

DOI: <https://doi.org/10.20372/JSSHR.V2.i2.01>

ISSN: 2226-7522 (Print) and 2305-3372 (Online)

Journal of Social Science & Humanities Research

J. Soci. Sci. & Hum. Res., July – Dec., 2026, 2(2), 1-11

Journal Homepage: <https://journals.wgu.edu.et>

Original Research

Determinants of Cooperative Member Households Food Security; the Case of Farmers' Cooperative Unions in East, West and Horo Guduru Wollega Zones, Oromia, Ethiopia

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Abstract	Article Information
<i>The objective of this study is to examine the determinants of household food security among the cooperatives members based on the data collected from 302 respondents selected randomly in the study area. A descriptive statistics and Binary logistic regression model were used for the analysis of the data gathered. The result indicates that the status of food security among cooperative members significantly influenced by factors such as age of the household head, education level, lack of credit access, peace and stability, total livestock owned by the household and sex of the household head, membership duration of households in cooperatives and households business participation respectively. The coping strategies identified with the study are; involving members in decision making and planning activities, bargaining member's agricultural products for better marketing. Therefore, to remedy the problem, the study recommends cooperative management, government and other development to give appropriate attention to members' households to increase agricultural productivity, should arrange awareness creation for members, provide agricultural inputs with better agricultural technologies, then members produce more and become food self-sufficient. Moreover the government should maintain peace and political stability for the society as a favorable condition to undertake their agriculture and ensures food security status.</i>	Article History: Received: 09-06-2026 Revised : 15-06-2026 Accepted : 09-09-2026 Keywords: food security, Cooperative members, East, west and Horo guduru wollega zones *Corresponding Author: Mosisa Deresa E-mail: deressa.moti@yahoo. com

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INTRODUCTION

The International Co-operative Alliance (ICA), a non-governmental organization that is the umbrella organization for cooperatives worldwide, defines cooperatives as 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” (ICA, 2004). This definition emphasized that cooperatives are independent of government and not owned by anyone other than the members. It is about peoples' organization to capture different opportunities in the economy where they can

address their economic needs and aspirations. By the same token therefore, cooperatives can be formed in any sector of the economy of a country such as agriculture, minerals, industries and service sectors (Chambo, 2009).

Modern form of cooperatives started in Ethiopia during the ruling era of Emperor Haileselassie I. Emperor Haileselassie I was Ethiopian ruler during 1932-1974. In 1960 the first legislative called “Farm Workers Cooperatives Decree” was declared as Decree No.44/1960 (FCA, 2000).

Food Security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life (USDA, 2008)

Globally, national governments, international development agencies and policy makers in the field of agriculture see co-operatives as an important tool for enhancing food security and as a significant tool for the development of the human well-being (ICA, 2008). As a result cooperatives have become key in development projects and goals that are aimed at alleviating poverty. More specifically, agricultural co-operatives play an important role in food production, distribution and in supporting long-term food security. Co-operatives can create productive employment, raise income and help to reduce poverty. Some agricultural co-operatives improve farm productivity by obtaining inputs at low cost, encouraging sustainable farming techniques and developing members' management and organizational skills (ICA, 2008)

The federal government of Ethiopia has identified cooperatives form of an organization as an instrument of socio economic change particularly to achieve food security. Cooperatives should be established as a means

of; -Improving the economic, social and cultural situations of persons of limited resource and opportunities as well as encouraging their spirit of initiative. Increasing personal and national capital resources by the encouragement of thrift, by eliminating usury and by the second use of credit. The establishment and growth of cooperatives should be regarded as one of the instrument for economic, social and cultural development as well as human development. Within Africa and the international community, there is growing interest in supporting agricultural cooperative and cooperative union development as a platform for enabling vulnerable male and female smallholder farmers to secure sustainable food security (FCA, 2011).

Agricultural co-operatives facilitate the availability of transport which can provide access to the market, provide effective means of communication, and offer training and conduct workshops (Meyer et al., 2009). All these enable the cooperatives to get their goods and services to the market in a secure and timely manner. This means that service delivery and technology transfer done by the cooperatives reduces poverty and increases agricultural production (Li and Liu, 2009).

