0.877	2.242	0.026
Website	1.60	0.839	1.00	0.000	1.23	0.599	6.983	0.000

NB: 5= Almost Always; 4=Frequently; 3=Sometimes; 2=Seldom; and 1=Almost never.

The problem of illiteracy in developing countries is a cause for great concern, especially as ICTs are very much text-based in nature. This creates a massive barrier for effective utilization (Kenny, 2002). Moreover, ICT skills and support are crucial to the optimal use of these technologies. The literacy level of clients can determine the choice of market information dissemination channels since those channels are ICT based.

It is obvious that, illiterate peoples are retreat from using technologies that require a certain level of literacy than those people who are sufficiently literate. Moreover, literate peoples are more interested to search and use information on shortest time possible for their immediate needs.

In this study, these were reflected among rural clients' choice of a channel through which ECX currently disseminates agricultural market information for them. The mean score and t-tests results illustrated in table 4.4 showed statistically significant differences at $P<.05$ level of significances, between rural clients with better education and those who attained Basic Education in their preference and utilization of the channels to get agricultural market information disseminated by ECX.

The table evidently indicated that, all the channels were frequently used by more educated rural clients than by those rural clients with Basic Education. This was particularly high regarding the utilization of radio, Mobile, Interactive Voice Service and Electronic Ticker by educated rural clients in the study area. 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.

In sum, the findings of this study identified that preference of market information dissemination channel of ECX were showed that statistically significant differences by rural clients educational level. More educated clients of ECX prefer and used various channels for their market information need.

Table 4.5: Correlation Matrix between Channels and rural client's educational level and age

		Educ.	Age	EPT	SMS	IVR	Bulletins	Radio	TV	Website
Education	Pearson Correlation	1	-.527**	.276**	.262**	.253**	.399**	.308**	.177*	.488**
	Sig. (2-tailed)		.000	.000	.001	.001	.000	.000	.026	.000
Age	Pearson Correlation		1	-.123	-.157*	-.203*	.012	-.209**	-.031	-.188*
	Sig. (2-tailed)			.123	.049	.010	.876	.008	.702	.018
EPT	Pearson Correlation			1	.834**	.853**	.517**	.847**	.897**	.482**
	Sig. (2-tailed)				.000	.000	.000	.000	.000	.000
SMS	Pearson Correlation				1	.878**	.530**	.866**	.863**	.459**
	Sig. (2-tailed)					.000	.000	.000	.000	.000
IVR	Pearson Correlation					1	.484**	.792**	.822**	.475**
	Sig. (2-tailed)						.000	.000	.000	.000
Bulletins	Pearson Correlation						1	.495**	.447**	.727**
	Sig. (2-tailed)							.000	.000	.000
Radio	Pearson Correlation							1	.875**	.407**
	Sig. (2-tailed)								.000	.000
TV	Pearson Correlation								1	.386**
	Sig. (2-tailed)									.000
Website	Pearson Correlation									1
	Sig. (2-tailed)									

N=158

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

*. Correlation is significant at the 0.05 level (2-tailed).

The data illustrated in table 4.5 shows the results of correlation matrix; that indicated the choices of market information dissemination channels are positively related with educational levels of rural clients. As educational status of the respondents increased their preference of website (r(158)=.488, P<0.01), Bulletins–Market Commentary (r(158)=.399, P<0.01), Radio (r(158)=.308, P<0.01), Electronic Tickers (r(158)=.276, P<0.01), Mobile Phone SMS(r(158)=.262, P<0.01), Interactive Voice Response (r(158)=.253, P<0.01) and TV (r(158)=.177, P<0.05) as source of market information disseminated from ECX would also raised.

The degree of their relationship vary between Moderate level (regarding website, Bulletins – Market Commentary and Radio) and lower level for Electronic Tickers, Mobile Phone SMS, Interactive Voice Response and TV.

Moreover, the data of the table showed the choice of market information channels by rural clients 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(158)=-.209, P<.01), Interactive Voice Response (r(158)=-203, P<.05), Website(r(158)=-188, p<.05) and Mobile Phone short message services (r(158)=-157, p<.05).

