DETERMINANTS OF MULTIPURPOSE COOPERATIVES MEMBER PARTICIPATION IN AGRICULTURAL OUTPUT MARKETING IN SOUTHWEST ETHIOPIA

MSc. THESIS

BY

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DETERMINANTS OF MULTIPURPOSE COOPERATIVE'S MEMBER PARTICIPATION IN AGRICULTURAL OUTPUT MARKETING IN KERSA DISTRICT, JIMMA ZONE, OROMIA REGION, ETHIOPIA

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A Thesis Report

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Chairperson, DGC Signature Date

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Chairperson, CGS Name Signature Date

DEDICATION

This thesis work is dedicated to my mother Galitu Salbana whom I lost her before 6 years due to cancer and for those who scarified their life for peace, freedom democracy and love of nations.

STATEMENT OF THE AUTHOR

I, Rusha Begna, hereby declare that the thesis entitled "Determinants of Multipurpose Cooperatives member participation in agricultural output marketing in Kersa District, Oromia Regional State, Ethiopia", submitted by me for the award of Master of Science Degree in Rural Development and Agricultural Extension (Specialization Rural Development) to the College of Agriculture and Veterinary Medicine, Jimma University, through the department of Rural Development and Agricultural Extension, is my original work and it hasn't been presented for the award of any other Degree, Diploma, Fellowship or other similar titles of any other university or institution. Finally, I confirm that source references used in thesis are dully recognized.

Name: Rusha Begna

Sign: _____

BIOGRAPHICAL SKETCH

The author was born in 1987 in Oromia National Regional State, Eastern Wollega Zone, and Gudeya Bila Woreda to his mother Galitu Salbana and his father Begna Wakwaya. He attended his Elementary and Secondary Schools in Gudeya Bila Junior School and Nekemte Comprehensive Senior Secondary School in Bila Town and Nekemte, respectively. He joined the-then Madda Walabu University in 2009/2010 academic year and completed his undergraduate studies with BSc. Degree in Rural Development and Agricultural Extension in June, 2012.

Soon after one year of his graduation, he was employed by the then Jimma Zonal office of Cooperative Promotion Agency as cooperative inspection expert to kersa District Cooperative promotion Office since May/2014 and served until June 14/2016.Then Starting from June, 15/2016 he Joined Oromia Forest and Wild Life Enterprise, Jimma Branch, Babia Folla District and served as forest extension expert until January 30/2019. Then in February 01/2019 he joined Ethiopian Environment and Forest Research Institute, Jimma Environment and Forest Research Center and has been serving as Junior Researcher Under Socio-economic, Policy, Extension and Gender Directorates.

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LISTS OF ABBREVIATIONS

ACDI	Agricultural cooperatives development initiatives
ATA	Agricultural Transformation Agency
ECX	Ethiopian Commodity Exchange
FAO	Food and Agricultural Organization
FCA	Federal Cooperative Agency
FCC	Federal cooperative Commission
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focused Group Discussion
GDP	Gross Domestic Product
GTP	Growth and Transformation plan
ICA	International Cooperative Alliance
ILO	International Labor Organization
KDARDO	Kersa District Agriculture and Rural Development Office
KDCPO	Kersa District Cooperative Promotion Office
KII	Key Informant Interview
Mo FED	Ministry of Finance and Economic Development
MPCs	Multipurpose cooperatives
MT	Metric Tones
NBE	National Bank of Ethiopia
UN	United Nations
UNDP	United Nations Development Program
USDA	United State Department of Agriculture
VOCA	Volunteer for Overseas Cooperative Assistance.

ABSTRACT

This study was conducted on determinants of multipurpose cooperative's member participation in agricultural output marketing at kersa district of Jimma zone, Oromia Regional State, Ethiopia. A two-stage sampling procedures were used and 4 multipurpose cooperatives were selected to obtain a sample size of 196 cooperative members. Quantitative data from primary sources were collected through household survey while qualitative data were collected through key informant interview, focus group discussions and personal observations. Data were analyzed using descriptive statistics like mean, chi-square, standard deviation, frequency, percentage and binary logit model. The result showed that 66.36% of cooperative members were participants in agricultural output marketing where as 33.64% were non-participants. Multipurpose Cooperatives are serving as the primary source of agricultural inputs. However, the output marketing activity of the sampled multipurpose co-operatives in the district is not as such remarkable. The binary logit model result showed that Out of 9 significant explanatory variables, age, education, landholding, change in standard of living due to joining of cooperative, membership in other cooperatives other than Multipurpose Cooperatives, determined participation decision of members in agricultural output marketing positively and significantly while the other four variables determined negatively *and significantly. Moreover, the result of key informant and focus group discussion indicated that the participation of multipurpose cooperative's member in agricultural output marketing were hindered by internal and external challenges. In general, the agricultural output marketing of multipurpose cooperatives in the study area have been affected by different demographic, socio-economics and institutional factors. Therefore, the study has suggested that as Woreda cooperatives promotion agency should also help these cooperatives to increase members' participation in agricultural inputs as well as outputs and create linkages with financial institutions to solve their shortage of capital. Moreover, they are required to improve the role of multipurpose cooperatives and address challenges in agricultural output marketing, among governmental organizations, NGOs and the community.*

Keywords: Input, output Marketing, Participation, Agriculture, Multipurpose cooperative, Ethiopia.

1. INTRODUCTION

1.1. Background of the Study

Co-operation as a way of life has been and continues to be a tradition in finding the solution to the socio-economic problems of the people in the world in providing market access, credit and information to producers (Francesconi *et.al,*2013). Agricultural cooperatives, particularly multipurpose cooperatives hold much potential to enable these economically weak farmers to increase their collective bargaining power and individual capacities and so enhance the incomes of Sub Sahara African countries (Wanyama *et.al,*2009).

Ethiopia is among the countries in this region where agriculture plays a vital role in the economy. As agriculture continues to be an important sector to the Ethiopian economy, the cooperative sub-sector provides vital support services and plays a crucial role for the transformation of the agriculture sector (Navarra *et.al,* 2017).

Multipurpose cooperatives have been important in farm supply, providing fertilizer and other inputs, and product marketing including transport, storage and processing. Specifically, it plays an active role in the fields of banking, input provision, agro-processing, storage, in facilitating input and output marketing, dairy and many other social and economic activities. Many are smallholder farmers who lack modern inputs and market access (NBE, 2013).

As part of its effort to transform the agricultural sector, the Ethiopian government places a very strong emphasis on promoting cooperatives as one of the main organizational mechanisms to facilitate farmer access to inputs, credit, output markets and to improve coordination within the smallholder sector (Tefera *et al.,* 2016). For example, agricultural cooperatives were an integral part of the Ethiopian Growth and Transformation Plan I (GTP I) (2011–2015) and is given high priority to play an important role in strengthening the commercialization of smallholder agriculture in second Growth and Transformation Plan II (GTP II) (Commission, 2015). This has led to a substantial growth in the number of cooperatives and in the total number of members over the last decade. In Ethiopia, cooperatives (unions and primary cooperatives) have grown substantially in number over the last decade. For instance, from 2008 until 2013, the number of unions grew by 44% (Royer *et al*., 2017).

In response to the prevailing favorable environment, the number and diversity of cooperatives expand very rapidly. Accordingly, there are 311 cooperative unions with a total number of primary cooperatives of 8,909 and a capital amount of 2.3 billion birr. Out of this number 146(47 %) are multi-purpose cooperatives followed by saving and credit cooperatives 88(28.3%) and consumer cooperatives 22 (7 %). Among these 2264 of them were found Oromia regional state while 30 of them were found in the study area. Thus, multipurpose cooperatives currently constitute the first most common type of cooperative in the country in terms of number, membership and capital (Kifle, 2015).

However, MPC member farmers face difficulty to participate even in local markets due to subsistence production and inability to penetrate other influencing factors in searching for markets (Deresse *et.al*, 2018). Moreover, the roles of the MPPCs examined in the world have adapted to the dynamic change. The world of global market forces and dynamic economic, environmental and political change is creating new challenges and opportunities for their organizations (FCA, 2008).

This paper therefore, focuses on determinants of multipurpose cooperative members' participation in agricultural output marketing the study area. The study analyzed the role, challenges and influence of demographic, socio-economic and institutional factor of MPCs members' decision to participate in agricultural output marketing.

1.2. Statement of the Problem

Linking smallholder farmers to input and output markets is one of the main challenges in developing countries. Markets for agricultural inputs, outputs and finance, consumer goods and services are relatively 'thin' (with small volumes traded) and prone to large seasonal variability in supply and demand (Shiferaw *et al.,* 2011). Several scholars argue that the necessary action will not be achieved by market mechanisms alone, especially in rural areas with thin markets (Dorward *et al.,* 2004, Doner *et al., 2005*, Narrod *et al.,* 2009). The complementarity of the institutional constraints calls for concerted action to ensure that coordination problems are solved. Agricultural cooperatives are often seen as key institutional intervention in enhancing farmers' access to markets, as one form of institution that fulfil exchange and co-ordination functions in an economy (Barrett, 2008, Hellin *et al.,* 2009).

Several empirical studies that analyzed the determinants of cooperative member participation in agricultural output marketing in different parts of Ethiopia and elsewhere also indicate an overall positive contribution of cooperatives to marketing efforts. However, some of them (Ayenew and Mersha, 2018, Tekele and Kuma,2015, Muthyalu,2013) argue that, it is difficult to say that most cooperatives in Ethiopia have played a role that they are expected to play as they were not efficient in rendering services especially in the areas of input/ output marketing and in adopting quality- technology extensions services.

Moreover, the results are inconsistent, location-specific and vary with the nature of cooperatives (Biset and Yadessa, 2018; Ahmed and Mesfin, 2017; Alema, 2008, and Mojo *et.al,* 2017). Additionally, some studies show low participation of members in cooperatives (Anteneh *et .al,* 2011 and Bernand *et.al,* 2013) and suggest a need for updating information regarding the agricultural marketing benefits of cooperatives since low participation could be due to low benefits of cooperatives to the members. In fact, a recent study conducted to assess the economic impact of coffee farmer cooperatives in Ethiopia indicate that the low participation of cooperatives could be attributed to the undifferentiated services of cooperatives, i.e., cooperatives provide similar marketing and non-marketing services to both members and non-members (Mojo *et.al,* 2015a).

Currently the number cooperatives have extended across the entire country. There are 75,274 primary and secondary cooperatives, both agricultural and nonagricultural sector, of which, 74,904 are primary and 370 secondary cooperatives. Throughout the country the total member of primary cooperative reached to 14,902,340 of which, 10,684,557 are male and 4,217,783 are female members and holding a total capital of 15,720,560,928 billion birr (FCA, 2016). However, the roles of the multi-purpose cooperatives (MPPCs) examined in the world have adapted to the dynamic change. The world of global market forces and dynamic economic, environmental and political change is creating new challenges and opportunities for their organizations (FCA, 2008). Furthermore, multipurpose cooperatives were considered as a cure to relieve the bottlenecks on the Ethiopian farmer producers. The government and NGOs have facilitated direct technical and financial assistances to help cooperatives to farmer-owned, controlled, and profitable and governed in a democratic manner. However, the movement towards the production and marketing of agricultural products to the market has a recent phenomenon (Dejen and Matthews ,2016).

There is a scarcity of systematic, well organized, and updated literature on the subject of determinants of multipurpose cooperatives in agricultural output marketing due to several reasons. In the case of Ethiopia, however, there have also been gaps in documentation because of lack of smooth flow of information from lower to higher government levels, and misplacement of documents on cooperatives resulting from the continuous restructuring of government institutions at different periods (Lemma 2009).

Therefore, this paper intends to examine determinants of multipurpose co-operatives members' participation in agricultural output marketing in Kersa District, Jimma Zone, Oromia region, Ethiopia.

1.3. Research Questions

1. What are the roles played by multi-purpose cooperatives agricultural in input and output marketing in the study area?
2. What are the factors affecting members' participation of multi-purpose cooperatives in agricultural output marketing activities in the study area?
3. What are the constraints faced by multi-purpose cooperatives in the agricultural output marketing in the study area?

1.4. Objectives of the study

1.4.1. General Objective

The general objective of the study is to examine the roles and challenges of multipurpose cooperatives in agricultural output marketing in Kersa District, Jimma Zone, Oromia region, Ethiopia.

1.4.2. Specific Objectives

The specific objectives of the research include:

2. To assess the roles of multi-purpose cooperatives in agricultural output marketing,
3. To analyze factors affecting the participation of multi-purpose cooperatives members in agricultural output marketing activities, and
4. To identify challenges in the agricultural output marketing of multipurpose cooperatives.

1.5. Significance of the Study

The finding generated by this study will be useful to different stakeholders. Firstly, it would be useful for all committee members and the management bodies of the multipurpose cooperatives engaged in agricultural output marketing as well as other cooperatives operating under similar conditions in identifying factors through appropriate and relevant measures. The information would also provide a good lesson for new cooperatives to consider those factors at the very beginning. Secondly, the findings of the research have policy implications. It indicated important factors which should be considered for successful development of agricultural cooperatives and thereby reduce failure rate of those cooperatives. Thus, the findings can be used as input for the federal cooperative agency and other interested institutions on cooperatives while devising a policy on increasing agricultural output marketing of multipurpose cooperatives. Finally, this study could be a good stepping-ground for other studies on agricultural marketing cooperatives business. In brief, this research would be useful to cooperatives societies, researchers, and governmental and nongovernmental organizations for their policy formulation, planning and successful development of agricultural marketing cooperatives in the country.

1.6. Scope and Limitation of the Study

The scope of study was the overall determinants multipurpose cooperatives members' participation in the agricultural output marketing, Jimma Zone, Kersa District. The study is restricted both in space and time. Due to the constraints of resource and time as well as purpose of the study, not all the primary cooperatives involved in agricultural output marketing activity found in the study area were covered. The study is confined to MPCs which are engaged in agricultural output marketing. The validity of certain data collected from the MPC members and respondents may not be such completely perfect. A sample of four MPCs and one hundred and ninety-six (196) multipurpose cooperative members were randomly selected from four MPC members of the District. It also considers only four selected MPC members and limited to only 196 sample respondents of MPCs member in the District due to time and budget constraint.

The study paid particular attention to investigate the roles, challenges, and factor affecting members' participation of selected multipurpose cooperatives in the agricultural output marketing. Hence, the result of the study was applicable and delimited to the area of the study and other areas whose activities and socioeconomic and institutional dynamics are closely linked to the study area.

1.7. Organization of the Paper

The paper is compiled into five chapters. Chapter one focuses on background, statement of the problem, objectives of the study, research questions, significance and scope of the study, limitations and organization of the study. Chapter two presents literature review of international and national cooperative movements. Chapter three describes the profile of the study area and research methodology. Chapter four examines and analyzes findings of the research and finally, chapter five presents conclusion and recommendation of the study.