As to AFSH (2014) finding, Sub-Saharan Africa has the highest prevalence of undernourishment and the prevalence of under nourishment declining from 32.7% to 24.8% over the last two decades. According to the same finding Ethiopia was ranked first in terms of number of people in a state of hunger/under nourishment (32.1 million people), followed by Tanzania (15.7 million); Nigeria (12.1 million); Kenya (11 million) and Uganda (10.7 million), respectively, among sub- Saharan African countries.

In Ethiopia, 85 percent of the population depends on agriculture for their

food security; most are smallholder farmers who lack access to modern inputs and markets (FAO 2011; Rural Poverty Portal). Agricultural cooperatives can help smallholders overcome these constraints, “Cooperatives play a crucial role in generating employment, improving food security, and contributing to the gross domestic product (GDP) in many countries.” (FAO, 2012). To address the problem of food security, Cooperatives are expected to play great role in all over the country in food security.

Nearly 240 million people in sub-Saharan Africa or one person in every four, lack adequate food for a healthy and active life, and record food prices and drought are pushing more people into poverty and hunger. At the same time, the world’s population has now surpassed 7 billion, and news headlines that in the past have asked “Can we feed the world?” are beginning to ask the equally important question, “How many will there be to feed?” (Jason Bremner 2012)

Most small-scale farmers (farmers hereafter) in Ethiopia derive their livelihoods from mixed rain-fed agriculture. Cultivation is small-scale using traditional methods. These farmers use limited farm inputs to improve productivity. Hence, production per household remains low. Population growth is faster than improvements in agricultural production. Poverty and food insecurity is a reality in rural Ethiopia (World Bank, 2015).

While positive step have been made in transforming the state of food security in Ethiopia, the country still faces a lot of challenges especially at community level. The major problem of this study rests on the fact that despite the government interventions in agricultural co-operatives, most of the villagers cannot afford adequate food in their households and the food insecurity phenomenon is still continuing. The government’s assistance to

agricultural co-operatives is missing the point in that it does not cover all the required resources by village farmers. Most of the farmers lack adequate funds, proper marketing places, transport, sufficient skills and infrastructure to carry out their agricultural activities effectively (World Bank, 2015).

Ethiopia is the second-most populous country in Sub-Saharan Africa with a population of 94.1 million), and population growth rate of 2.6% in 2013. One of the world’s oldest civilizations, Ethiopia is also one of the world’s poorest countries. Economic growth brought with it positive trends in reducing poverty, in both urban and rural areas. While 38.7% of Ethiopians lived in extreme poverty in 2004-2005, five years later this was 29.6%, which is a decrease of 9.1 percentage points as measured by the national poverty line, of less than \$0.6 per day. Using the Growth and Transformation Plan (GTP), the government’s goal is to reduce this further reduced to 22.2% by 2014-2015.

Cooperatives are the main means for delivering the vast majority of the improved seed and fertilizer that farmers purchase each year to increase their Agricultural productivity. Ethiopian cooperatives are generally able to buy cereals from farmers at a higher average price than their non-member counterparts, showing that many cooperatives succeed in increasing farmer members’ bargaining power (Volamen, 2009).

FAO (2010), in their report on “The State of Food Insecurity in the World” Addressing food insecurity in protracted crises reported that, the number of undernourished people in the world remains unacceptably high at near one billion mark. FAO, (2000) in its report on “The Elimination of Food insecurity in the Horn of Africa” revealed that, The Horn of Africa is one of the most food-insecure

regions in the world. The region as a whole has more than 40 percent of people who are undernourished.

The majority of the Ethiopian farmers depend on rain-fed agriculture which is not sustainable since they have to wait for the rain season to carry out their farming activities. This situation results in the increase of food shortages in households. As the inadequacy of State support continues to jeopardize even household livelihoods, most of the people cannot afford three meals a day. This violates the right of the people to basic needs and sustainable measures to enhance adequate food. It is also observed that there is a problem in real situation that food security is not realized in the study area (*Respective zones Coop. Promotion offices, 2020*). Therefore, this study examines the factors affecting agricultural Cooperatives in Ensuring Food Security; the Case of Farmers Cooperative Unions in the study area.

The general objective of the study is to assess determinants of cooperative members' households' food security; in the case of West, East and Horo Guduru Wollega Zones, Oromia, Ethiopia and the Specific objective of the study is to investigate factors influencing food security status of cooperatives members in the study area.