In general, the results of table 4.5 showed that, as the age of rural clients increased utilization of channels decreases. However, statistically significant relationship was not observed at 0.05 levels of confidences for channels like Electronic Tickers, TV, and Bulletins-Market Commentary. 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 Rural clients in the study area frequently obtained agricultural marketing information of ECX through Radio (M=3.78, SD=0.521), followed by Mobile Phone Short Message Service and Interactive Voice Response (M=2.90, SD=.733). However, there was significant variation among rural clients in using market information dissemination channels between different age groups and by their educational status.

But, Regarding Electronic Price Ticker (M=2.63, SD=.856) was not used frequently by rural clients to get market information.

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 a recent reports of Ethiopia Commodity Exchange (**January** 2015), there are 140 Rural Electronic price Tickers installed in strategically selected Woredas' across the country. However, currently only 73(52.14%) of them are 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.

4.3. *Effectiveness of ECX's Market Information for Rural Clients*

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

Table 4.6: Effectiveness of ECX's market information in terms of evaluating criteria

Criteria	Mean	Std. Deviation	N
Comprehensive information	2.6962	.857	158
Accuracy and trustworthiness	3.1709	.555	158
Usability	3.2342	.640	158
Timeliness	3.8481	.531	158
Accessibility	2.5633	.735	158
Relevance and clarity	3.1456	.703	158
Economic	3.7722	.789	158

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; among others comprehensiveness of the information, accuracy and trustworthiness, usability, timeliness, accessibility, economic, relevance and clarity are usually used by professionals and practitioners as indicative criteria.

Considering the above stated facts, rural clients were asked to rate the effectiveness of market information disseminated by ECX using the criteria listed in table 4.6. As can be seen from the data of the table, the highest rating result (M=3.85, SD=.532) was identified for timeliness, in that, market information of ECX is transmitted on time required by rural clients and it was highly helped them to make marketing decision related to their commodities. Moreover, Economical, that is, receiving ECX's market information is cost effective for rural clients, was rated 3.77 mean score (SD=.789) and ranked the second criteria with highest effectiveness rating results. The third highest criteria with 3.23mean score (SD=.640) was about usability of market information disseminated by ECX for rural clients.

On the other hand, the effectiveness of ECX's market information in terms of accessibility was rated by rural clients the least mean score among the seven criteria listed in the table (M=2.56,SD=.735); followed by comprehensiveness (M= 2.70, SD=.857) 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 rural clients have a share.

In general, the effectiveness of ECX's market information with respect to the criteria listed in table 4.6, varies between a minimum of 2.56 mean score and a maximum of 3.85 mean score. 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 (M=3.20, SD= .604)

Moreover, an interview response regarding effectiveness criteria of market information among rural clients also identified similar issues listed in table 4.6. They emphasized problem related to relevancy and clarity of market information they disseminate.

They believed that Dissemination of Market data through mass media (TV, Radio and Newspaper) sometimes may mislead users due to high variety of commodities. However, the finding of this study shows majority of rural clients mostly used radio as a channel to receive market information. Though the response of interviewed ECX employees is somewhat similar to the responses gathered from rural clients using questionnaire.