2. LITERATURE REVIEW

2.1. Theoretical Literatures

2.1.1. Definitions and Concepts

Cooperatives: There are two definitions of cooperatives are commonly used. 1. According to the International Cooperative Alliance (ICA) 1995; *"a cooperative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise."* Cooperative leaders around the world recognize the ICA, a non – governmental organization as a leading authority on cooperative definition and values. The ICA definition recognizes the essential elements of cooperatives; membership is voluntarily, coercion (force) is the antithesis (contrast) of co-operation. Persons compelled to act contrary to their wishes are not truly cooperating. True cooperation with others arises from a belief in mutual help; it can't be dictated in authentic cooperatives, persons join voluntarily and have the freedom to quit the cooperative at any time.

Another widely accepted cooperative definition is the one adopted by the United Sates Department of Agriculture (USDA) in 1987. *"A cooperative is a user-owned, user-controlled business that distributes benefits on the basis of use."* This definition captures what are generally considered the three primary cooperative principles such as user ownership, user control and proportional distribution of benefits.

Agricultural inputs: - are defined as products permitted for use in organic farming. These include feedstuffs, fertilizers and permitted plant protection products as well as cleaning agents and additives used in food production.

Agricultural Output: means any product or commodity, raw or processed, that is marketed for human consumption (excluding water, salt and additives) or animal feed.

Agricultural marketing: - It is the techniques of the sale of surplus agricultural produce at remunerative prices in organized and regulated markets orient is the performance of all business activities involved in harvesters and threshers; pump sets, and other implements (Muthyalu, 2013).

Participant: - for this study indicates multipurpose cooperative members both who bought any of agricultural input from their organization and sold their product to their organization at the same time while,

Non-participant: - means those multipurpose cooperative members neither bought nor sold any of agricultural input and output from their cooperative organization.

Multipurpose cooperative: - is one of the types of cooperative that organized by farmers with the objective of providing more than one service to themselves. It promotes integration of economic activities such as mobilizing capital to provide credit and inputs for agricultural production to members.

2.1.2. History of Ethiopian Cooperatives

The history of formal co-operative movement in Ethiopia started in the Imperial Period between 1950 and 1974 (Kodama, 2007). A co-operative development program was initiated to improve the growth of the agricultural sector and the rural economy. Several producers, multipurpose and consumer co-operatives were established. However, they were not successful and operated in an inefficient manner (Lemma, 2008). Most sources agree that during the Imperial era, co-operatives were fairly limited in scope and experience.

Cooperatives during the *Derg* (Committee) Regime (1974-1991)

The planned economy period is also called the Derg regime. Co-operatives were established by the government under the guiding thoughts of socialism and were characterized by collective ownership, central planning and state control during planned economy period or Derg regime (Rahmato, 2002; Emana, 2009). Besides to this different types of co-operatives were established with the main aim of political patronage of farmers (Kodama, 2007; Francesconi, 2009). The number of primary co-operatives and the number of members increased significantly. While in the Imperial Period only 149 co-operatives were founded, the planned economy period saw the birth of more than 10 500 primary co-operatives, resulting in a membership of 4.8 million families (Lemma, 2009).

Under the planned economy regime, co-operatives faced multiple difficulties, such as non-transparent governance, involuntary membership, low leadership capabilities, politically established prices for farm products and internal corruption (Rahmato, 2002; Veerakumaran,

2007). Engdawork (1995) studied the contribution of co-operatives to rural communities using a survey among 11 producer co-operatives in Central Ethiopia. The author found that most co-operatives failed because of a lack of coordination and strategic direction (i.e. multiple and conflicting objectives). Towards the end of the Derg regime, state-owned co-operatives had collapsed in many parts of the country (Lemma, 2009).

Starting from 1994, the government designed various policies to strengthen the development and operation of co-operatives. The first formal legal framework was the Agricultural Co-operative Societies Proclamation 85/1994. Four years later, this was replaced by the Co-operatives Societies Proclamation 147/1998. The latter proclamation stipulated how all co-operatives—not just agricultural—should be organized: voluntary membership, established to solve members' socio-economic problems and jointly owned and democratically controlled by the members. The proclamation comprehended the ICA (2015) co-operative principles.

Under this proclamation, the government established the federal co-operative promotion desk. Later, based on Proclamation 274/2002, the Federal Co-operative Commission (the current Federal Co-operative Agency) was established. In this period of institutional renewal, a new generation of co-operatives has been established under new rules for membership, voting and ownership rights (Bernard *et.al,* 2010). Agricultural cooperatives were mainly involved in distributing farm inputs.

After 2005, the emphasis shifted towards more detailed policies on promoting agricultural production and therefore on supporting co-operatives to provide inputs and services. These objectives were central in the agriculture and rural development strategy of PASDEP1 (MoFED, 2006). Because the government saw smallholders as crucial actors in revitalizing agrifood systems, it facilitated farmers with improved infrastructure and new technologies (Spielman *et al,* 2011). The government also designed an agricultural marketing strategy, with an active role for co-operatives in strengthening smallholder commercialization.

The GTP foresees a central role for agricultural co-operatives in increasing the productivity and household incomes of smallholder farmers (MoFED, 2010; ATA, 2012). Through vitalizing input and output markets, agricultural co-operatives are important for the implementation of the Agricultural Growth Program. The state has formulated several

strategies to increase commercialization of smallholders (Gebre-ab, 2006; Gebremedhin & Jaleta, 2010). For instance, in 2008, the Ethiopian Commodity Exchange (ECX) was established as a formal institution to improve coordination in agrifood markets and to enhance smallholders' market integration (Meijerink, Bulte, & Alemu, 2014). Experts explained that the ECX became mandatory for the commercialization of coffee and other major industrial crops since 2010.

By the mid-1990s the government's view of cooperatives had changed and policy makers generally accepted the meanings and principles of cooperatives given by the International Cooperative Alliance (ICA) in 1995 (FCA, 2015). These efforts led to the establishment of cooperative legislations that consequently opened up a room for the flourishing of modern cooperatives in Ethiopia.

2.1.3. Theory of cooperatives

Neo-classical Theory

Helm Berger and Hoos (1962) use the neo-classical theory of the firm to develop short-run and long run models of a cooperative (including behavioral relations and positions of equilibrium for a cooperative and its members under different sets of assumptions) using traditional marginal analysis.

According to the neoclassical theory of the firm, each firm maximizes its profits subject to its cost structure and product demand constraints. Transaction costs (i.e., costs of obtaining information about alternatives and costs of negotiating, monitoring, and enforcing contracts) are assumed to be zero, as are adjustment costs and resources are privately held and fully allocated among alternative uses purely in response to financial incentives. How a firm would behave under different circumstances can be hypothesized by analyzing how changes in the firm's constraints affect its profits. Criticism of the neoclassical model of the firm was based on the assumption of profit maximization but, more fundamentally, that the model does not explain why these firms exist in the first place, and how the resources within these organizations are employed, allocated, and motivated to achieve maximum profits (Royer, 1999; Sykuta and Chaddad, 1999). Sykuta and Chaddad (1999: 69) contend that criticism of neoclassical economics also extends to the study of markets because it is "ill-suited to answering questions about when, why, and how markets evolve; about the institutional

infrastructure required to support market activity; and about the structures of the organizations involved in market activity."

The criticisms of the neoclassical paradigm led to the development of alternative models of the firm based on other assumptions (e.g., maximizing rate of growth, sales, and firm size subject to a profit constraint), focusing on the process of decision-making within the firm (i.e., rejecting maximizing behavior), and eliminating some of the unrealistic conditions of the model (e.g., by considering utility maximization, positive transaction and information costs, and alternative property rights structures) (Royer (1999). The role of positive transaction costs and variable property rights has given economists new insights into the existence of firms (including cooperatives), the evolution of alternative forms of business organization, and the choice of organizational form (aimed at minimizing both production and exchange costs). The next section, which draws heavily on Royer (1999), Sykuta and Chaddad (1999), and Iliopoulos and Cook (1999), provides a summary of the main components of the new institutional economics, namely, transaction cost economics, agency theory, and property rights theory.

Transaction cost economics (TCE)

Coase (1937) first described the concept of transaction costs in his seminal paper on the nature of the firm. Transaction costs - the costs of organizing and transacting exchanges - include search and information costs, bargaining and decision costs, and policing and enforcement costs (Williamson, 1985: 18-22). As Sykuta and Chaddad (1999) point out, every exchange involves each of these costs to a greater or lesser extent, with each transaction cost item being influenced by social institutions (norms of behavior), legal institutions (definition and enforcement of property rights), political institutions (mechanisms by which property rights are allocated), and economic institutions (availability and efficiency of markets). Major contributions in examining the role of transaction costs in explaining the existence and boundaries of firms have been made by Cheung (1969, 1983), Alchian and Demsetz (1972), Williamson (1981, 1985) and Klein *et al.* (1978). Williamson was the first to introduce the term "transaction cost economics" and it has since been associated with the new institutional economics (Sykuta and Chaddad, 1999).

According to Coase (1937), the reason why so much economic activity occurs in formal organizations (firms) and not on spot markets, is due to the inefficiencies of transacting in a world of imperfect information. Thus, it may be less costly to coordinate production within a firm instead of a market when the transaction costs of market exchange are high (Royer, 1999). Due to the possibility of opportunistic behavior by one or more parties in a transaction (i.e., to seek private gain at the expense of the group), contracts play a crucial role because they enable the parties to fulfill their obligations by protecting them from opportunistic behavior, thus decreasing the costs of transacting.

However, as Royer (1999: 46) points out, not all contracts are equally effective, and the "ability of a contract to facilitate exchange depends on the 'completeness' of the contract and the relevant body of contract law." Incomplete contracts, caused mainly by bounded rationality (i.e., limits on the capacity of individuals to process information, deal with complex issues and consider all possible contingencies), difficulties in specifying or measuring performance, and asymmetric information (i.e., when the parties do not have equal access to all information relevant to the contract), "will inevitably result in opportunism and transaction costs" (Royer, 1999: 47). Sykuta and Chad dad (1999: 73) contend that in the TCE framework "the incompleteness of contracts is a result (to one degree or another) of both transaction costs and bounded rationality." Transaction costs may make it too expensive to write a more complete contract that will better specify the foreseeable contingencies and resultant obligations of each party involved. The optimal completeness of a contract depends on the trade-off between marginal benefits and costs. (For a more detailed clarification of incomplete contracts see, for example, Williamson, 1981, 1985; Hart, 1995.)

Opportunism and the related transaction costs can also be associated with asset specificity, i.e., assets that are acquired to support specific transactions (Klein *et al.,* 1978; Williamson, 1981; Royer, 1999). Owners of such relationship specific assets cannot use these assets in other transactions without some loss in productivity or incurring costs in adapting them to other uses. Hence, once investments in relationship-specific assets have been made the trading parties involved may have few or no alternative trading parties, which eliminates competitive trading (i.e., the asset's opportunity cost will fall). This creates quasi-rents (i.e., a specific asset's earnings in excess of the minimum required to keep the owner from exiting the relationship), which can lead to opportunistic behavior. Sykuta and Chaddad (1999: 73)

contend that an asset's specificity is determined more by its value outside the specific relationship than by the motivation for its purchase. "An asset is said to be relationship-specific if its value in any other use is significantly lower." This decrease in value creates the quasi-rents that attract opportunistic behavior.

Royer (1999) mentions four different forms of asset specificity, namely: (1) site specificity (where assets are located nearby to reduce transport or inventory costs); (2) physical asset specificity (assets with physical properties specifically tailored to a particular transaction; e.g., a cheese factory or ethanol plant); (3) dedicated assets (investments based on a promise of a particular customer's business which would make it profitable); and (4) human asset specificity (acquired skills and knowledge of certain workers which are more valuable within a particular relationship than outside it). Sykuta and Chaddad (1999) add another form of specificity of importance to agricultural transactions, namely temporal specificity. This is due to the time-sensitive value of agricultural products and production processes which creates another margin which may entice opportunistic behavior by trading parties. Thus, a holdup problem arises "when one party in a contractual relationship seeks to exploit the other party's vulnerability due to relationship-specific assets" (Royer, 1999: 49).

In general, TCE can help to identify the important dimensions of a transaction and thus assist with the design of the most efficient institutional arrangement for conducting the transaction. "Essentially, a firm should select the institutional arrangement that minimizes the sum of its production and transaction costs" (Royer, 1999:49). According to Williamson (1985), frequency, uncertainty, and asset specificity are three characteristics of a transaction that are critical in designing the optimal institutional arrangement.

Agency theory

Agency relationships exist whenever an individual or organization (the agent) acts on behalf of another (the principal). Principal-agent problems arise because the objectives of the agent are usually not the same as those of the principal, and thus the agent may not always best represent the interests of the principal (Alchian and Demsetz, 1972; Royer, 1999; Sykuta and Chaddad, 1999). The terms of an agency relationship are typically defined in a contract between the agent and the principal (which could bind the agent to act in the principal's

interests, for example). Because contracts are generally incomplete, "there are opportunities for shirking due to moral hazard and imperfect observability" (Royer, 1999: 50).

Hence, the main focus of agency theory is on incentive and measurement problems, but the risk-sharing implications of incentive contracts are also crucial. As Sykuta and Chaddad (1999: 72) point out, "most applications of agency theory focus on the incentive vs. risk sharing trade-off of contracts aimed at aligning the interests of the agent with those of the principal." Agency theory is thus very relevant to the institutional structure of cooperatives because employed agents (managers) may not act in the best interests of cooperative owner-members (principal). The challenge, therefore, is which ownership and capital structures can be developed to lower agency costs (Fama, 1980; and Fama and Jensen, 1983, for a more detailed exposition).

Principal-agent problems in a cooperative are likely to give rise to member dissatisfaction. Richards *et al.* (1998: 32) point to various studies which argue that cooperatives experience greater principal-agent problems than proprietary firms due to "the lack of capital market discipline, a clear profit motive, and the transitive nature of ownership." Because cooperatives have no market for their equity (as opposed to IOFs), there is less incentive for members to monitor the actions of their managers. Cooperatives may also have greater difficulty of designing incentive schemes for managers that will align their personal objectives with those of the cooperative. Using data from a survey of cooperative members in Alberta, Canada, Richards et al. (1998) compared members' objectives (expectations) with those they perceived were held by their managers. Younger farmers and large producers, for example, felt that managers focused too much on the social role of cooperatives and not enough on profit issues such as higher prices, return on equity and quality of service. These two groups seemed to be least satisfied with their cooperatives' (managers') performance.

Property Rights Theory

Property rights theory, also referred to as the incomplete contracting theory of the firm, was developed by Grossman and Hart (1986), Hart and Moore (1990) and Hart (1995). It is based on the assumption that contracts are necessarily incomplete (e.g., due to asymmetric information between trading parties and bounded rationality), and thus do not "fully specify

the division of value in an exchange relationship for every contingency" (Sykuta and Chaddad, 1999: 72).