CONCEPTUAL FRAMEWORK

There are many ways by which Agricultural cooperatives increase agricultural production status of the members who are engaged in it. To begin either Agricultural cooperative produce substantial amount of production by providing agricultural inputs (fertilizers, high yield varieties seeds, and pesticides) .thus the overall contribution improve the members welfare and reduce poverty. However different literatures suggest that the most dominant factors economic and social factors, demographic

factors and institutional factors. The objective of this study is to explore the major factors that constrain the Agricultural cooperatives in the members' household food security to increase food security status of the members, thereby result in sufficient (enough) food available at household level. Therefore, to examine household food security situation and results in household food shortage, various theoretical frameworks that are related to household food security are employed. A clear understanding of the theory of food security is an essential element to better understand household food security status. Hussein (2006) revealed that, it is impossible to select one theory to use for the whole study as all of these theories are not free of weaknesses. So, various theories were used in a way they complement each other to understand the household food security status.

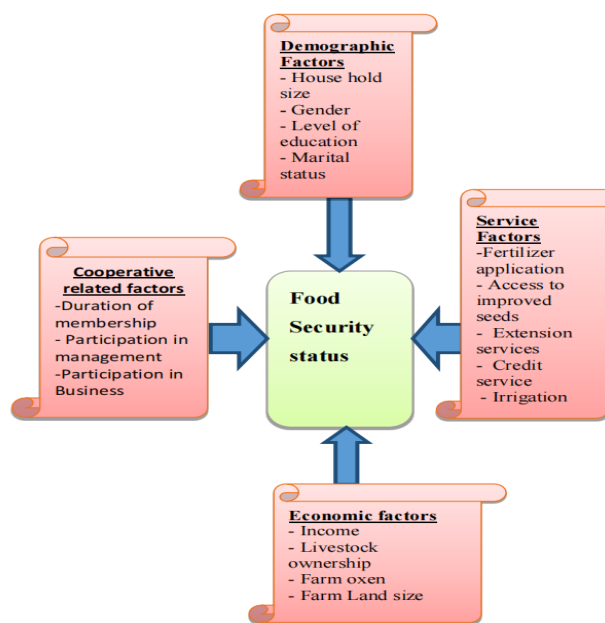


Figure 1: Conceptual Framework of the Study

RESEARCH METHODOLOGY

This study were conducted on assessment of factors affecting Farmer's Cooperative Societies in ensuring food security in case of Horo Guduru Wollega, East wollega and west

wollega zone of Oromia regional state. This study employs a concurrent mixed approach (quantitative and qualitative) due to the nature of the study. The researcher convinced that the design could be appropriate for this study, as it is inclusive, and appropriate for collecting both qualitative and quantitative data for the study purpose. The study was used Cross-Sectional survey research design because it is economical, and allows comparison of the variables at only one point at particular time (Saunders, 2003), and allows exploring more detailed reality about the problem under study through its qualitative data gathered via focus group discussion and key informants

Target population of the study

The target cooperative societies of this study will be 361 Primary Farmers' Cooperative Societies organized into three better performer farmers' cooperative unions located in respective study zones. The three farmer's cooperative union (Chafe Buluk farmer's cooperative union) belongs to Horo Guduru Wollega zone and Gibe Didessa farmer's cooperative union belongs to East Wollega zone and Jorgo Birbir farmer's cooperative union belongs to West wollega. The total individual population of the 361 primary cooperative societies is about 20000 individual members.

Sample procedure

Regarding the sampling technique, Multi stage-sampling techniques was adopted, first stage to select the study area the researcher's purposive sampling techniques is used because the three zones are among the nearby research thematic area of Wollega University.

Second stage, to select sample farmers' cooperative union the researcher's purposively determined one cooperative union from each respective zones depending on their better

performances, accordingly, Jorgo Birbir farmers' cooperative union from west wollega, Gibe Didessa farmers' cooperative union from east wollega and chaffe buluk farmers' cooperative union from Horo Guduru Wollega zone are selected with total primary society of 361 and total individual population of 1230 respectively.

Third stage, to determine the sample primary farmer's cooperative society from 361 total primary cooperative societies, the researchers will take 5% purposively because it is sufficient to represent the total population. Accordingly, the sample primary cooperative society will be determined (361×0.05) which is 18 primary cooperative societies with a total membership of 1230 individuals which are selected proportionally from respective cooperative societies under study.

Stage four, to determine the sample size of the study from the total individual population, (Yamane, 1967) provides a simplified formula to calculate sample sizes. This formula used to calculate the sample sizes of the study. A 95% confidence level and $P = .5$ are assumed and the following formula will be used.