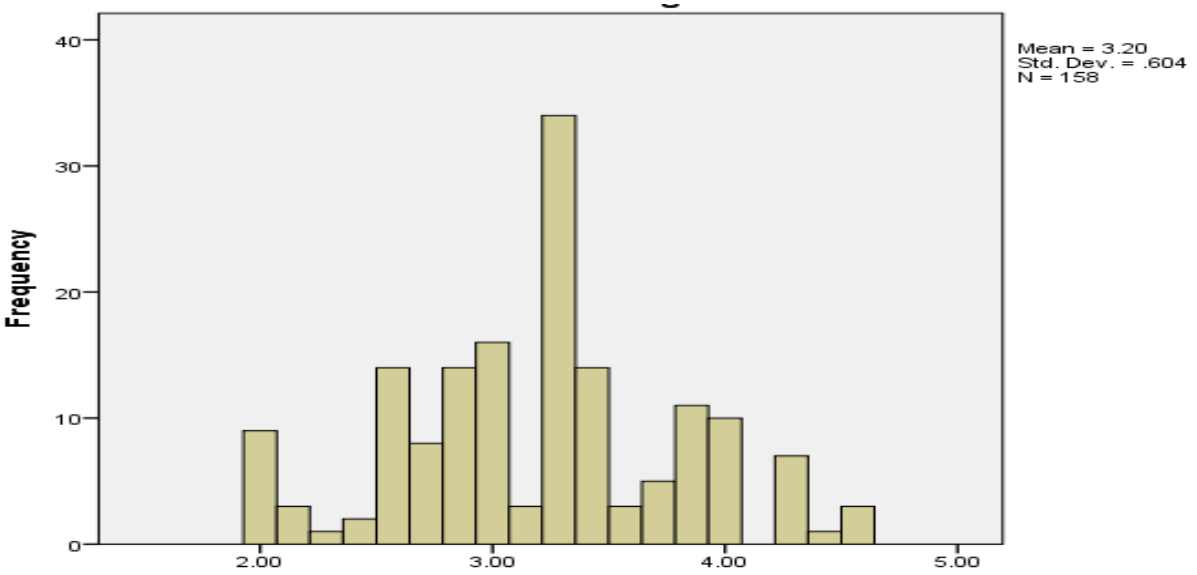

Figure 4.3: Effectiveness in terms of criteria to evaluate market information

As Evans and Berman (2001), portrait that market information, especially price information will assist the marketer to take decisions on how much to charge and where to sell the product. Once the marketer has access to market information regarding the kind of product needed by the target market, price, distribution channels, etc. it becomes easier to make marketing decision.

Table 4.7: Correlation Matrix between market information evaluating criteria and Effectiveness of ECX's market information (4Ps)

		4P	Comprehensive.	Accuracy. & trust.	Usability	Time.	Accessibility	Relevance & clarity	Economic
4P	Correlation	1	.896**	.822**	.808**	.815**	.836**	.657**	.897**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000
Comprehensive information	Correlation		1	.779**	.804**	.779**	.920**	.570**	.857**
	Sig. (2-tailed)			.000	.000	.000	.000	.000	.000
Accuracy and trustworthiness	Correlation			1	.890**	.628**	.746**	.637**	.787**
	Sig. (2-tailed)				.000	.000	.000	.000	.000
Usability	Correlation				1	.667**	.774**	.603**	.774**
	Sig. (2-tailed)					.000	.000	.000	.000
Timeliness	Correlation					1	.791**	.690**	.661**
	Sig. (2-tailed)						.000	.000	.000
Accessibility	Correlation						1	.530**	.848**
	Sig. (2-tailed)							.000	.000
Relevance and clarity	Correlation							1	.565**
	Sig. (2-tailed)								.000
Economic	Correlation								1
	Sig. (2-tailed)								

N=158

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

Table 4.7: 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 relationship were observed between criteria's and overall effectiveness, (economic ($r(158)=.897$, $P<.05$), comprehensiveness ($r(158)=.896$, $P<.05$), accessibility ($r(158)=.836$, $P<.05$), accuracy and trustworthiness($r(158)=.822$, $P<.05$), timeliness ($r(158)=.815$, $P<.05$), usability ($r(158)=.808$, $P<.05$) and relevance and clarity ($r(158)=.657$, $P<.05$)). Literatures also strengthen the study result illustrated in table 4.7.

According to Andrew (2003) If MIS are to have any meaning for farmers the information they provide must be accurate and farmers must understand to which product, quality, etc. the prices refer. Information by itself has no worth but, its value comes from its use (Kotler and Armstrong, 2002). Market information must be timely, in the sense of being relevant to current decisions, and must be speedily transmitted to users and each interested party should have equal access to all the information relevant to the bargaining and marketing processes. (V.M. Open University 2011) and (CTA, 2006). Market information must be relevant and clear (Cravens, 1996)

Table 4.8: Rural clients' responses on ECX's market information effectiveness in terms of 4Ps'

No	4Ps	Mean	SD
1	Production	3.08	0.472
2	Pricing	3.09	0.448
3	Promotion	3.05	0.368
4	Place	3.11	0.267
All items		3.08	0.280

NB: 5=Very High; 4=High; 3=Moderate; 2=Low; and 1=Very Low

With regard to the effectiveness of ECX's market information disseminated for them; rural clients were asked to rate the extents of its effectiveness in terms of the benefit they obtained to made production decision, price setting for their products, promotion and choice of place where to sale their agricultural commodities.