Hence, ownership (the right of residual control) of the assets involved in a transaction becomes critical in deciding how value is divided when a (non-covered) contingency arises. Since transaction costs are positive, "the allocation (and possible non-transferability) of property rights may have significant consequences for economic organization, behavior, and performance" (Sykuta and Chaddad, 1999: 73). Iliopoulos and Cook (1999) also refer to the distinction between the "traditional" property rights approach, in which ownership is synonymous with the possession of residual claims, and the property rights - incomplete contracts theory discussed above. Cook (1995) contends that property rights are vital for cooperatives to be sustainable, producer-controlled organizations. Before a cooperative can achieve improved market performance ("correcting market failures"), internal stability in a cooperative need to be achieved with clearly defined property rights.

2.2. The Legal Framework of the Current Ethiopian Cooperative System

The new era of the cooperative movement in Ethiopia started with a new Agricultural Cooperative Society Proclamation No 85/1994 in 1994 (Abebaw and Haile, 2013). This proclamation states that "*the government sets convenient conditions for the peasants living in rural areas to be organized freely and willingly to jointly solve their economic and social problems through pulling their resources.*" Unlike the past two regimes, the EPRDF government opened a legal space to organize cooperatives voluntarily, democratically and within a market setting.

Though this proclamation (No. 85/1994) helped to reorganize farmers on a voluntary basis to establish new cooperatives or to reorganize and strengthen the old ones, the organizers had a hard time to change peoples' attitude towards cooperatives due to the bad image of the cooperatives of the Derg regime (Holmberg, 2011). As further indicated by this same source, the initiators started with demonstration projects where the members started sharing dividends after a year that somehow helped to promote the benefit of the cooperatives to change the attitude towards them.

Similar to the past two regimes, the first cooperative society proclamation (No. 85/1994) of EPRDF was also only targeting the agricultural cooperatives and lacks sufficient details.

Hence, the government enacted the second proclamation (No. 147/1998) in 1998. This proclamation outlined the layers of organizational structure of the cooperatives into primary cooperatives, unions, federations, and cooperative leagues that can foster broader growth of the movement (FDRE, 1998 and Kodama, 2007).The proclamation also specified related organs of the cooperatives that include members, a general assembly, a special resolution, and a management committee with clear roles and responsibilities. Besides, it indicated the possible formation of an appropriate authority, such as a government organ5 established at federal, regional, or a local bureaus level. This government organ can organize and register cooperative societies, provide training and other technical assistance, and conduct research on cooperative societies.

Proclamation No. 147/1998 also emphasized on the payment system, i.e., that the cooperative unions should deduct 30% of the net profit and divide the remaining 70% among member cooperatives, while the member cooperatives, in turn, pay 70% of their profit to cooperative members as dividends. Furthermore, the proclamation mandated every cooperative society to have bylaws that should be formulated and accepted by the members themselves (FDRE , 1998).

While Proclamation No. 147/1998 is the backbone of the current cooperative society and cooperative movement in the country, there was (minor) amendment to this proclamation through Cooperative Society Proclamation (Amendment) No. 402/2004 in 2004. The amendment mostly aimed at strengthening membership incentives by improving their rights, for instance by allowing a cooperative society that faces shortage of capital to sell certain shares to a person who is not a member without contradicting the principle of the cooperative. This further opens up a room to mobilize capital, although not yet implemented (Alemu *et. al,* 2011).

Following the legal framework and strong promotion, several cooperative societies were established both in rural and urban areas. The Ethiopian government has also been formulating different development policies and strategies that support and strengthen cooperative movements, particularly since 2002 (FCA, 2014a). As a result, currently more than 60 thousand primary cooperatives with more than nine million members exist and own a total capital of more than 11.3 billion Ethiopian Birr (FCA, 2015).

Nevertheless, the revolution of new cooperative was not without criticism mainly, due to the strong involvement of the government from the viewpoint of the Western concepts of cooperatives and civil society (Kodama, 2007), which is still true. As reported by Ruben and Heras (2012), most (74%) of cooperatives in Ethiopia are initiated by government or non-government organs. Indeed, the long hand of the government in cooperatives is largely due to its development strategy that aims to extend cooperative services such as the supply of production inputs throughout the country.

2.3. Status and Distributions of Multipurpose Cooperatives in Ethiopia

The existence of clear and accommodating governmental policy and all-inclusive structures and the government's commitment to transform the subsistence economy have created conducive environment for the development of voluntary based cooperatives in the country (Kifle, 2015).

Table 1. Distribution and number of MPC unions and their capital, 2014

Region	No. of Multipurpose cooperative unions	No. of multipurpose Cooperatives	Capital in birr
Oromia	60	2214	485,774,477
Dire Dawa	1	38	2,291,831
Harare	1	7	382,000
SNNP	19	549	67,022,161
Tigrai	33	575	61,384,256
B/Gumuz	11	-	3,398,654
Amhara	21	1018	692,352,360
Total	165	4401	1,312,605,739

Source: Federal Cooperative Agency, 2014

2.4. Empirical Literatures

2.4.2. Role of Multipurpose Cooperatives in agricultural output marketing.

Cooperatives and agricultural marketing are viewed as current hot issue in economic and social development in all over the world, especially in our country. In Africa, agricultural cooperatives are playing crucial role in developing market to farmers in the rural areas, reducing transaction costs and in promoting participation of small farmers in to broader

market. The Ethiopian government has developed a strategy for the development of cooperative societies and other market actors on agricultural marketing, making value chains more efficient is to reduce transaction costs and risks. It represents a considerable amount of business activity in a country, generates much wealth and employment and is widely considered to be vital to a country's competitiveness (Tesfaye, *et.al*, 2016).

Multipurpose farmer cooperative societies were one of the agricultural cooperatives that are playing a significant role in supply chain of input and output by reducing difficulties of farmers to access market in terms of cost, time, negotiations power they lack. Furthermore, they provide multifaceted service such as: distributions of farm inputs, marketing of agricultural output, processing, credit services, storage facilities, packaging (Alema, 2008).

More public policies focus on cooperatives in Ethiopia because they are still the channels for input distribution in the countryside. For instance, multipurpose cooperatives are actively involved in the dissemination of agricultural inputs and about 56% of chemical fertilizers were provided by cooperatives in the 2010 production season (Matsumoto and Yamano 2010). MPCs can also provide credit services to member farmers that ease production constraints (Tefera *et al.* 2016). A major policy issue is how to develop the commercialization side of their activity, thus providing incentives for membership. Hence, the movement towards the production and marketing of agricultural products to the market has a recent phenomenon.

In addition, as evidence indicates cooperatives involvement in domestic market is at growing stages almost all multipurpose farmers' cooperative unions collect marketable grain surplus of members and sold at competitive market price. The market share of cooperatives is at low level it varies from 5% to 8% (FCAb, 2010). They are showing remarkable role in importing and distributing farm input particularly fertilizer to farmers under the domestic market. Starting from the year 2004, cooperative union in Ethiopia started to import fertilizer from abroad (Abera, 2010).

Furthermore, agricultural cooperative creates the ability for the supply of required agricultural inputs to farmers to make production at the right time that enhance productivity, assure to farmer's access to market to supply and market outputs produced by individual farmers. In addition, by strengthening their cooperation and integrations among different structure of

cooperative can enable them to grade, standardize, and value addition and processing of agricultural outputs to meet customer demands. Besides he added that, agricultural cooperatives can stand on behalf of small farmers and transact out the business in a cost effective manner and create ability to supply the required agricultural inputs to farmers (Suleman, 2009).

2.4.3. Factors affecting MPCs member participation in the agricultural output marketing

The development of cooperatives over time has been shaped by many factors and influences. Ingalsbe and Groves (1989) group these into three main types (all interrelated): (1) economic conditions (caused by war, depression, technology, government economic policy, etc.); (2) farmer organizations (including quality of their leadership, their motivation and enthusiasm to promote cooperatives, power to influence public policy, etc.); and (3) public policy (as determined by government interest, legislative initiative, and judicial interpretation).

For the success of multipurpose cooperatives in agricultural output marketing, members' participation is determinant factor. The success or the failure of the cooperative is largely determined by its member participation. Member participation in a cooperative matter can be determined by various factors. For this study the demographic, socioeconomic and institutional factors were identified as major factors influencing the participation decision of multipurpose cooperatives in agricultural output marketing.

Moreover, members' participation in cooperative decision making and its matters was found to be passive which affect the cooperative role negatively. Mostly members absent themselves from the cooperative affaires after nominating their leaders taking them as the only responsible individuals in matters of the cooperative. However, without active involvement of members, a committee by itself cannot bring any significant contribution on the cooperative development (Addisu, 2011). The activities that include member participation in a cooperative society include attending meetings; serving on committees; involving in recruiting others; and patronage (Osterberg & Nilsson, 2009). The United States Ministry of Agriculture has emphasized the importance of members' participation and its effect on the success of the agricultural co-operative companies (USDA, 2002).

Furthermore, the member participation in cooperative governance and influencing the decision have multi dimension effect in increasing sense of ownership which will be the foundation for success of cooperative in a way that they can invest more capital on their cooperative business create loyal members to sell their products to their society only. If some members are not participating in the governance of cooperative and fail to influence the decisions they do not want to contribute any capital to the society and they show little commitment or stop to sell their products to the society this can negatively affect cooperative future success (Ephrem, 2014).

2.4.4. Constraints in agricultural output marketing

Agricultural cooperatives established in developing countries frequently face problems since many of them are established on the basis of political criteria by external agents, as a part of public investment strategies or rural development programs launched by international agencies, rather than by farmers themselves (Ruerd R and Jorge H, 2012)

Bernard et al. (2007) argue that – due to such governmental policies – most cooperative in Ethiopia have a high level of distrust among members, and face major constraints to become effective for improving market commercialization and farmers' welfare. Francesconi (2008) outlined that Ethiopian cooperatives have been created in response to governmental plans and only aim to attract public subsidies rather than to become competitive in the marketplace. Such top-down cooperation is likely to induce limited real solidarity amongst members and tends to decrease their interest in substantive efforts for enhancing production and yields.

Though modern agricultural cooperative in Ethiopia started in the early 1960's and considered as an appropriate tool of rural development, they restrained by different factors not to play their positive role on ground to the rural people. Co-operative development in Ethiopia has always been strongly influenced by the state. Based on changes in regimes and policies, informal and traditional associations have existed for a long time and continue to provide social, cultural and economic services to local communities. The different forms of traditional collective action institutions include Equb (mobilizing credit on rotating basis), Iddir (providing insurance in the event of death and for covering funeral costs) and Debo or labour sharing (Tefera *et.al*, 2016).

Pollet (2009:27) revealed that cooperative colleges are government-owned and cater for school leavers (having finished secondary education), as well as government cooperative department staff. Availability of training for members and staff of primary cooperatives is restricted and is usually provided during a short instructive session by department staff when cooperatives are registered. Cooperatives are mostly not involved in government policy programmes other than programmes related to cooperative development.

Additionally, the cooperative movement in Ethiopia is likely to suffer from the absence of apex bodies, both concerning agrarian cooperatives and the financial sector (i.e., cooperative banks). This limits both the advocacy capacity at the decision-making level and the capacity to exploit economies of scale. Both horizontal and vertical integration of value chains are crucial aspects of cooperative development in Ethiopia. If there is an important investment in extending cooperative outreach (one cooperative per kebele18), investments may also be necessary to satisfy the needs of single cooperatives to reach wider markets and to be able to engage in processing activities (Navarra.*et.al*, 2017).

Khumalo *et. al,* (2014: 2022) found that the major constraints facing cooperatives in Ethiopia as inadequate participation by members, lack of professional management and weak accounting systems; inadequate supply of inputs; leadership and organizational problems and limited entrepreneurship knowledge and skills of executives and employed staff; lack of market information and limited access to markets; limited bargaining power; insufficient number of and poor management of storage facilities; and inadequate banking services and weak savings mobilization.

Although cooperatives are considered as an appropriate tool of rural development, they are facing critical problems, which retain them from their positive role. That means, they were not in a position to improve the products and income of their members. These multifaceted problems make very difficult the overall activities of the cooperatives in general and the input and output marketing in particular. The aforementioned problems place the farmers as usually price takers due to the fact that they have poor marketing skill and limited bargaining power (Dawit, 2005).

Therefore, farmers who have been embarrassed in the umbrella of cooperatives failed to attain what they are expected to attain. This can be reflected through lower prices of outputs, smaller

transaction sizes, lower quality of outputs, lack of marketing information etc. to members of the cooperatives. For example, only 18% of cooperatives that had contracts with the World Food Programme in 2010 were able to fulfill them, while others delivered outputs of insufficient quality and quantity (MoA, 2012).