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

Where n is the sample size, N is the population size, and e is the level of precision.

$$\begin{aligned} n &= 1230 / [1 + 1230 \\ &\quad (0.05)^2] \\ n &= 1230 / \\ &\quad [1 + 1230(0.0025)] \\ n &= 1230 / [1 + 3.075] \\ n &= 1230 / 4.075 \\ n &= \underline{\underline{302}} \end{aligned}$$

Stage five, for the selection of 302 individual respondents to collect pertinent data for the study, systematic random sampling techniques was used to give all individual belonging to

sampld cooperative society and avoid biasness. In addition to these, to collect qualitative data three key informant interviews (KI) were used with respective zones

cooperative promotion Agencies and three focus group discussions (FGD) were employed with 3 respective unions management committee.

Table 1

Sampling frame of the study

s.n	Unions	No. societies	Sample societies (5%)	Total popn	Ind. sample
1	Chafe Bulluk farmers' Cooperative Union	62	3	248	61
4	Gibe Didessa Farmers' cooperative union	234	12	790	187
6	Jorgo Birbir Farmers' cooperative union	65	3	192	47
Total		361	18	1230	302

Source; constructed by the researcher, 2026

Types and sources of Data

Both qualitative and quantitative data were collected from primary and secondary data sources. Qualitative data was collected through focus group discussions, and key informant interviews using interview Schedule and checklists. Primary data was gathered from individual members of cooperatives, focal group discussion (FGD's) and key informants (KI).

Method of Data Collection

To collect pertinent data needed for this particular investigation a Semi-structured interview schedule was developed to collect the needed primary data concerning the perception of members on the affecting factors of agricultural Cooperatives in insuring food security. The interview schedule was prepared in English and translated into Afan Oromo the local language for practical field work. The researchers participated in the interview and closely supervise and guided the four enumerators during the entire period of data collection.

Method of Data Analysis

Data for this study was generated through qualitative and quantitative method. Qualitative data generated from key informant interview, focus group discussions and individual respondents was narrated or described qualitatively. The quantitative data was coded and entered into computer Statistical Package for Social Sciences (SPSS version 24.0). The data was analyzed by using statistical tools like frequency, percentages; cross tabulation analysis.

Econometric model

The binary logit model was used to investigate the determinants of food security of farmer's cooperatives members. The USDA Household Food Security Scale (Revised in March 2000) is used to disaggregate the households into food secure and food insecure households. The dependent variable in this case, food security status is a dichotomous variable which took a value of one if a household is food secured, and zero if otherwise.

RESULT AND DISCUSSIONS

Factors Influencing Food Security Status of Cooperatives Members

Perception of the respondents on the role of agricultural cooperatives in increasing food Security Status

Cooperatives are democratic organizations controlled and managed by the members, who actively participate in setting policies and make decisions (ICA, 2004). Perception is a mental and cognitive process that enables us to interpret and understands things. The perception of members on the role played by cooperatives to increase food security status of the members through input supply and output marketing affect the growth and development of their cooperatives. In most cases, members do not trust the cooperatives because of lack of knowledge and due to the bad image they

perceived in the past regimes. Therefore proper orientation on the benefit of cooperatives with the concerned body is very crucial. In view of this the respondents' perception on the role of agricultural cooperatives in increasing food security status of the members is as assessed by raising some relevant questions and discussed as follows.

Agricultural input supply

The main role played by the cooperative is providing agricultural inputs timely at reasonable price to the members. The following table 2 presents the perception level of respondents on agricultural input supply.

Table 2

Members' perception on the provision of agricultural inputs by the cooperative

Response category Perception level	Food security status		Total
	Secured	In secured	
High	81 (48)	20 (15)	101 (33.4)
Moderate	54 (32)	38 (28.6)	92 (30.5)
Low	34 (20)	75 (56.4)	109 (36.1)
Total	169 (100)	133 (100)	302 (100.0)
Chi-square =0.591, df= 2, p=0.744			

Figures in brackets are percentage to column total.