Accordingly the mean score of their responses illustrated in table 4.8 depict that, rural clients are rated similar results for all of the marketing mix (4Ps). They rated almost moderate level of effectiveness (M=3.00) for all of them. However, with slight variation from others, the highest level of effectiveness was rated 3.11 mean score (SD=.267) regarding the choice of place where to sale their agricultural products. Next to this, concerning the benefit they obtained in price setting and to make planed production decision were rated 3.09(SD=.0448) and 3.08(SD=.472) mean score respectively. The lowest rating result (M= 3.05, SD=.368) about the effectiveness of market information disseminated by ECX was related to promotion of agricultural commodities of the rural clients'.

In general the mean score presented in the last row of table 4.8 clearly indicated that, the overall level of effectiveness of ECX's market information for rural clients was found at moderate level with 3.08 mean score (SD=0.280).

As argued by authors and practitioners of the field, including Kotler (2003), Andrew (2011) and The World Bank (2012) basically the effectiveness of any market information is expressed by its significances and contributions it offer for key users of the information.

Market information, especially price information will assist the marketer to take decisions on how much to charge and where to sell the product. Once the marketer has access to market information regarding the kind of product needed by the target market, price, distribution channels, etc. it becomes easier to make marketing decision (Evans and Berman, 2001).

4.4. *Challenges of Rural Clients in using ECX's Market Information*

Rural clients are 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 4.9: Major factors that influence rural clients using Market information disseminated by ECX

No	Factors/Challenges	Mean	SD	Rank
1	Shortage of adequate electricity service	4.38	0.604	4
2	Insufficiency of telecommunication service	4.39	0.616	3
3	Poor roads that link the rural areas	3.56	0.570	7
4	Lack of knowledge to understand and analyze market information	4.11	0.654	5
5	Absence of market information receivers	3.30	0.718	8
6	Obsolesce of the information	2.20	0.643	9
7	The language used to disseminate market information is not known	4.54	0.571	2
8	Frequent disruption of electronic price board	4.54	0.537	1
9	Long distance where electronic price board is located	3.79	0.639	6

5=Very High; 4=High; 3=Moderate; 2=Low; and 1= Very Low.

As revealed by table 4.9 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 by World Bank (2012), Information should be developed according to need of the end users (e.g. farmers), and provided in local languages, in simple, interactive form. Farmers lack pertinent information to improve their productivity and claims that high levels of illiteracy keep them from making use of written sources of information, besides inability to use the services owing to the low levels of computer literacy.

Market information can be affected by various factors related to disseminator, channel, user or any other external factors. Particularly the effectiveness of market information can be affected by the user's side variables in terms of their literacy level, economic status to have the receivers, understanding transmission language, attitude towards market information and the like.

On the other hand factors like inappropriateness of language used for dissemination, lack of facilitating receivers for rural community, obsolescence of information and other similar issues can be mentioned as producer and disseminator related factors. Moreover, issues regarding channels and the infrastructure required for the transmission of the information through the respective channels can affect the significance of information among users (World Bank, 2012).

Considering these facts rural clients 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 4.9. According to their responses, top five factors currently affecting utilization and significance of market information disseminated by ECX are:

1. Frequent disruption of electronic price board(M=4.54, SD=0.537),
2. Language used to disseminate market information(M=4.54, SD=0.571),
3. Insufficiency and interruption of telecommunication(M=4.39, SD=0.616)
4. Shortage of adequate electric services(M=4.38, SD=0.604) and
5. Lack of knowledge to understand and analyze market information(M=4.11, SD=.654)

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

On the other hand obsolescence of information (M=2.20, SD=0.643) was identified as a least factor by respondents. This means rural clients were not strongly affected by obsolescence of information as the remaining eight items listed in table 4.9.

The next least factor identified at ease level with 3.20 mean score (SD=0.718) was shortage of market information receivers like Radio, TV, Mobile phone and others among rural clients. However the calculated mean result for this item shows the extent of its influence was found above moderate level.