2.5. Conceptual Framework of the study

Although there are large number of an agricultural cooperatives, their main functions largely remain confined to the distribution of credit, fertilizers and procurement of farm produce for national food stocks. Marketing, agro-processing, warehousing activities are still weak, but they assist members to boost production and incomes by pooling their resources to support collective provisions of services and economic empowerment. The agricultural marketing cooperatives are potential for socio-economic development at both local and national levels as they help in transforming the lives of people. In a given location, people with similar interests, common bond and shared vision form a co-operative organization to achieve such objectives (Parkash,2003)

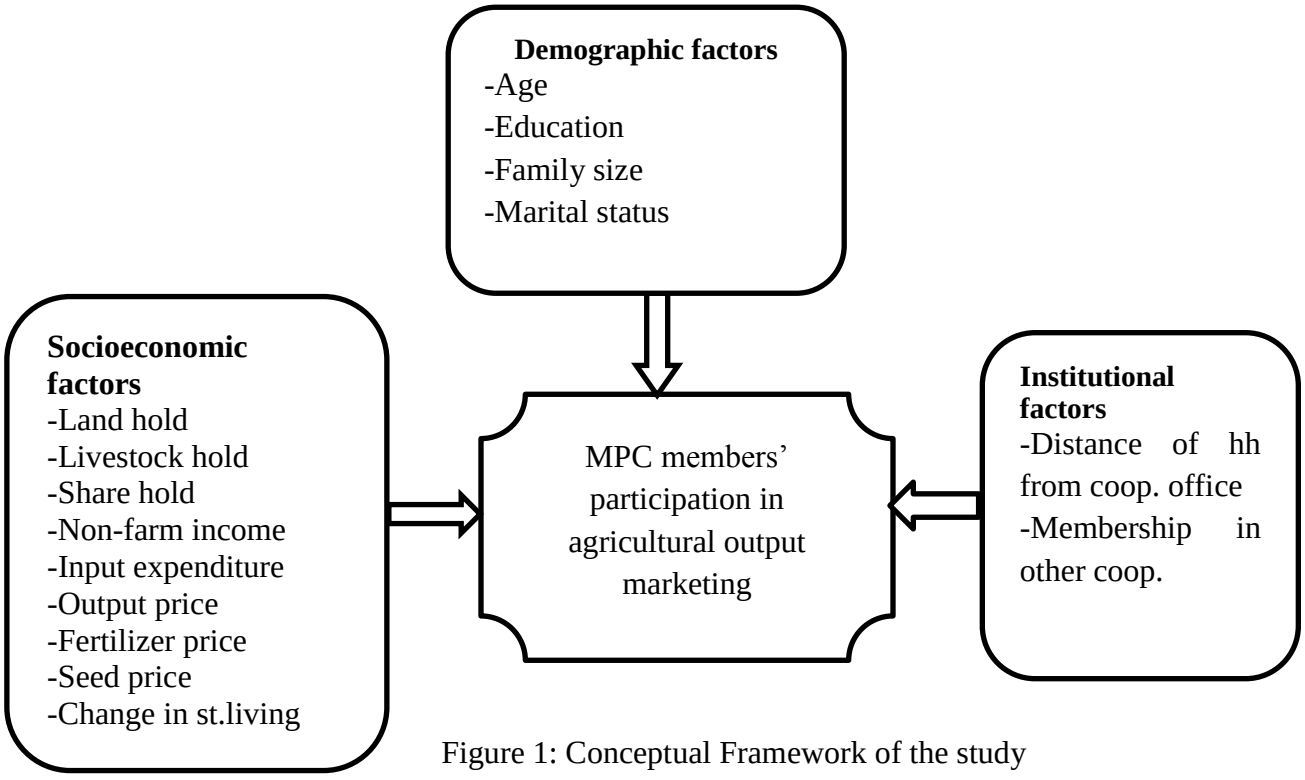

Figure 1: Conceptual Framework of the study
Source: Adopted from (Alema, 2008)

3. RESEARCH METHODOLOGY

3.1. Description of the Study Area

3.1.1. An overview of the Kersa District

Kersa district is one of the districts in the Jimma Zone of the Oromia Region of Southwest Ethiopia. It is located at about 324 km away from the capital city, Addis Ababa in the southwest and 22 km away from the capital city of the zone, Jimma in the east direction. Four districts of the zone border Kersa district in four directions. These districts are Tiro Afeta from the East, Manna from the west, Limmu kossa from north and Dedo from the South geographical directions, respectively. The district has about 32 Keble's, of these 30 of them are rural based administrative (peasant associations) which is the largest share of the administrative of the district and 2 of them are under the town administration. (KARDO 2019),

3.1.2. Socioeconomic Characteristics of the District

The 2007 national census reported a total population for this District of 165,391, of whom 83,579 were men and 81,812 were women; 5,426 or 3.28% of its population were urban dwellers. Agriculture is the most important source of household income in the study area. The area is mostly known for its vegetation coverage, suitability for coffee, crop, livestock and bee production. The major cash crops which grown were: -Maize, Sorghum, Barley, sample i.e. 10%) Wheat, soya bean, field pea, Coffee, Chat (*Cath edulus*), fruits and vegetables. The soil type of the study area is characterized with black to red soils. Industry in the Woreda includes 14 grain mills.

There are three major types of primary Cooperatives were found in the District. They are Multipurpose, saving and credit and other service cooperatives with 34,823 members in which 4,184 of them are women members. The multipurpose agricultural cooperatives in the District were 30 which mean all rural kebeles do have one multipurpose cooperative. Kersa has 14 kilometers of dry-weather and "a few" kilometers of all-weather road, for a minimum average road density of 14.3 kilometers per 1000 square kilometers, which is less than the Zonal average of 70 per 1000 square kilometers. About 55% of the urban and 11.35% of the rural population has access to drinking water.

The farming calendar of the districts is from June to August and like most part of the country rain fed agriculture is practiced. According to the same source, the living styles of the people in the area are characterized by mixed-farming and petty trades. The farmers' rear different livestock such as cattle, sheep, goats horse and horse basically to generate additional income to supplement the income generated from agricultural produce.

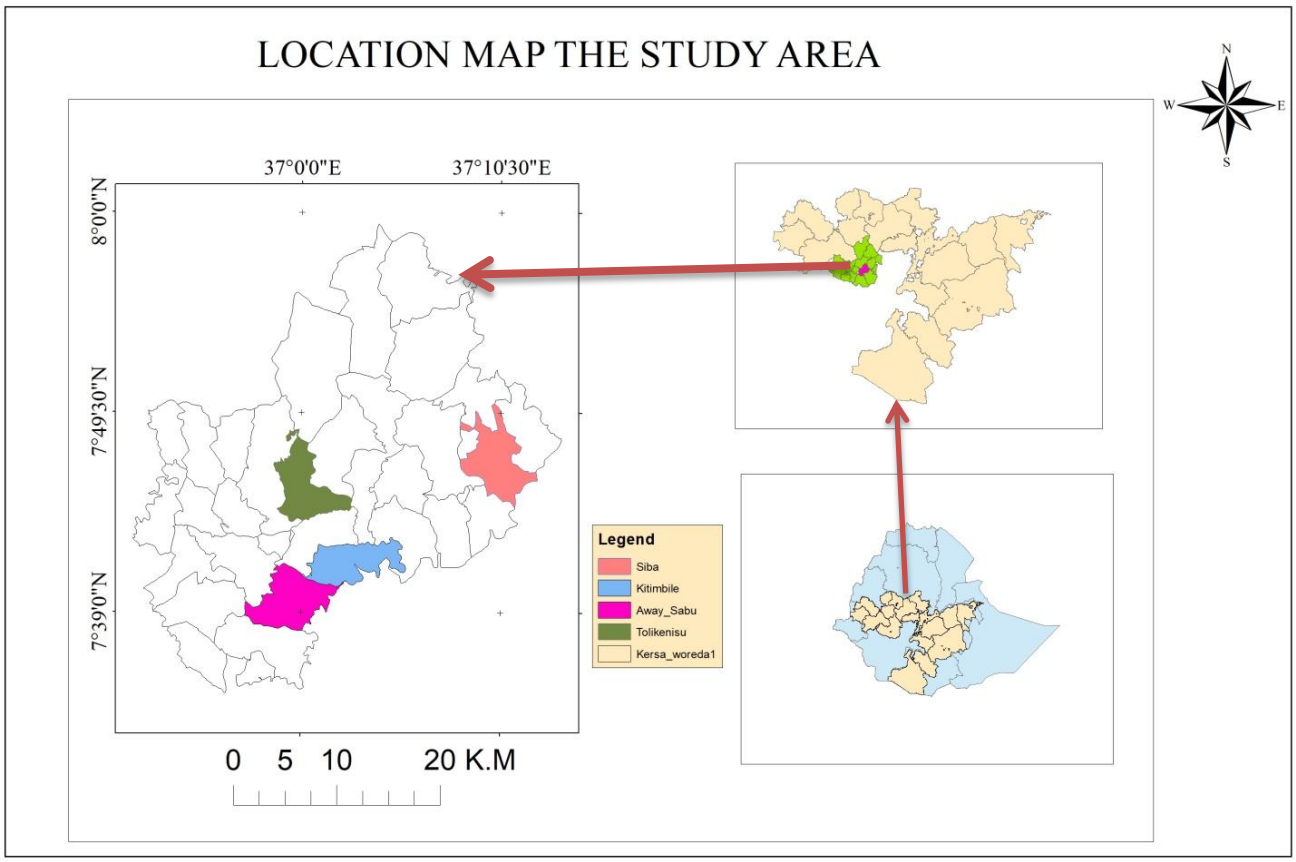

Figure 2: Map of the study area.

3.1.3. Topographic Condition of the District

The district is located in the Gilgel Gibe catchments of southwest Ethiopia (Figure 2). It is characterized as hot humid tropical with bimodal heavy rainfall which is uniform in amount and distribution, ranging from 1200 to 2800 mm per year, with where; short and main seasons occurring from mid-February to May and June to September, respectively. In normal when population greater than 10, 000 years, the rainy season extends from mid-February to early October. The mean annual temperature of the area is less than 19.5°C. The district has three basic agro-climatic conditions; namely, high land (Dega), Middle land (Woyina-Dega) and

Kolla (low land) agro-ecological zone. The districts altitude ranges from 1740 to 2660 meters above sea level; mountains include Sume, Gora, Kero, Folla and Jiren. Perennial rivers include the Gilgil gibe, Kersa, Bulbul, Melekta and the Birbirsa. (KARDO, 2019)

A survey of the land in this District shows that 58.6% is arable or cultivable (37.5% was under annual crops), 17.3% pasture, 6.0% forest, and the remaining 18.9% is considered swampy, degraded or otherwise unusable. The climate of the Gilgel Gibe catchment is characterized as hot humid tropical with bimodal heavy rainfall which is uniform in amount and distribution, ranging from 1200 to 2800 mm per year, with where; short and main seasons occurring from mid-February to May and June to September, respectively. In normal when population greater than 10, 000 years, the rainy season extends from mid-February to early October. The mean annual temperature of the area is less than 19.5°C. (KARDO, 2019)

3.2. Research Design

For a fuller understanding of the scope of quantitative and qualitative research the reader should explore the positivistic (quantitative) and naturalistic (qualitative) paradigms in more detail. The term 'mixed methods research' is broadly accepted to refer to research that integrates both qualitative and quantitative data within a single study (Wisdom *et al.*, 2012, Creswell and Plano Clark, 2011). For this study, mixed research design which combines elements of qualitative and quantitative viewpoints was used. This is due to the fact that it gives the potential to cover each method's weaknesses with strengths from the other method. Cross sectional survey was used to collect data from the sample respondents at specific point in time and based on the results to make generalizations.

3.3. Sampling Procedure and Technique

According to Cooperative promotion office report of 2019 shows there are 30 MPCs found in the District. For this study a two-stage sampling technique was used to the study area. **First,** out of 30 Multipurpose Cooperatives in the District, four of them were selected using simple random sampling since there are equal number multipurpose cooperatives in all kebeles and they are uniformly distributed.

In the 2nd stage, 196 sample respondents of Multi-Purpose Cooperatives members were selected using systematic random sampling from a list all sampled MPC from 5111 members based on simplified formula for proportions suggested by Yamane (1967) as:

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

$$n = \frac{5111}{1 + 5111(0.07^2)}$$

$$n = 196$$

Where n is the sample size, N is the population size (Multipurpose cooperative members) and e is the level of precision where e = 1- precision and assumed as e = 7%. Totally 196 respondents would be selected randomly from four multipurpose cooperatives based on probability proportional to size of cooperatives (Table 1)

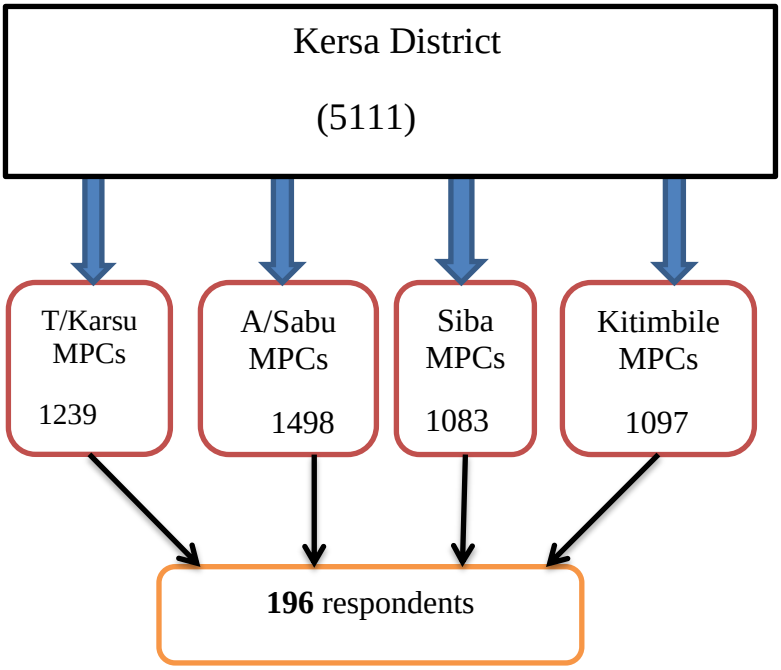

Figure 3: Sampling procedure

Source: KDCPA, 2019

$$= \frac{196}{5111} x100 = 3.83$$

$$= \frac{1239x3.83}{100} = 47.45 \sim 48$$

$$= \frac{1498x3.83}{100} = 57.37 \sim 57$$

$$= \frac{1083\ x\ 3.83}{100} = 41.47 \sim 42$$

$$= \frac{1291\ x\ 3.83}{100} = 49.44 \sim 49$$

Table 2: Sampling Procedure

Name of the district	**Name of MPCOs**	**Total member of MPCs**			**Sampling size**		
		Male	**Female**	**Total**	M	F	**Total**
Kersa	T/karsu	1111	128	1239	43	5	48
Kersa	A/Sabu	1280	218	1498	48	9	57
Kersa	Siba	995	88	1083	37	7	42
Kersa	Kitimbile	1097	194	1291	41	8	49
	Total	**448**		**5111**	**167**	**29**	**196**

Source: KDCPA, 2019

3.4. Methods of Data Collection and Sources of Data

For the purpose of the study, both qualitative and quantitative data were collected from primary and secondary data sources. For qualitative data, 8 Focused Group Discussion (FGD) with Multipurpose Cooperatives committees (4 with committee and 4 with members in each study kebele), 12 Key informant interviews with Woreda cooperative promotion expert, development agent, community leaders and cooperative leaders were conducted. For the quantitative data, structured interviews and questionnaires on relevant variables were used to collect data from 196 sample respondents selected for the study from MPCs members.

As far as secondary data was concerned different sources such as baseline information of the schemes, development plans (annual plans), and annual reports of the kersa Woreda and the

selected Multipurpose cooperatives and promotional offices, journals, published and un published documents were used as a source of information.

3.5. Method of Data Analysis

The study was undertaken using two broad categories of data analysis, namely descriptive statistics and binary logistic regression model were used. To address the first and third objectives (roles and challenges of MPCs in agricultural output marketing) of the study, descriptive statistics were used while the second Objective (factors affecting the participation decision of MPCs in agricultural output marketing) was analyzed by binary logistic regression model. The members house hold survey data were analyzed, presented and interpreted by using appropriate statistical techniques both descriptive and inferential statistics. Qualitative data from FGD and KII were analyzed using content analysis while quantitative data were analyzed using econometric model. To summarize the collected data descriptive statistics such as mean, SD, tables and percent were used. Moreover, Statistical Package for Social Sciences (SPSS) software version 20 was used to process and analyze the collected data.

3.6. Model specification

The dependent variable in this study is participation of cooperative members in the agricultural output marketing by multipurpose cooperatives. The concept of participation is explained and studied by various writers. The dependent variable for this study has binary (dichotomous) nature, that is, the dependent Variable can take the value 1 with a probability of success when the member respondents participate in the agricultural output marketing activity of a given cooperative in 2019 production season independently, or the value 0 when a given farmer did not participate in the agricultural output marketing activity of the cooperative to be analyzed using the binary logit model independently.