Source: computed from field survey, 2026

The result shows that majority 81 (48%) of respondents has high level of perception on the role of agricultural cooperatives in upholding food security through supply of agricultural inputs, followed by 54 (32%) as moderate perception level among food secured category. Regarding food insecure respondents, majority about 75 (56.4%) of respondents have low level of perception on the role of agricultural cooperatives in enhancing food security status

by providing agricultural inputs and followed by 38 (28.6%) who have moderate level of perception about the role of agricultural cooperatives in supplying agricultural inputs and ensuring food security of farmer households. From the chi-square it may be inferred that there is a significant between perception level of members agricultural input by cooperative and food security status at 10 % significant level.

Provision of new technology

Provision of new technology to the members' is one of the main roles that Agricultural cooperative played to increase the agricultural production and productivity of the members by

which the food security status of members can be improved. Table 3 presents the perception level on the role of Agricultural cooperative in increasing food security status of the members, by providing new technology.

Table 3

Members' perception in the Provision of new technology

Response category Perception level	Food security status		Total
	Secured	Not secured	
High	78(46.2)	35 (26.3)	113(37.4)
Moderate	57 (33.7)	52 (39.1)	109 (36.1)
Low	34 (20.1)	46 (34.6)	80 (26.5)
Total	169 (100)	133 (100)	302 (100.0)
Chi-square=3.084, df=2, p=0.214			

Figures in brackets are percentage to column total

Source: - Computed from field survey data, 2026

The above table 3 result shows that, majority about 78(46.2%) of respondents have high level of perception on the role of agricultural cooperatives in upholding food security through provision of new technology, followed by 57(33.7%) as moderate perception level among food secured category. Regarding the food insecure respondents, majority about 52 (39.1%) of respondents have moderate level perception on the role of agricultural cooperatives in enhancing food security status through provision of new technologies to member house hold, and about 46 (34.6%) of respondents have low level of perception on agricultural cooperatives provision of new technology to enhance food security of members. From this result one can deduce that

as member's perception increases on the role of agricultural cooperatives in providing new technology their food security also improved. From the chi-square it may be inferred that there is a significant between provision of new technology by cooperative and food security status at 5 % significant level.

Timely Payment of Patronage dividend

Patronage dividend is one of the benefits that members got based on the active participation in the cooperative affairs that increase the income level which will lead to an increase in food security status of the members. The following table 4 presents the perception level of respondents on the role of cooperatives in upholding food security status of members through timely payment of patronage dividend.

Table 4*Payment of Patronage dividend timely*

Response category Perception level	Food security status		Total
	Secured	In secured	
High	79(46.7)	32 (24.0)	111 (36.2)
Moderate	60 (35.5)	44 (33.1)	104 (34.0)
Low	30(17.8)	57(42.9)	87 (28.8)
Total	169 (100.0)	133 (100.0)	302 (100.0)
Chi-square =5.223, df = 2, P= 0.73			

Figures in brackets are percentage to column total.**Source: Computed from filed survey, 2026**

The perception level moderate would be the role of cooperatives in upholding food security status of the members. The reason that made majorities of the respondents are perceive low level because of irregular audit service and payment of patronage dividend is not on time. From the chi-square it may be inferred that there is a significant between perception level of members' payment of patronage dividend timely by cooperative and food security status at 10 % significant level.

CONCLUSION

This study examines factors affecting food security of households in the study area, accordingly, the study analyzed Perception of the respondents on the role of agricultural cooperatives in increasing food Security Status, Agricultural input supply problem, and Provision of new technology and Timely Payment of Patronage dividend were main factors affecting food security in the study area.

RECOMMENDATIONS

- To remedy the food insecurity of household members, cooperative society leaders, cooperative unions, cooperative promotion Agencies at different stages, community development partners and the government arrange awareness creation

for member, provide agricultural inputs with better agricultural technologies, then members produce more and become food self-sufficient.

- The cooperative societies should divide patronage dividend for members timely to enhance member's motivation and the promotion agencies also required to provide close supervision to its implementation.
- Lack of peace and political instability was a critical bottleneck affecting food security status of member households, therefore, the federal government and regional government, political parties and other community development partners should create better environment for societies to fully engage in agricultural production.

CRedit authorship contribution statement

Mosisa Deresa: Conceptualization, methodology, Investigation and writing

Belay Kinati: Visulization, validation and supervision, review and editing

Abiyu Jiru: Validation. Supervision, review and editing

Declaration of competing interest

The authors declare that there is no conflict of interest.

Data availability

Data will be made available on request

Acknowledgment

The authors extend their gratitude to data collectors and the communities who willingly provided valuable data. The authors deeply appreciate the communities' generosity in responding to their requests.

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