Table 4.10: Correlation between the items identified as influencing factors and effectiveness of market information

Correlations

Items		4P	Electricity	Tele.	Poor roads	Knowledge	Receivers prob.	Obsolesce	Language prob.	Disruption of EPB	Distance
4P	Correlation	1									
	Sig. (2-tailed)										
Shortage of electricity	Correlation	-.842**	1								
	Sig. (2-tailed)	.000									
Insufficiency of tele. service	Correlation	-.484**	.265**	1							
	Sig. (2-tailed)	.000	.001								
Poor roads	Correlation	.148	-.193*	-.064	1						
	Sig. (2-tailed)	.063	.015	.424							
Lack of knowledge to understand	Correlation	-.906**	.751**	.479**	-.213**	1					
	Sig. (2-tailed)	.000	.000	.000	.007						
Absence of MI receivers	Correlation	-.315**	.149	.022	.153	.257**	1				
	Sig. (2-tailed)	.000	.062	.780	.055	.001					
Obsolesce of the information	Correlation	-.155	.184*	-.099	.152	.025	.218**	1			
	Sig. (2-tailed)	.051	.020	.216	.057	.753	.006				
The language is not known	Correlation	-.800**	.807**	.156*	-.065	.679**	.058	.196*	1		
	Sig. (2-tailed)	.000	.000	.050	.415	.000	.472	.013			
Frequent disruption of EPB	Correlation	-.785**	.793**	.140	-.102	.667**	.056	.224**	.929**	1	
	Sig. (2-tailed)	.000	.000	.080	.202	.000	.481	.005	.000		
Long distance to EPB	Correlation	-.329**	.306**	.096	.304**	.267**	.344**	-.070	.257**	.315**	1
	Sig. (2-tailed)	.000	.000	.229	.000	.001	.000	.381	.001	.000	

N=158

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

*. Correlation is significant at the 0.05 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 4.10.

The table further indicates the presence of strong negative relationship between top four influencing factors identified in table 4.9 and effectiveness of market information. In similar manner, the two factors identified as least challenges among the items listed in table 4.9 also confirmed by having weak relationship with effectiveness of market information illustrated in table 4.10.

In sum, the result of descriptive statistics illustrated in table 4.9 and a correlation matrix of table 4.10 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 rural clients also identified similar issues listed in table 4.9. 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 rural clients as a problem.

In support of respondents' responses and interview results, ECX's reports further stated that, out of 140 Electronic Price Ticker 67(47.86%) are not working properly due to technical failure, power interruption and telecom problem.

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

Chapter Five

5. Summary, Conclusions and Recommendations

5.1. Summary of major findings of the study

The major purpose of this study was to examine the effectiveness of market information disseminated by Ethiopia Commodity Exchange (ECX) to rural Clients registered under Adama Branch. 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 rural clients in the study area; how much ECX's market information is effective in terms of production, pricing, place, promotion and expected benefits for rural clients in the study area; and what are the challenges rural Clients 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 165 respondents. Out of this 158(95.76) of them 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.

5.1.1. Demographic characteristics of the respondent

The majority of respondents participated in this study were male rural clients. In terms of their educational status the large numbers of rural clients (96 = 60.76%) have attained only basic education. Regarding their age out of 158 respondents 82 (51.90%) of them were categorized between 31 to 40 years age group. This means, when the numbers of youth respondents were compared with adult age groups the large majority of the respondents are adult.

In general, data related to the demographic characteristics of the respondents showed the dominance of the number of male respondents and those respondents who attended only basic education.

Here the dominance of male respondents happened as a result of the number of registered male clients under Adama branch of ECX.

5.1.2. Frequently Used Channel

Market information disseminated from Ethiopia Commodity Exchange was used by majority of rural clients 113(71.52%) as a major source of agricultural market information,

Overall frequency of market information utilization of the respondents was found at moderate level (M=3.27, SD=.906). However, literate clients of rural areas have frequently used the market information disseminated from Ethiopia Commodity Exchange than those only attained basic education.

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Rural clients frequently obtained agricultural market information disseminated from Ethiopia Commodity Exchange (ECX) through Radio (M=3.78, SD=0.521) and Mobile Phone Short message service (M=3.13, SD=.882).

However, Electronic Price Ticker (M=2.63, SD=.856) is not frequently used by rural clients to get market information.

But, Website (M=1.23, SD=.599) and Bulletins-Market Commentary (M=1.18, SD=.574) are not usually used by rural clients of the study area to access market information of ECX.

Moreover, the choice of market information channels by rural clients was inversely related with age of rural clients. 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 rural clients of ECX are frequently utilized to satisfy their market information need.