3.6.1. Binary logit model

Responses to a question in relation to choice of being cooperative or not, such as whether MPC members wants to be a participant of agricultural output marketing or not could be 'yes' or 'no'. This is a typical case of dichotomous variable. A variety of statistical models can be used to establish a relationship participants and non-participants of agricultural output marketing. Conventionally, linear regression analysis is widely used in most economic and

social investigations. This is because; it has some desirable properties for specific type of enquiry and data and is widely available in computer packages (Green, 1991). Moreover, it is easy to interpret and it is a reasonable procedure even if some of the assumptions underlying it are not met in the data. However, the same source further stated that while estimates derived from linear regression analysis may be robust in the face of errors in some assumptions, other assumptions are critical and their failure will lead to quite unreasonable estimates. To mention some weakness, the linear probability Model (LPM) may generate predicted values outside the 0-1 intervals, which violates the basic tenets of probability. The other problem with LPM is that the variance of the disturbance term is heteroskedastic. Furthermore, the assumption of normality in the disturbance term is no longer tenable.

The inadequacy of the linear probability model suggests that a non-linear specification may be more appropriate and the candidate for this will be an S-shaped curve bounded in the interval of 0 and 1 (Amemiya, 1981). This author suggested the S-shaped curves satisfying the probability model as those represented by the cumulative logistic function (logit) and cumulative normal distribution function (probit).

The choice between these two models revolves around practical concerns such as the availability and flexibility of computer program, experience and other facilities. In fact, it represents a close approximation to the cumulative normal distribution. Hosmer and Lemshew (1989) pointed out that a logistic regression has got advantage over others in the analysis of dichotomous outcome variables. There are two primary reasons for choosing the logistic distribution. These are 1) from a mechanical point of view, it is an extremely flexible and easily used function, and 2) it lends itself to a meaningful interpretation.

Therefore, in this study a binary logistic regression model was used to analyze factors that affect farmer member participation decision of MPC in agricultural output marketing. The dependent variable in this case is dummy or dichotomy in nature which takes the value of one (1) for participants and zero (0) otherwise for nonparticipants. The collected data were coded and entered into SPSS version, 20 software for statistical analysis. Following Homers, and Lemeshew (1989), the logistic distribution function for analyzing the factors affecting MPC member participation decision in agricultural input and output in the study area was defined as follows:

$$p_i = \frac{1}{1 + e^{-z_i}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where p_i is the probability of MPC members to participate in agricultural inputs and output marketing for the i^{th} member and Z_i is a function of explanatory variables (x_i) and expressed as:

$$Z_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \cdots + \beta_m \beta_m \ldots\ldots\ldots\ldots\ldots\ldots.\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Where βo is the intercept and βi are the slope parameters in the model. The slope tells how the log-odds in favor of being to evaluate MPCs` member participation decision in agricultural output marketing. Since the conditional distribution of the outcome variable follows a binomial distribution with a probability given by the conditional mean Pi, interpretation of the coefficient will be understandable if the binary logistic model can be rewritten in terms of the odds and log of the odds, (Gujarati, 1995). The odds to be used can be defined as the ratio of the probability of MPC members participation in agricultural output marketing, (Pi) is probability of participant while that of non-participant is (1-Pi).

But

$$(1 - p_i) = \frac{1}{1 + e^{z(i)}} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (3)$$

Therefore,

$$\left(\frac{p_i}{1 - p_i}\right) = \frac{1 + e^{z(i)}}{1 + e^{-z(i)}} = e^{z(i)} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (4)$$

And

$$\frac{p_i}{1 - p_1} = \frac{1 + e^{z(i)}}{1 + e^{-z(i)}} = e^{\beta_0} + \sum_{i-1}^{m} \beta_i Y_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots..\ldots\ldots\ldots (5)$$

Taking the natural logarithms of the odds ratio of equation (5) will result in what is known as the binary Logit model as indicated below.

$$\ln \left(\frac{p_{(i)}}{1-p_{(i)}}\right) = \ln\left[e^{\beta_\circ} + \sum_{i-1}^{m} \beta_i x_i\right] = z_{(i)} \text{---} (6)$$

If the disturbance term Ui is taken in to account the Logit model becomes:

$$z_i = \beta_\circ + \sum \beta_i x_i + u_i \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \ldots (7)$$

Therefore, the above econometric model was used to analyze factors affecting MPC members' participation in agricultural output marketing in the study area.

3.6.2. Estimation Procedure

Before running the model all the hypothesized explanatory variables were checked for the existence of multi-Collinearity problem. There are two measures that are often suggested to test the existence of multicollinearity. These are: Variance Inflation Factor (VIF) for association among the continuous independent variables and contingency coefficients for dummy explanatory variables. The technique of variance inflation factor (VIF) was employed to detect the problem of multicollinearity among the continuous variables.

According to Gujarati (1995) there are various indicators of multicollinearity and no single diagnostic will give us a complete handle over the Collinearity problem. For this particular study, Variance Inflation Factor (VIF) was for continuous variables (predictor variables). The larger the value of VIF, the more it is troublesome. As a rule of thumb, if the VIF of a variable exceeds 10 (this will happen if Rj2 exceeds 0.95), that variable is said to be highly collinear (Gujarati, 1995).

$$\mathrm{VIF}(X_j) = \frac{1}{1-Rj^2}$$

Where, $\mathbf{Rj^2}$ is the coefficient of determination when the variable Xj is regressed on the other explanatory variables. Similarly, there may be also interaction between variables, which can lead to the problem of multicollinearity. Contingency coefficient is used to check multicollinearity problems between two variables (dummy or dichotomy variables). Contingency coefficient value ranges between 0 and 1, where zero indicates no association exists between two variables and on the other hand if the value is close to one, then it indicates there is high degree of association between the variables. The association is said to

be high association if the value of contingency coefficient exceeds 0.78. The contingency coefficient will be compounded as follows:

$$CC = \sqrt{\frac{\chi^2}{n + \chi^2}}$$

Where, CC is coefficient of contingency, χ 2 is chi-square test and n = total sample size. For dummy variables if the value of contingency coefficient is greater than 0.78, the variable is said to be collinear (Healy, 1984 as cited by Mesfin, 2005).

For the Second Objective of the study to analyze the factors influencing the participation of multipurpose cooperative members in the agricultural output marketing, binary log it model was employed while others were analyzed by descriptive statistics, narration and explanation. Therefore, the determinants of participation in the agricultural output marketing activity was estimated using binary log it regression model.

The Variance Inflation Factor (VIF) was used to test for the existence of multi-collinearity between continuous explanatory variables. VIF shows how the variance of an estimator" R" is inflated by the presence of multi-collinearity (Gujarati, 2004). If R2 is the adjusted square of the multiple correlation coefficients that results when the explanatory variable (Xi) is regressed against all the other explanatory variables, VIF is computed as

$$\text{VIF (Xi)} = (1 - Ri^2)\text{-}1$$

As the adjusted Ri2 approaches 1, the VIF approaches infinity. That is as the extent of Collinearity increases, the variance of the estimator increases, and in the limit it can become infinity. If there is no Collinearity between independent variables, the values of VIF will approach 1. As a Rule of Thumb, values of VIF greater than 10 are often taken as a signal for the existence of multicollinearity problem in the model (Gujarati, 2004).

Contingency coefficients were also calculated to see the degree of association between the dummy variables. They were calculated for each pair of dummy variables using contingency coefficient procedure available in SPSS. Contingency coefficient is a chi-square based measure of association. A value of 0.75 or more indicates a stronger relationship (Healy, 1984).

3.7. Operational variables

After having appropriate analytical tools it is reasonable to identify, define and describe the dependent and independent variables with their appropriate symbols and measurements in a workable way. In the discussion that follows this issue will be addressed.

3.7.1. The dependent variable

The dependent variable in this study is participation of multipurpose cooperative members in the agricultural output marketing. Participation is standard to measure the decision of member participation in agricultural output marketing. Moreover, index of participation of members in cooperative was a complementary dependent variable, which is useful to identify determining factors that affect member participation decision. In order to measure participation decision of members in marketing, the most important indicators of participation were identified. The concept of participation is explained and studied by various writers.

3.7.2. The independent variables of the study

The independent variables that were expected to influence the multipurpose cooperative members' participation decision could be of many types. Those independent variables are explained below:

Age of the household head (AGEHH): Age is a continuous independent variable indicating the age of the household head in years. The households' previous experiences may have either positive or negative, and this may likely influence his or her attitude on participation in the input and output marketing. Besides, his or her capacity to earn additional cash income may increase or decrease with age. Age may have a bearing on investment (Fitsum, 2003). Thus the expected sign is ambiguous.

Education level of household head (EDUCTN): It is a continuous variable and refers to the number of education level of the farmer attended. The higher the education level, the better would be the awareness of the farmer towards the cooperative and acquire information and education about the benefits of the cooperative easily (Kraenzle, 1989; Klien *et. al*, 1997, Daniel, 2006). Hence, those farmers with higher formal education may be in a better position to know the benefits of cooperative and more likely to participate in the input and output

marketing activities of the cooperative societies. So this variable is expected to influence the input and output marketing role of the cooperatives positively.

Family size (FAMSIZE): This variable is a continuous explanatory variable and refers to the total members in the family the household has in number. It is assumed that household with larger family size consume more of what is produced in the house and little will remain to be marketed. Therefore, family size is expected to have negative influence in marketing of the household through the cooperative.

Land holding (LANDHOLD): This variable is a continuous variable and it refers to the total area of farmland that a farmer owns in hectare. The usage of the cooperative as marketing agent requires substantial economic resources of which land is the principal one (Wadsworth, 1991; Klein *et al*., 1997). It is assumed that the larger the total area of the farmland the farmer owns, the higher would be the input usage and output produced. This implies farmers who have larger land holding may patronize the cooperative's input and output marketing in a better way. Therefore, it is expected that this variable might have positive influence on the input and output marketing participation of members in the cooperative.

Total livestock holding (TLSH): This variable is a continuous variable and refers to the total number of livestock the household owns in terms of TLU. It is assumed that households with larger TLU have better economic strength and financial position to purchase sufficient amount of agricultural inputs (Techane, 2002; Teferi, 2003, Daniel, 2006) that boost his production and produce more amount of output to sell to their cooperative. Therefore, this variable has assumed to have positive association with the input and output marketing by cooperatives.

Shareholding (SHAREHOLD): Shareholding is operationally defined as the number of share holdings by the cooperative member based on the by-law of the cooperative. Farmers with more awareness about cooperative may purchases number of shares to capitalize their cooperative society. This implies that farmers with more shareholding may participate more in the cooperative affairs. Therefore, shareholding may have positive relationship with participation of members in the input and output marketing business of the cooperatives.

Nonfarm income (NONFARMI): It is a continuous variable which refers to part of the total amount of income measured in birr that is earned from non-farm activities which are not related to agriculture. Therefore, in this study it is hypothesized that non-farm income affects the members' participation in input and output marketing through cooperatives positively.

Expenditure Household members (EXPHHM): This is a continuous variable measured in birr. As the expenditure of the MPCs members' household head increase the probability of participating in agricultural output marketing will be decreased. Therefore, in this study it is assumed the expenditure in agricultural of MPCs member may influence the participation of members in the input and output marketing negatively.

Distance of the cooperative office from the farmer's house (DISTANCE): It is a continuous variable measured in k.ms. It refers to the distance of the cooperative from the farmer's house. The proximity of the cooperative from the farmer's house reduces the cost of time and labor that the farmers spent in searching for a supply of agricultural inputs and sale of farm outputs. The other advantage is that as the farmer is close (near) to the cooperative, he will have more knowledge about the cooperative and its benefits (Bishop and McCone, 1999, Daniel, 2006). Therefore, in this study the distance of the cooperative from the farmer house is expected to influence the role of cooperatives in the input and output marketing negatively

Perception on the price offered by cooperative for agri-output (OUTPUTP): This is a variable taking value 1 if the cooperative price offered for farmers' output is higher or better than the market price in the area and, 0 otherwise. The price effect is one that the cooperative passes on the farmer's economy (Chukwu, 1990). Therefore, if the cooperative charges competitive price for agricultural outputs in the area, the farmers sell through the cooperative (Wilkins and Stafford, 1982; Fulton and Adamowicz, 1993; Misra *et. al,* 1993; Klein *et.al,* 1997, Daniel, 2006). Therefore, cooperative price may influence the marketing of output marketing by cooperatives positively.

Perception on Change in standard of living due to joining to cooperative (CHSTDUCO):

This is a dummy variable measured as 1 if the household head has improved his standard of living due to joining the multipurpose cooperative, other wise 0. Therefore, it is assumed that members with improvement in their standard of living due to joining to cooperative may

participate in a better way. Therefore, this variable can have positive contribution to the participation of members in the agricultural output marketing by cooperatives.

Membership in other cooperatives (MOTHRCOOP): This is a dummy variable measured as 1 if the household head has a membership of another cooperative society, otherwise 0. Therefore, this may be a sign of awareness of the importance of participation in the cooperative business by the household and it may have positive influence in the participation of member patrons in the agricultural output marketing by cooperatives.

Price perception of inorganic fertilizer (FERPRICEP): This is the monetary value of inorganic fertilizer (DAP and UREA) which is supplied by the cooperative to its farmer members. It can be measured as high or Low by assigning the value of 0 and 1 respectively. Low price perception of inorganic fertilizer might be perceived to have positive influence in the participation of members in agricultural output marketing by cooperatives and vice versa.

Price perception of improved seed (SEEDPRICEP): Price perception of improved seeds can be measured as high if cooperative members are purchasing at high price or low by assigning the value of 0 and 1 respectively. Low price of improved seeds might be perceived to have positive influence in the participation of cooperative members in agricultural output marketing by cooperatives and vice versa.

Table 3 : Summary and types of Hypothesized variables

Variables	**Definitions**	**Type of Variables**	**Expected sign**
AGEHH	Age of HH members'	Continuous	+/-
EDUCTN	Education level of HH	Continuous	-
FAMSIZE	Family size of HH	Continuous	+
LANDHOLD	Land owned by HH	Continuous	+
TLSH	Total livestock hold	Continuous	+
SHAREHOLD	Share holding	Continuous	+
NONFARMI	Non-farm income of HH	Continuous	-
EXPHHM	Expenditure of HH members	Continuous	-
DISTANCE	Distance of HH from MPC office	Continuous	+
OUTPUTP	Perception on output price	Dummy	+
CHSTDUCO	Perception on change in standard of living due to joining MPC	Dummy	+
MOTHRCOOP	Membership in other MPC	Dummy	+
FERPRICE	Fertilizer price	Continuous	+/-
SEEDPRICE	Seed price	Continuous	+/-

4. RESULTS AND DISCUSSION

This chapter presents the findings of the study. Tables, percentages, graphs and charts were used to present the volume and value of agricultural inputs and outputs marketed by multipurpose cooperatives in District. The descriptive analysis made use of tools such as mean, standard deviation and percentage. T-test and $\chi 2$- test were also employed. Moreover, to test the multicollinearity and degree of association between the continuous and discrete variables, variance inflation factor and contingency coefficient was also calculated. Econometric analysis was employed to identify the most important factors that influence the participation of member in the agricultural output marketing activity made by the primary cooperative societies.

4.1. Demographic Characteristics of the Sampled Respondents.

The total sample household members were 196 out of these sample households' distribution by sex constitutes 85.2% males headed and the rest (14.8%) respondents are female headed. Out of the total interviewed sampled respondents' majorities (95.96%) of them were married, the rest less than one percent respondents were single.

Table 4: Marital status and sex composition of the sample respondent

Marital status	Frequency	Percent	Sex	Frequency	Percent
Single	8	0.041	Male	167	85.20
Married	188	95.96	Female	29	14.80
Total	196	100		196	100

Source: Own survey (2019)

4.2. The Role of MPCs in agricultural output marketing activities

Output/Product/ Marketing

The type of output being marketed by the multipurpose co-operatives generally varies from grains, vegetables, and milk to mineral products. Output markets were serious problems in the study area. These limitations were mainly caused due to problem of qualified and committed leadership, limited financial capital and lack of well infrastructural facilities.

Grain marketing activity

In the View of FGD, Multipurpose Cooperatives in the study area undertake different types of agricultural outputs/grain. The major types of grain marketed by MPC in the study area were maize and coffee. They reported that there is an agreement made with Union. Based on an agreement made with their union (Jimma Multipurpose Cooperative Union) and WFP they purchase their agricultural products at competitive market price both from the members and non-members on cash basis at prevailing market price. Then the Union purchase from them paying them commission.

According to the interviewed key informants, the same result was obtained as in the questionnaire survey as they reflect that enough basic initial capital, good infrastructural services (road, transportation, and standardized ware house or storage) ,good interpersonal skills of managers, good understanding the concept of cooperative marketing, good educational level, good business skill and experience of management in cooperative have significant role in the grain marketing of the multipurpose cooperatives. However, in contrast to survey questionnaire results, there is very slight difference on the influence education in relation experience of management to work with cooperatives. They give priority to the experience of managers to work in cooperatives than educational level of managers. This furthermore; an inexperienced manager is a challenge for the success of cooperative marketing as one key informant said:

"If we see Toli Karsu Multipurpose Cooperative the former manager was twelve Grades complete with only one year of experience in cooperative business however during that time the Multipurpose Cooperative was almost approaching to fail, conversely, the current manager had many year of experience in cooperatives and that is why the Cooperative became better than before in agricultural output marketing activity".

On the Other hand, lack of Capital, unskilled working force, low commitment from committee members and distrust among members and management committees are among major constraints affecting the marketing activities of Multipurpose Cooperatives. Besides, the data obtained from household survey shows that, although grain marketing activity is provided by the entire sample MPC, the present grain marketing activity of the sampled multipurpose co-operatives in the district is not as such remarkable. The respondents stated

that the grain marketing activity was inadequate and unreliable. These limitations were mainly caused due to problem of qualified and committed leadership, limited financial capital and lack of well infrastructural facilities like enough and standardized ware house and transportation vehicles.

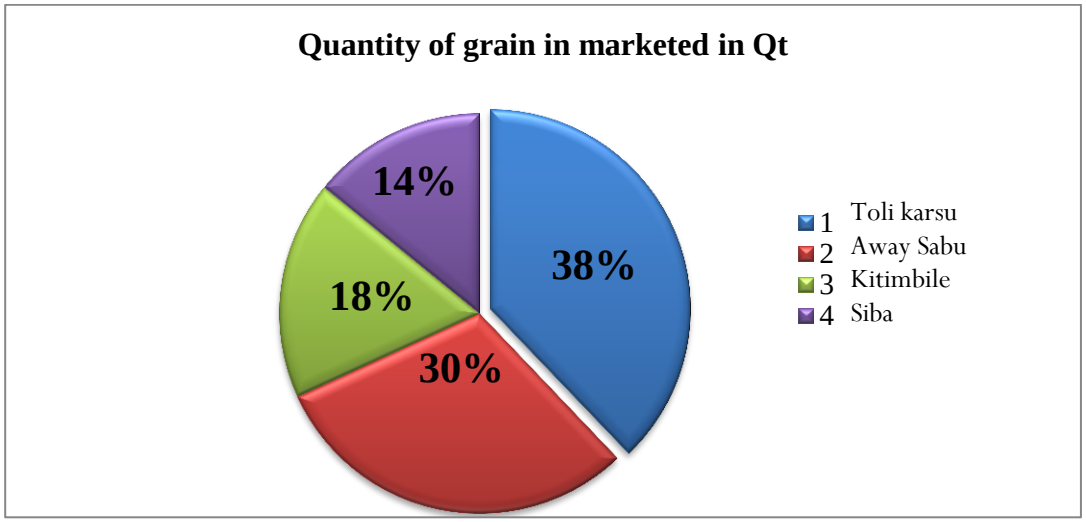

Figure 4: Source: KDCPA, 2019; Total amount of output marketed in 2011

According to the graph Toli karsu, Away sabbu, Kitimbile and Siba are the first, second, third and fourth multipurpose co-operatives undertaking grain marketing activity 38 % , 30 % , 18 % and 14 % in the study area respectively. Furthermore the result from of Key informant interviewee justified that Toli karsu and Away sabu MPCs have more activity performance compared to other MPCs as they have more better warehouse and proximity to the District and road accessibility than other MPCs.

On the other hand multipurpose cooperatives in the district do not make regular purchase and sale of farmers' grain. It is realized from the study that the normal marketing strategy of the co-operatives is to buy the grain in October and November (i.e. immediately after harvest time), and recollect a good portion of it until the lean periods (June, July and August) in expectation of better price, as they do not have adequate market outlet during harvest time. This has resulted in high fluctuation of their grain marketing activity.

4.3. Factors affecting the Participation of MPCs members in agricultural output Marketing

4.5.1. Results of Descriptive statistics

The descriptive statistics result shows that 130 of MPC farmer members were participants of agricultural output marketing while 66 of them were non participants from all 196 sampled respondents. To analyze factors affecting MPC members' participation in agricultural output marketing 14 explanatory variables were selected. Among these all variables 9 of them were continuous while 5 of them were categorical explanatory variables.

Age: The total mean age of MPC members was about 44.99 years. The corresponding figure for the participant and non-participant farmers was about 46.89 and 41.26 years respectively. According to table-8, an independent sample t-test was conducted to compare the mean difference in age between participant and non-participant sample respondents are statistically significant at 1% probability level of significance (t =3.48).

Education: It is a continuous variable and refers to the number of years of formal schooling the member attended. The higher the education level, the better would be the awareness of the member towards the cooperative and acquire information and education about the benefits of the cooperative easily (Klien *et al.,* 1997). The total mean in educational level of the sampled households was 5.22. While the respective mean in education level of participant and non-participant is 6.25 and 3.21 years respectively. According to the independent sample t-test, the mean difference t-test was compared between the participant and non-participant cooperative members with respect to educational level of the household head is found to be statistically significant at 1% probability level(t=10.66).

Family Size: The mean family size of MPCs members measured in adult equivalent (AE) was found to be 4.16. The respective mean of family size for participant and non-participant household is 4.32 and 3.83 respectively. However, the analysis shows that, the mean difference between participants and non-participants of the agricultural output marketing by multipurpose cooperatives with respect to family size is found to be statistically non-significant (t = 1.596) (Zerihun and Deresse,2018).

Land Ownership: The total mean in land ownership of the sampled MPC members was 1.39 hectare. Moreover, the corresponding figures for the participant and non-participant sample respondents' amounts 1.54 and 1.09 hectare respectively. According to the independent sample t- test conducted in this study, the difference in mean in land ownership between the participant and non-participant household heads is found to be significant at 1 percent probability level (t= 4.874). From this we can conclude that the majority of the sample farmers own more than one hectare of land.

Livestock holding: The total mean in livestock holding for the sample households as a whole is 3.92 TLU (Table -8). The mean in livestock holding of participants is relatively lower (3.70) than that of non-participants (4.36). An independent sample t- test was conducted to compare the mean difference in TLU owned between participants and non-participants of the agricultural output marketing by cooperatives. The result shows that there is statistically significant difference between the participant and non-participant households at 5 percent probability level (t=-2.033).

Shareholding: More importantly the mean in shareholding of the whole MPC members is 2.26 and that of participant and nonparticipant amounts 2.32 and 2.09 respectively. An independent sample t-test was analyzed to compare the mean difference of share hold between the participant and non-participant households in the agricultural output marketing by MPC members and the result shows statistically non-significance (t = 1.284). This indicates that there is no significance difference between participants and non-participants in financing their cooperative societies through investing in the form of additional share capital.

Distance of the household from Cooperative office: It has an influence on the of participation decision of farmer members in the agricultural output marketing by multipurpose cooperatives negatively. Own observation survey reveal that in the study area, the distance between farmer's residential house' and cooperative office on the average 3.71 km with the standard deviation of 1.72, and the average distance for the participant and non-participant of the farmer members was 3.20 Km and 4.70 Km respectively. According to the independent sample t- test conducted in this study, the mean difference in distance between the participant and non-participant household heads is found to be significant at 1 percent probability level (t= -6.804) (Table -8).

Table 5: The Mean and SD of Sampled respondents

Explanatory Variables	Participant N=130		Non-participant N=66		Total N=196		t-value	P-value
	Mean	SD	Mean	SD	Mean	SD		
Age of HH	46.89	11.042	41.26	10.022	44.99	11.01	3.48	.001***
Education	6.25	2.61	3.21	1.37	5.22	2.68	10.666	.000***
Family Size	4.32	2.01	3.83	2.06	4.16	2.04	1.596	.112
Land hold	1.54	0.68	1.09	0.56	1.39	.67	4.874	.000***
Total livestock hold	3.70	2.15	4.36	2.17	3.92	2.17	-2.033	.043**
Share hold	2.32	1.16	2.09	1.13	2.26	1.16	1.284	.201
Non-farm income	702	1255	599.32	1153.00	667.40	1219.27	0.555	.578
Expenditure of HH	3054	2396	2791.21	2272.17	2967.45	2352.34	0.725	.469
Distance of HH from MPCs office	3.20	1.66	4.70	1.35	3.71	1.72	-6.804	.000***

Source: Own Survey (2019); * Significant at less than 10% level of significance; ** Significant at less than 5% level of significance; *** Significant at less than 1% level of significance

Non-farm Income

The mean annual non-farm income of participants was 701.92 birr and that of non-participants was 1153 birr. The independent t- test shows that there is no significance difference between participants and non-participants members on the probability of participation in agricultural output marketing. (t=2.85).

House hold Members Expenditure:

The total annual expenditure per household on mean spent Birr. 2,967.45 with standard deviation of 2,352.34 Birr and the mean house hold members' expenditure of the participants and non-participant were 3054.38 Birr and 2,791.21 Birr respectively. According to the independent sample t- test conducted in this study, the difference in mean of House hold expenditure of MPCs farmer members between the participants and non- participant was found statically non-significant at (t=0.725) (Table-8).

Shareholding of MPC members: The total mean in shareholding of the sample respondents was 2.26 and the mean difference between participants and non-participant was 2.32 and 2.09 respectively. An independent sample t test was analyzed to compare the mean difference

between the participant and non-participant households in the agricultural output marketing by MPCs and the result shows statistically non-significant at (t = 1.284) (Table- 8).

4.5.2. The Chi-square Result

To observe the difference between the two categories, Chi-square test was conducted and statistically significant difference was observed between participants and non-participants agricultural output marketing (Table 9). This means there is statistically significant relationship between participants and non-participants of agricultural output marketing of MPCs in the study area.

Accordingly, the Chi-square test result shows that out of 5 categorical explanatory variables output price perception, Change in standard of living due to joining Cooperatives, Membership in cooperatives other than MPC, Fertilizer price perception and seed price perception 4 of them Change in standard of living due to joining Cooperatives, Membership in cooperatives other than MPC, Fertilizer price perception and seed price perception have a significant relationship between participants and non-participants of MPC members' in agricultural output marketing.

Table 6: The Chi-square value of dummy Variables

Explanatory Variables	Categories	Participant	Non-participant	Total	%	P-value	x^2
Output price perc	High	74	31	105	53.57	0.266	0.744
	Low	56	35	91	46.43		
Change in st.lvng	Yes	118	15	133	67.85	0.000***	92.91
	No	112	51	63	32.15		
Membership	Yes	113	29	142	72.44	0.000***	40.52
	No	17	37	54	27.56		
Fert.price perc	High	78	63	141	71.94	0.000***	27.25
	Low	52	3	55	28.06		
Seed price perc.	High	83	60	143	72.96	0.000***	16.25
	Low	47	6	53	27.04		

Source: Own Survey (2019) ***Significant at less than 1% level of significance

Perception on the output price (OUTPUTP): The chi-square result found that Perception on the price of output has no statistical significant difference with the participation of

members in the agricultural output marketing by cooperatives between the two groups (x^2= 7.44).

Change in standard of living due to joining MPCs: Based on the perception of sample respondents, the average changed living standard due to joining of the multipurpose cooperatives was 86.92 and 13.08 percent for the participants and non-participants respectively. The chi-square test showed that, there was statistically significant relationship in the mean of change on standard of living due to joining a cooperative between the participants and non- participant to the agricultural output marketing at less than 1 percent probability level (x^2= 92.91) (Table -9).

Membership in other cooperatives: This was coded as a dummy variable, which took the value of one if the farmer was a member of cooperative and zero otherwise. This variable was expected to affect the MPC member participation in agricultural output marketing positively. This is because; members of MPCs are likely to get benefits and information and thus could participate. The study result showed that the mean experienced respondents on membership in other cooperatives for the participants and non-participant was 72.44 percent and 27.56 percent respectively. The chi-square analysis revealed the existence of statistical significant difference in percentage between being a membership in other cooperatives or not in the probability of participation in agricultural output marketing result shows statistically significance at less than1% probability level (χ 2=40.52) (Table -9).

Fertilizer and Improved Seed Price perception: With regard to the respondents' perception of fertilizer and seed price on participation of agricultural output marketing perceived mean in fertilizer high price was 55.32 and 44.68 for the participants and non-participant respectively. 58.04% and 41.96 % for the participant and non-participant respondents was perceived high price of the improved seed respectively. The chi-square analysis on the perception of the household head on the fertilizer price and seed price with participation of farmer members on agricultural output marketing by multipurpose cooperatives was statistically significant at less than 1 percent (χ 2= 27.25). The perception of the household head on the improved seed price with farmer members in agricultural output marketing by multipurpose cooperatives was statistically significant at (χ 2 = 16.25) (Table -9).