5.1.3. Effectiveness of Market Information

Out of seven criteria used to measure the effectiveness of ECX's market information the minimum effectiveness result were 2.56 mean score regarding accessibility and 2.70 mean score concerning comprehensiveness. On the contrary the maximum effectiveness result was 3.85 mean score concerning timeliness; which was followed by economic (M=3.77) and usability (M=3.23). This implies relatively market Information of ECX was transmitted on the time required by rural clients,

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

The overall results of ECX's market information effectiveness in terms of the seven criteria was found at moderate level (M=3.20, SD= .604). This indicated that, rural clients were not sufficiently benefited from the market information disseminated by ECX as intended with all its quality.

On the other hand, the overall level of ECX's market information effectiveness with regard to outcomes or marketing mix(Product development, price setting, promotion and place choice) for rural clients was found at moderate level with 3.08 mean score (SD=0.280) without significant differences among them.

5.1.4. Challenges of Rural Clients in using ECX's Market Information

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. Frequent disruption of electronic price board(M=4.54, SD=0.537),
2. Language used to disseminate market information(M=4.54, SD=0.571),
3. Insufficiency and interruption of telecommunication(M=4.39, SD=0.616)
4. Shortage of adequate electric services(M=4.38, SD=0.604) and
5. Lack of knowledge to understand and analyze market information among rural clients(M=4.11, SD=.654)

In general, all the above responses obtained through questionnaire and interview indicated that the major challenge affecting the effectiveness of market information utilization by rural clients were associated with infrastructure (electric and telecommunication service), language used for production and dissemination of the information and knowledge of rural clients 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 rural clients were less educated. However, literate clients of rural areas were frequently used the market information disseminated from Ethiopia Commodity Exchange than those only attained basic education.

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On the other hand, rural clients frequently obtained agricultural market information disseminated from Ethiopia Commodity Exchange (ECX) through Radio followed by Mobile Phone Short message service (SMS). However, Website and Bulletins-Market Commentary were not usually used because it is not accessible for them, In addition, REPT are utilized rarely by rural clients. This may associated with technical failures, and frequent disruption of electric and telecommunication service. However, as stated by ECX Jan 2015 the basic purpose of installing REPT 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 REPT are not achieving its intended objectives. As a result rural clients are forced to use the traditional forms of channel which is Radio as a means to get market information disseminated from Ethiopia Commodity Exchange..

Basically the effectiveness of any market information is expressed by its significances and contributions it offers for key users of the information.

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

The effectiveness of any market information could be reflected by the output of end users. However the information transmitted for them should be evaluated to check whether they fulfill required standards particularly accessibility, clarity timely and the like. The findings of this study confirmed that for rural clients the issue of clarity and timely were not a problem. Moreover issue related to Relevance and clarity, usability and accuracy of the market information were not series issue. However the issue of accessibility and the contribution of market information for rural clients were not satisfactory.

From this one can conclude that the issue of market information outcomes in that how much it significantly contributed for rural clients production, pricing, place and promotion were not get proper attention by concerned bodies rather they gave attention for the development of information .

Moreover, it is generally concluded that the rural clients still faces problems accessing essential market information that could help them in making timely and accurate decisions. In general rural clients of Adama branch 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 rural clients 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 SMS and IVR, to provide a wide range of information comparatively low.

Innovative approaches such as ICT kiosks 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 rural clients in the most cost effective way.

However, using ICT (mainly Computers and cell phones) to disseminate information to market actors is more controversial. The MIS which rely heavily on Computer and mobile phones run the risk of bypassing remote areas that are not covered by Internet and mobile phone networks, illiterate rural clients who have difficulties in using website, Bulletin-Market commentary and SMS.
Currently in Ethiopia, farmers do not have efficient mechanism of market information access. Radio and Television broadcast give farmers limited price indications of a few agricultural products at selected markets across the country. To solve these problems the following recommendations are suggested:

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 rural woreda-net program and TVETs located in rural areas. Linked information kiosks with rural woreda-net's and TVETs will 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.

Just like other electronic gadgets, all ICT tools/facilities require power to function. However, as the finding of this study identified, rural clients 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.

Obtaining feedback on the results of the information will help both ECX and the rural clients for improved information dissemination and the utilization of market information for successes. Thus it is advisable if ECX develop such mechanisms that enable them to get on-time feedback and utilize in future endeavor. In this regard arranging annual conferences with market information users and conducting action research are recommended on dissemination and utilization of market information.