4.5.3. Results of Econometric Model

The agricultural output marketing of multipurpose cooperative was determined by various, demographic, socioeconomic and institutional factors. Numerous literatures indicate lot of explanatory variables, which have significance influence on the participation decision of members. In view of this, efforts were made to include variables found relevant to the model in order to and try to learn the response of the farmers in the study area.

In this section, selected explanatory variables were used to estimate the binary logistic regression model to analyze the factors affecting of households' member participation decision in agricultural output marketing of multipurpose cooperatives to estimate the effects of the hypothesized explanatory variables on the probabilities of being participant or not participant in multipurpose cooperatives.

It is useful to look into the problem of multicollinearity diagnosis among the continuous variables and verify the degree of association among the hypothesized qualitative explanatory variables. It is quite essential to omit the variable with the VIF value exceeds 10 (this will happen if Ri^2 exceeds 0.90 i.e. highly correlated) of the continuous variables. The values of contingency ranges between 0 and 0.75 with zero indicating no association between the variables and values close to 1 indicating high degree of association contingency coefficient computed for dummy variables.

These variables were selected on the basis of theoretical explanations, personal observations, association among the explanatory variables and the results of the survey studies, the 14 potential explanatory variables were entered into Logit analysis to determine the best subset of explanatory variables that are good predictors of the dependent variable. Estimates of the parameters of the variables expected to determine the participation decision are displayed on the Table 8 and 9.

A total of 14 explanatory variables were considered in the econometric model out of which 9 variables were found significantly influence the MPC member participation decision in agricultural output marketing of Multipurpose Cooperatives. Of the total 14 explanatory variables, i.e. 4 discrete and 5 continuous explanatory variables were found to be significant to determine the probability of participation.

Table 7- Sign of explanatory variables used in binary Logit method

Explanatory Variables	*B*	*S.E.*	*Wald*	*Sig.*	*Exp(B)*
Age of house hold	.110	.046	5.703	.017**	1.116
Education level	.705	.207	11.56	.001***	2.025
Family size	.299	.226	1.751	.186	1.348
Land holding	1.844	1.024	3.243	.072*	6.323
Livestock hold	-.880	.274	10.30	.001***	.415
Share hold	-.181	.423	.184	.668	.834
Nonfarm income	.000	.000	.376	.540	1.000
Expenditure of HH	.000	.000	1.012	.314	1.000
Distance of from Off	-.892	.368	5.871	.015**	.410
Output price perc.	1.077	.974	1.223	.269	2.935
Change in St. Living	3.711	1.096	11.47	.001***	40.887
Membership in other	2.199	1.144	3.69	.055*	9.015
Fertilizer price perc.	-4.903	2.343	4.38	.036**	.007
Seed price perc.	-2.571	1.171	4.82	.028**	.076
Constant	-.168	3.002	.003	.955	.846
X^2 (Chi-square) value					197.950
-2 Log likelihood					52.477
Correctly predicted over all sample %					95.9
Correctly predicted participant %					96.2
Correctly predicted non-participant %					95.5

Source: Own Survey (2019); * Significant at less than 10% level of significance, ** Significant at less than 5% level of significance, *** Significant at less than 1% level of significance

The logit model results used to study factors influencing the MPC members' participation in agricultural output marketing are shown in table 10. The various goodness of fit measures state that the model fits that data well. The maximum likelihood estimates of the logistic regression models are significant at less than 1% probability of participation. The models percent correctly predicted 95.9, correctly predicted participant 96.2 and correctly predicted non-participant 95.5. This indicates the existences of useful information in the estimated models. Another measure of goodness of fit is based on a method that classifies the predicted value of the dependent variable, participation of MPC members in agricultural output marketing, as 1 if participant and 0 otherwise. This classification is the result of cross-classifying the outcome variable, y, with a dichotomous variable whose values are derived from the estimated logistic probabilities.

In this approach, estimated probabilities are used to predict group membership. They say that, if the model predicts group membership accurately according to some criteria, then this is thought to provide evidence that the model fits. The model explained about 95.9% of the total variation in the sample for participation of agricultural output marketing. Correctly predicted figures for participants were about 96.2%; while correctly predicted sample size for non-participants were 95.5%. Among the 14 variables used in the model, 9 variables were significant with respect to participation of agricultural output marketing. The effect of the significant explanatory variables on participation in study area is discussed below:

Age of HH head: Keeping other variables constant, age was positively and significantly influencing the probability of MPC members' participation in agricultural output marketing at 5 Percent. This implies that as the age of MPC members' increases by one year the probability of their participation in agricultural output marketing increases and this is possible because as cooperative member gets more and more experience in their agricultural output marketing, business skill, accumulate wealth and use better planning than the younger ones, the behavior farmers averting risk increases with increasing in age and experiences of the household head. Hence, they may prefer to participate in the agricultural output marketing. This finding was in line with (Jamal, 2008) while in contrast with finding, (Alema, 2008 and Muthyalu, 2013).

Educational level of members (EDULM): As hypothesized, education level was positively and significantly associated with participation in input and output marketing at less than 1% probability level. The education level of members is significant at 1% (p= 0.001) level. This implies as the years of formal education cooperative members attended increases, it influences their participations in agricultural output marketing positively. Educated cooperative member can have more access, knowhow and understand the benefits of making transactions with the cooperatives. The odds ratio for the variable implies that other variables constant, increase in education level of MPCs member by a year leads to increase the probability of agricultural output marketing MPC member participation by a factor of 2.025. This implies more educated farmers were tending to participate more as result of awareness they have in making

transaction with cooperatives. The result is inconformity with (Astewel, 2010 and Addisu, 2011).

Land Hold of HH: It was found that land hold had positively and significantly influenced the probability of participation of agricultural output marketing at less than 10% significant level. This result implies that farmers with large handhold are more likely to participate in agricultural output marketing than those farmer members who have small land size. The odds ratio of 6.323 for land hold indicates that, other things being constant, the odds ratio in favor of participation in agricultural output marketing increases by a factor of 6.323 as the land hold increases by one hectare. This result shows that households with larger land size produce more and likely participate in agricultural output marketing. This finding agrees with findings of (Daniel,2006).

Total Livestock holding: According to Pallant, (2013) to interpret for odds ratio less than 1, we can to divide 1 by the result of that odds ratio. Depending on this procedure the result of odds for Total livestock hold become less than 1, which is 0.415. Then we need to invert it (1/0.415=2.4). This suggests that increase in number of total livestock hold by one TLU, decreases the MPC member participation by factor of 2.4.

Distance of the cooperative office from the HH house: It is the distance from multipurpose cooperatives to the member household residence that has influence on the probability of participation of farmer members in the agricultural output marketing. The odds ratio indicated that this variable is negatively and significantly related to member participation in input and output marketing at less than 5 % probability level. It implies that increase in the distance of the cooperative member house from their office by 1 km, decreases their likely hood participation by a factor of 2.44 and this study result coincides with the finding of (Muthyalu, 2013, Jemal,2008)

This result may be due to the fact that members, who live relatively nearer to MPCs office, have more chance to participate in marketing.

This could be due to the fact that it is more convenient to extension services and cooperative promoters in giving training and support than distant households. Furthermore, the cooperative promoting agents focus in helping in creation of awareness may be concentrated

on the nearest members to extensions office because currently one cooperative promoter has responsibility of three villages.

Change on standard of living due to joining to cooperative (CHSTDUCO): This is a dummy explanatory variable coded as 1 if the standard of living due to joining a cooperative (became a cooperative membership) of MPCs member has changed or otherwise 0. Change on standard of living due to joining MPCs is Positive and significant at less than one percent participation level. The odds ratio reveals that change in the standard of living of MPC member increases the probability of agricultural output marketing by 40.887. This study finding was similar to the findings of (Alema, 2008).

Membership in other cooperatives (MOTHCOP): Membership in other cooperatives i.e. other than the multipurpose cooperatives has positive and significance influence at less than 10 % the probability of participation in the agricultural output marketing by MPC members. The odds ratio of 9.015 for Membership in other cooperatives indicates that, other things being constant, the odds ratio in favor of participation in agricultural output marketing increases by a factor of 9.015 as the membership of farmer members in other cooperative become increases by one cooperative. This This implies that cooperative members who have a membership in other cooperatives before has better understanding in participating in the cooperative affairs including in patronizing the cooperative business such as in agricultural output marketing business and this result was in line with findings of (Muthyalu ,2013 and Alema,2008).

Perception of the HH on fertilizer price (FERPRICE): The fertilizer (DAP and UREA) which is supplied by the MPCs to its farmer members. Low price of agricultural fertilizer might be perceived to have positive influence in the level of participation of the members in agricultural output marketing by cooperatives and vice versa. Fertilizer price perception influenced the participation of MPC members in the agricultural output marketing negatively and significantly at 5 percent probability level. This implies as the price of fertilizer increases, the participation of the household head in purchasing fertilizer from the cooperative decreases by 49.03 probability level (Muthyalu,2013).

Perception of the HH on improved seeds price (SEEDPRIC): The price of improved seed has influenced the dependent variable participation of cooperative members in the input and output marketing by cooperatives negatively and significantly at 1 percent probability. This implies farmer members participate more actively in the purchase of improved seeds as compared to other types of inputs regardless the price or as the price of improved seed increases the probability of MPC member farmer participation decreases by. 25.71 Percent.

In general, the participation of farmer members in the agricultural output marketing by multipurpose cooperatives was significantly influenced by age, education, land hold, Total livestock hold, distance of the cooperative office from the household house, change in standard of living due to joining cooperative, membership in other cooperatives, price of inorganic fertilizer and price of improved seed. However, out of the 9 significant explanatory variables two of them (land hold and Membership in other cooperative than MPC) were influenced the participation of cooperative members in the agricultural output marketing by cooperatives significantly at 10%, four of them at 5% ,3 of them at 1% probability level respectively.

4.6. Challenges of MPCs in agricultural output marketing

There are a number of problems, which impede MPC from playing their agricultural output marketing role.

Based on focus group discussion held with different committee members of the four cooperatives indicate that the major internal factors that hindered agricultural output marketing role of MPC were:- lack of capital, unskilled working force, lack of commitment from committee members, lack of trust, low infrastructural facilities (transport and storage or ware house),unwillingness to serve committee, fear of marketing risk, poor members participation, frequent committee changes due to mischief and dependency on the union. Besides, involvement of different stakeholders in the decision making of different Woreda political leaders, agricultural and cooperative office leaders, and lack of business skill created major interference on the cooperative overall activities. The other point that was raised by the committee members during decision was risk. Risk and business are two inspirable things which cannot be avoided but require proper planning and responsive marketing decisions to be competitive in the business and minimize the risk. Hence, cooperative members in this

regard lack the knowledge, commitment, and flexible decision making power and business skill which tied-up the cooperatives role expected to be played by in the market.

Inadequate capital/Lack of Capital

Adequate capital is one of the fundamental requisites for the sound cooperatives business operation. From the stand point of ownership, there are two kinds of capital equity and debt capital. Equity capital is provided by the members'; owners of the business. In the balance sheet it is referred to as the net worth. It is the equity that the owners have in the business which left when the total liabilities are subtracted from the total assets. Ideally the members of cooperatives should provide the capital to finances its operations. Since the cooperative exists to deliver benefits to its members, each member should contribute to capital in direct proportion to usage of services the cooperative provides. However, according to some of Focused Group Discursion to identify lack of capital they told that their multipurpose cooperatives in the study area have no adequate capital to undertake agricultural output marketing and still now dependent on their union. In the view of one of the key informant interview this could be due to lack of members trust and transparency. Moreover, he said that from their establishment our cooperative has not paid back share.

Lack of professional skilled manpower: In the study area, the societies are managed by committees having no cooperative background. Whereas, in principle, cooperatives have unique features for which professionals having cooperative background are needed to handle technical aspects of the society. Failure to report timely and reluctant to conduct general body meeting is another worst scenario emanated from lack of qualified leader

Lack of trust

Trust is the member's confidence or faith towards the cooperatives, management committee, and employees. It was assumed as if members have confidence/ faith towards the above; they will participate in business practices of the cooperatives. The survey result indicates that the majority of the respondents have no trust towards the board of directors and the employees. There were members who have no trust towards the management body, and employees. They expect the exaggerated benefit from their products. Members see their cooperatives as profit making organizations. There were also management bodies that have no trust towards the members in terms of product provision and loan repayment.

Table 8: Challenges of MPCs in agricultural output marketing

No-	List of Constrains	Frequency	%	Rank
1	Lack of Capital	65	33.16	1st
2	Unskilled working force	42	21.43	3nd
3	Low commitment from committee members	47	23.98	2rd
4	Lack of trust	14	7.14	4th
5	Fear of marketing risk	7	3.57	6th
6	low infrastructure(transport and storage)	4	2.04	8th
7	Un willingness to serve as committee	5	2.55	7th
8	Poor members participation	12	6.13	5th
	Total	196	100	

Source: Own Survey (2019)

5. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Cooperative is expected to play crucial role in the rural part of the country to speed up agricultural growth and improve the agricultural marketing system of the country. Of the different types of cooperatives operating in the rural part of the country, MPCs have a significant role in agricultural output marketing. They are organized to render multifaceted service in the rural area to its members and nearby rural community in cost effective manner than investor owned firms. Moreover, they improve farmers' access to market and negotiation power, insure timely supply of farm inputs, marketing of farmers' output, spread risk, create competitive marketing system and attain economies of scale which is impossible at individual farmer level. This study attempted to analyze determinants of MPCs in agricultural output marketing. The descriptive statistics and econometric model were also used for analyzing the data. T-test was used to compare the mean values of the continuous explanatory variables and examine the existence of statistically significant differences between participants and non-participants of MPCs in agricultural output marketing.

The T-test showed significant difference in the age, educational level of members, total live stocks hold, land hold and distance of HH members from MPCs office. Discrete variables were also compared using Chi-square test to see if there is statistically significant difference between the two groups. The Chi-square test also revealed that the discrete variables: Change in standard of living due to joining cooperative, membership in other cooperative Other than MPCs, fertilizer price perception and seed price perception were found to influence farmer member's participation decision in agricultural output marketing activity at the different levels of significance.

The result of the study shows that, the agricultural input marketing activity by MPC is very encouraging. The study found that the role of MPFCs in agricultural inputs was relatively better as compared to marketing of output. As the survey shows, multipurpose cooperatives served as a source of farm inputs for about 98.97%, farmer members in the study area. Moreover, they are supplying agricultural inputs such as fertilizers and improved seeds at proximate centers and sufficient quantity while the grain marketing activity by MPC is highly unstable and variable.

The result of Econometric Model shows that age, educational level of members, total livestock hold, distance, change in standard of living due to joining cooperative, membership in other cooperative than MPCs, fertilizer price and seed price perception are found to influence MPCs members' decision in input and output marketing activity at the different levels of significance. However, family size, share hold, on-farm income, expenditure in inputs, and output price perception were not affecting their participation.

The multi-purpose cooperatives faced a number of problems in the agricultural output marketing of the study was in two major groups internal and external Challenges. Internal challenges were those emanated from the cooperatives (primary up to federation level) members, managers, managements and Board members while external challenges belong to government structures, which was established to support cooperative sector. The external challenges were from those concerned body out of cooperatives like governmental and other organizations that have been providing technical and financial support for multipurpose cooperatives.

Generally, it can be concluded that MPCs in the study area are playing insignificant role in marketing farmers output and protecting farmers from low price payment, in providing multifaceted service, in enhancing the farmer's negotiation power, while playing significant role in availing farm inputs at the right time, saving the effort and time incurred to reach the district market and in acting as alternative market outlet in the input marketing.

5.2. Recommendations

On the basis of the findings and conclusion reached in this study as well as based on significant variables identified, to enhance the participation of MPCs members' agricultural output marketing and in improving their overall activity in general; the following recommendations are forwarded to MPCs themselves, members, concerned government stakeholders, non-governmental organizations and other stakeholders who strive to improve the role of MPCs in the rural part of the country. Among the variables used in the model in this study: - age of HH, education level, land hold, total livestock hold, distance, change in standard of living perception, membership in other cooperative, fertilizer price, and seed price perception market were the most determinant factors influencing members in to participate in agricultural output marketing by multipurpose cooperatives in this particular study. The study revealed that distance of MPC members from their office has negative and Significant influence on probability of participation in agricultural output marketing. MPC members who are nearer to their office tend to more participate in marketing activity of agricultural output marketing than those who are far from their office. Therefore, the government has to facilitate road accessibility and District Cooperative promotion Agency has to give attention to address and support those who have no proximity to their office.

In line with this, the following suggestions and recommendation have been forwarded. The study revealed that distance of MPC members from their office, perception on fertilizer price and seed price perception has negative and Significant influence on probability of participation in agricultural output marketing. MPC members who are nearer to their office tend to more participate in marketing activity of agricultural output marketing than those who are far from their office. Therefore, the government has to facilitate road accessibility and District Cooperative promotion Agency has to give attention to address and support those who have no proximity to their office.

Among internal challenges identified lack of capital, low commitment from members and committee and unskilled working force were the major challenges of agricultural output marketing. Therefore, cooperatives promotion office of the district needs to train the leaders and all committee members of the cooperatives to enhance their business and leadership skill, to improve cooperative marketing role in the area so as to save the time, cost and effort of

farmers which they incur in through travelling to reach the district market and improve the surplus of the cooperatives in better manner.

Besides, the union should search market for its affiliated member cooperatives and in integrating with other business enterprises to play their expected role in the area in this regard. Furthermore, cooperatives must strengthen their farm input delivery to enhance the farmers' levels of production and productivity. As well as, extending various services, offering fertilizer credit services and developing awareness about cooperative benefits to mobilize the rural people through continuous education are among the priority intervention areas that need to be considered by the cooperatives and district cooperative promotion office and in collaboration with other stakeholders for betterment of cooperatives role in the market. This can be attained by providing short or long-term training to the members of the cooperatives.

Enhance the awareness and commitment of members and leaders through continues and relevant training, advocacy, works using different mass medias (such as Radio, Televisions, Newspapers, Magazines etc), and using various experience sharing opportunities such as organizing exposure visits to best performing co-operatives and/or countries, organizing national and international conferences and exhibitions on cooperative issues/performances among others ,

Facilitate access to loan services from commercial banks and other sources so that they could fulfill the requisite materials and technologies for their operation, provide timely technical supports like audit and inspection, professional advices; and address the problems of poor governance. Promote the competitiveness of their services, and create access to broader domestic and international markets, However, the service provided by MPCs had neither consistency nor based on members' demand except input supply services. Until now no effort had been made with regard to promotional support from the district promotional departments to overcome the problem they have in procurement. In general, their contribution to market members' produce was very poor. Therefore, the District cooperative promotion agency Office, governmental organizations and NGOs effort are required to improve their participation in agricultural output marketing.

5.3. Implication for future research work

This study attempted to investigate the Determinants of MPC members' participation in agricultural input and output in the study district. However, this study is limited to one Woreda only which makes difficult to generalize and make inference to the whole region or country. Thus, there is a need to make an in-depth study in this regard by considering other Woreda of the region or the country so as to clearly identify the determinants of MPC member participation in the agricultural output marketing, and to design appropriate strategy to enhance their participation in marketing in agricultural input and output and improve ill functioning of the agricultural marketing system to the benefits of farmers and final users.

The limitations of the study are primarily related to the methodology, the study undertaken was cross-sectional, which various segments of a population are sampled and data are collected at a single moment in time. However, the study observes that those successes factors in cooperatives are better understood if we collect data at different time. Therefore, the future study needs to provide longitudinal data to examine continuity of response and to observe success that occur over time.

Further studies need to be undertaken in broader area, moving from District level up to country level. Studies should not only include agricultural marketing cooperatives, but also involve other cooperatives which are involved in animal husbandry, mining cooperatives, service, consumer and rural electrification cooperatives, handcraft and other cooperatives.

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APPENDIX-I

1. Interview questions with cooperatives leaders and officers.

1. How do you describe the multipurpose cooperative marketing role of kersa district in agricultural input supply and output marketing? What are the types of goods and services do you get from the Multipurpose cooperatives?
2. What are the roles played by multipurpose cooperatives in agricultural output marketing?
3. When did these MPCs established and why they have established?
4. What is/are the various MPCs (Multipurpose cooperative) roles played?
5. Who, do you think, is the actual owner of the cooperative? government/member/others
6. How selling agricultural outputs to multipurpose cooperative and purchasing farm inputs from them can bring support refund to you?
7. How do you see about the role of cooperative in the agricultural input and output activities
8. What are the Challenges that encountered MPCs in agricultural output marketing from highest to least?
9. What are the solutions that you recommend for the challenges?
10. How the Multipurpose cooperative is playing its positive role by acting as alternative market outlet for farmers?

2.Multicollinearity Statistics

In dependent Variables	Tolerance	VIF
Age of the HH	.864	1.157
Education level of HH	.888	1.127
Family size of the HH	.799	1.251
land hold of the HH	.711	1.406
Total Livestock hold	.925	1.081
Share hold	.943	1.061
Non-farm income	.870	1.150
Expenditure in input	.807	1.239
Distance of the HH from MPCs	.887	1.127

Source: Survey data, 2019

Conversion factor used to estimate tropical Livestock unit (TLU)

Livestock	Tropical Livestock Unit (TLU)
Oxen/Cow	1.00
Bull	0.80
Heifer	0.75
Calf	0.20
Donkey	0.70
Donkey (Young)	0.35
Horse/mule	1.10
Camel	1.25
Sheep/Goat	0.13
Sheep/Goat(Young)	0.06
Chicken	0.013

Source: Stock et al., (1991)

Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Age	.110	.046	5.703	1	.017	1.116	1.020	1.222
EDUCTN	.705	.207	11.564	1	.001	2.025	1.348	3.040
FAMSIZE	.299	.226	1.751	1	.186	1.348	.866	2.097
LANDHOLD	1.844	1.024	3.243	1	.072	6.323	.850	47.050
TLSH	-.880	.274	10.304	1	.001	.415	.242	.710
SHAREHOLD	-.181	.423	.184	1	.668	.834	.364	1.910
NONFARMI	.000	.000	.376	1	.540	1.000	.999	1.001
EXINPUT	.000	.000	1.012	1	.314	1.000	.999	1.000
DISTANCE	-.892	.368	5.871	1	.015	.410	.199	.843
OUTPUTP	1.077	.974	1.223	1	.269	2.935	.435	19.788
CHSTDUCO	3.711	1.096	11.466	1	.001	40.887	4.773	350.260
MOTHRCOP	2.199	1.144	3.697	1	.055	9.015	.958	84.807
FERPRICE	-4.903	2.343	4.377	1	.036	.007	.000	.734
SEEDPRIC	-2.571	1.171	4.822	1	.028	.076	.008	.759
Constant	-.168	3.002	.003	1	.955	.846		

a. Variable(s) entered on step 1: Age, EDUCTN, FAMSIZE, LANDHOLD, TLSH, SHAREHOLD, NONFARMI, EXINPUT, DISTANCE, OUTPUTP, CHSTDUCO, MOTHRCOP, FERPRICE, SEEDPRIC.

Appendix-II

Interview schedule developed for the study of "The Role and Challenges of Multipurpose Cooperatives in Agricultural output marketing in Kersa District, Jimma Zone, Oromia Regional state, Ethiopia."

Dear respondents this research will be realized with your kindly cooperation in providing genuine information to data enumerator. And the researcher want to assure you that, all the information collected using this questionnaire is used only for academic purpose to accomplish the Researcher entitled as "The Role and challenges of multipurpose cooperatives in agricultural output marketing in Kersa district, Jimma Zone, Oromia Regional state, Ethiopia". Thank you in advance for your cooperation.

Date of interview_____ Identification number (Code) _____

Name of enumerator _____

Woreda _____ P.A_____

Coop._____

No	Name of family member including HH head	Age	Sex		Maritus status	Education level	Main Occupations
			Male	Female			
1							
2							
3							
4							
5							
6							
7							

2. Do you own land? No/Yes

3. If yes, size of land holding cultivated in 2009/10 cropping year. _____ha

4. What are the major crops grown in your farm in 2010/11crop year?

No	Types of crops	Types of land allocated

6. Do you feel that your holding is sufficient to satisfy for home consumption and for other goods you need? A) Yes B) No

7. If No, which of the following activities did you perform to raise your income? (a) Selling labor (b) weaving (c) Sales of local drink (d) Trading (e) Safety net (f)livestock sales (g) Remittance

8. Do you own livestock? No/Yes

9. If yes, please fill in the following table

No	Types of livestock	Number	Value in birr	Total Livestock owned in TLU
1.				
2.				
3.				

10. What are the agricultural inputs you get from your cooperative society?

a) DAP fertilizer d) Agro-chemicals

c) Seed e) others (specify) _____

b) UREA fertilizer

11. Are you able to get all the agricultural inputs from your cooperative society at the right time and the required quantity? No /Yes

12. If yes, complete the table below

No	Types of inputs	On time	Some times

13. Are the agricultural inputs available incorrect quantities from the cooperative?

A. yes B.no

15. If the answer for Q 9 is No, where did you get your agricultural input?

a. From market B. own c. From relatives c.no supply

14. How do you perceived the price of the agricultural inputs set by the cooperative?

No	Types of agricultural input	High (1)	Low (2)

16. Have you bought any of agricultural input from your MPC?

A. yes B .No

17.How do you perceived the price of agricultural input from your cooperative?

a) High(1) b) low (0) c. medim

18. Did you sold your agricultural product to the cooperative? A) No b) Yes

19. What types of your marketable products did you sold through your cooperative?

20. What is your opinion (perception) on the price offered by cooperative to your agricultural produce as compared to other private traders?

No	Type of product	Low (0)	High (1)

21. Is there any change in your standard of living after joining to cooperative? a) Yes b) no
22.If there is change, what do you think the cause of improvement in your life? _____
23. Does the cooperative serve regularly the marketing service? A) Yes B) no
24. If NO, why? _____
25. Did the cooperative pay you dividend in the last years? A) No B)Yes
26. If No why? _____
27. Did you get training? a) No b) Yes
28. If yes, who supported the training a) Coop. b) NGO c) Gov't d) Others (specify) _____
29. Year of joining the cooperative _____
30. Number of shares held _____
31. How do you become a member of the cooperative?
a) On own accord b) Board of directors c) Neighbors d) Friends influence
32. What was the purpose of joining the cooperative?
a) to get training from my cooperative e) to get dividend payment
b) to get credit service c) to get agricultural inputs supply f) to get market stabilization
d) to get agricultural output marketing service
e) to get dividend payment
f) to get market stabilization
g) Others (specify) _____
33. What is the distance from the multipurpose cooperative office in kms? _____
34. Are you a member of any other cooperative society? A)Yes B)No
35. How do you compare the role of the two cooperative societies in bringing change to your standard of living? _____
36.Do have contact with the cooperative management committee members of your cooperative society? No /Yes
37. If yes, your frequency of contact a) Once a month b) Once every three months c) Once every six months d) Once a year
38. Do you have any contact with the cooperative promoters in your Woreda? A) No B)Yes
39.If yes, frequency of contact a) Once a month (3) b) Once every three months (2) c) Once every six months (1) d) Once a year (0)
40. If no, why? specify_____
41. What is the purpose of contact? a) Market information b) Credit information c) Input price information d) Output price information e) Training f) others (specify) _____ Participation in cooperative management
42. Did you participated in cooperative management/ decision making process? No/Yes
43. What is your position in the cooperative? _____

44. In which area did you exercise your management power? _____

45. If your answer to Q 3 is No, what would be the possible reason?

	Description	%	Rank
1	Lack of awareness about duties and responsibilities		
2	Limitation of thecommittee to notify the annual meeting		
3	Lack of willingness to involve in exercising my right		
4	Lack of equal opportunity in passing decision		
5	Busy with own tasks		
6	Interference of other stakeholders		

46. What are your main sources of income in order of importance?

a) Sale of crops b) Sale of livestock c) Off-farm income d) others (specify) _____

47. Can you tell me the amount of money you earned in 2018/19 crop year?_____

48. What is the main source of livelihood? _____

49. Would you tell me the amount of money you have spent in buying different agricultural inputs in 2010/11 cropping year (in birr)? Please fill in following table

Types of purchased inputs	Quintals	Unit price	Total value in birr
Fertilizer			
Improved seeds			
Farm tools and implements			
Agrochemicals			
Oxen			
Others (specify)			

50. Indicate the type and amount of money spent by your family for the year 2009/10.

S/N	Type of expenditure	Amount (birr)
1	Purchased foods	
2	Crop products	
3	Animal and animal products	
4	Industrial products	
5	Subtotal	
6	Own produce consumed by the family	
7	Crop products	
8	Animal and animal products	
9	Fruits and vegetable products	
10	Subtotal	
11	Other expenses	
12	Industrial goods consumed by household	
13	Medical and educational expenses	
14	Farm inputs	
	Others specify	

51. Rate the constraints in the input and out marketing of cooperatives in their order of importance.

No	List of challenges	%	Rank
1	Lack of Capital		
2	Unskilled working force		
3	Low commitment from committee members		
4	Lack of trust		
5	Fear of marketing risk		
6	Low infrastructure(transport and storage)		
7	Un willingness to serve as committee		
8	Poor members participation		

Part VI Specific Suggestions

52. Please indicate your specific suggestions to improve the participation of MPC members in the agricultural output marketing

_____
_____
_____