Finally, although the findings of this study identify major challenges that affect rural clients' to use market information of ECX, there might be other influencing factors not assessed through this study. So, to investigate such factors and to take proper actions on time; it is advisable if further in-depth study is conducted on the issue related to utilization of market information at all levels and branches of ECX specifically factors to be considered.

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Appendices

Appendix 1

Adama Science Technology University
Department of Management
MBA Program

A Questionnaire to be filled by ECX's Rural Clients

Dear, Respondent!

This questionnaire is to collect relevant data that will help for the study of MBA thesis on the topic "***Effectiveness of Ethiopia Commodity Exchange's Market Information Dissemination among Rural Clients: The Case of Adama Branch.*** I would like to assure you that this study is purely academic and hence would not affect anyone in any ways as all information will be kept confidential. Rather the result of the study is expected to be valuable inputs to improve the practice of Ethiopia Commodity Exchange's market information dissemination among rural clients. So, you are selected for this study and your genuine and frank responses are prime importance for the success of the study.

I would greatly appreciate your participation in this study.

Sincerely!

General Directions

- You are not required to write your name in any parts of the questionnaire
- Respond to all closed-ended questions by putting "✓" marks in the boxes and to the open-ended ones by writing your responses on the spaces provided.

Part I: Respondents' Background Information

1. Gender: Male ☐ Female ☐
2. Education: Basic Education ☐ Primary ☐ Secondary ☐ Graduate ☐
3. Age: 18-30 ☐ 31-40 ☐ 41-50 ☐ >51 ☐

Part II: Market Information Dissemination Channel Related Items

4. Where do you get market information so far?

   a). ECX Channels ☐ b).Traders ☐ c). Friends ☐ d). Others ☐

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

   a) Almost Always ☐ b) Frequently ☐ c). Sometimes ☐

   d) Seldom ☐ e) Almost never ☐

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

   a) Pea bean ☐ b) Maize ☐ c) Wheat ☐

7. 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=Almost never.

No	Channels	5	4	3	2	1
1	Electronic Tickers					
2	Mobile Phone Short Messaging Service (SMS)					
3	Interactive Voice Response (IVR) service					
4	Bulletins – Market Commentary					
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

8. 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. The market information I obtained from ECX:

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					

9. 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 ☐

10. 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.

	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, and demand conditions at each level of the market					
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

11. 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.

	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					

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

    _____

    _____

    _____

    _____

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

    _____

    _____

    _____

    _____

Appendix 2

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

Reliability

Case Processing Summary

		N	%
Cases	Valid	12	100.0
	Excluded[a]	0	.0
	Total	12	100.0

a. Listwise deletion based on all variables in the procedure.

Channel

Reliability Statistics

Cronbach's Alpha	N of Items
.865	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Electronic Tickers	17.9167	16.629	.826	.817
Mobile Phone Short Messaging Service (SMS)	17.1667	21.606	.325	.881
Interactive Voice Response (IVR) service	18.0833	16.811	.884	.810
Bulletins – Market Commentary	19.2500	19.114	.438	.878
Radio	17.3333	20.606	.644	.851
TV	17.7500	17.841	.699	.837
Website	19.0000	16.909	.734	.831

Effectiveness Criteria

Reliability Statistics

Cronbach's Alpha	N of Items
.886	7

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Comprehensive information	20.7500	12.023	.527	.903
Accuracy and trustworthiness	21.3333	16.242	.102	.919
Usability	21.1667	10.697	.921	.835
Timeliness	20.9167	12.811	.917	.850
Accessibility	21.9167	11.538	.828	.849
Relevance and clarity	21.3333	12.970	.730	.865
Economic	21.0833	12.447	.884	.849

Challenges

Reliability Statistics

Cronbach's Alpha	N of Items
.843	10

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Shortage of adequate electricity service	32.0833	14.992	.881	.789
Insufficiency of telecommunication service	32.0000	19.091	.342	.845
Lack of internet service	32.0833	14.992	.881	.789
Poor roads that link the rural areas	32.7500	22.205	-.196	.874
Lack of knowledge to understand and analyze market information	32.3333	18.606	.699	.823
Absence of market information receivers	33.0000	20.364	.196	.852
Obsolesce of the information	34.0000	16.182	.741	.807
The language used to disseminate market information is not known	32.0833	13.902	.756	.807
Frequent disruption of electronic price board	31.7500	17.841	.831	.812
Long distance where electronic price board is located	32.6667	19.333	.299	.848