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Member commitment in agricultural cooperatives: Evidence from Ethiopia

Habtamu Mekonnen Awoke^{1*}

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*Corresponding author: Habtamu Mekonnen Awoke, Economics and Consumer Studies, Wageningen University and Research Centre, Netherlands
E-mail: habtamubau@yahoo.com

Reviewing editor:
Md. Mahmudul Alam, School of Economics, Finance and Banking, Universiti Utara Malaysia, MALAYSIA

Additional information is available at the end of the article

Abstract: Member commitment is essential for the efficiency and survival of member-based economic organizations like agricultural cooperatives. In Ethiopia, cooperatives are considered as important vehicles for linking smallholder farmers to markets and for rural development more generally. However, member commitment in cooperatives is not self-evident. Different scholars confirm that there is a decline in commitment of members to their cooperative. Consequently, it is important to identify what factors drive this decline to enhance member commitment and promote the performance of cooperatives. Thus, this paper seeks to explore the determinants of member commitment. Our empirical analysis is based on a 2014 survey among 240 members of agricultural cooperatives in Ethiopia. This paper makes two contributions to the academic body of knowledge on member commitment in agricultural cooperatives. First, it distinguishes between three elements of commitment: loyalty, identification and participation. By exploring the determinants of each element of commitment, we obtain a much richer picture of what drives members. Second, we make a distinction between multipurpose cooperatives and specialized marketing cooperatives. The study has important implications for policy makers, government and stakeholders of cooperatives for devising appropriate

ABOUT THE AUTHOR

Habtamu Mekonnen Awoke holds a BA degree in Cooperative Business Management and obtained an MBA degree at Mekelle University. He has also got another MSc degree in Management studies at the Wageningen UR University, the Netherlands. He has more than 11 years of work experience in the cooperative sector. He has a hands-on approach combining academic and practical work experience especially in cooperative governance, agribusiness and value chain development, project management and leadership areas. He is currently an agribusiness advisor in Addis Ababa, Ethiopia.

PUBLIC INTEREST STATEMENT

Agricultural cooperatives are facing major organizational challenges due to globalization, free trade and changing members' demand. In this globalized and crisis evident world, organizing cooperatives for smallholder farmers is a very important concern for governments of different countries. Agricultural cooperatives could enhance farmers' bargaining power, provide market information and thereby increase the commercialization of smallholder farmers. Members' commitment to their cooperative has been identified as a vital factor for sustainable and successful functioning of cooperative enterprises. However, different scholars confirm that there is a decline in commitment of members to their cooperative. Consequently, it is important to identify what factors drive this decline to enhance member commitment and promote the performance of cooperatives. This study decomposes member commitment into member loyalty, identity, and participation in decision making. This research scrutinized the determinants of member commitment in agricultural cooperatives.

interventions that could enhance the commitment of members in agricultural cooperatives.

Subjects: Agricultural Development; Corporate Governance; Administration and Management; Management & Organization

Keywords: agricultural cooperative; member commitment; loyalty; identity; participation; Ethiopia

1. Introduction

Over the last decade, agricultural cooperatives in developing countries have received renewed attention from scholars, policy makers, donor organizations and NGOs (Bijman et al., 2016; Markelova et al., 2009; Wanyama et al., 2009). The 2008 World Development Report (World Bank, 2007) considered cooperatives and other producer organizations as one of the innovative institutions that could help provide smallholder farmers with better market access. While cooperatives are not new—and have been promoted in most developing countries ever since the colonial times—they have become popular again in the 21st century. One of the main reasons for this renewed interest is the acknowledgement, particularly among donor organizations and NGOs, that farmers individually will not benefit from new market opportunities because they lack the bargaining power needed to be competitive in a liberalized economy. Informed by the successes of cooperatives in the agricultural economy of developed countries,¹ government agencies and NGOs have designed and implemented new policies and programs to support the establishment and operation of cooperatives in developing countries.

In Ethiopia, cooperatives are important organizations in the agricultural sector. The government has given much emphasis to promoting cooperatives as part of the overall strategy of accelerating the country's agricultural and rural development, more specifically to increase productivity and thereby reduce food insecurity and poverty (Getnet & Anullo, 2012). According to the federal Agricultural Transformation Agency (ATA), cooperatives “will help smallholder farmers increase their yields and incomes through the efficient and high-quality distribution of agricultural inputs, linkage of outputs to markets and provision of value added services.” (ATA, 2013). Thus, cooperatives are important both on the input side, as they provide products and services to the farm, and on the output side, by selling the products of the member-farmers.

Despite their importance, agricultural cooperatives face several constraints that inhibit their capacity to give basic services to their members in a sustainable and accessible way. Limited managerial capacity, low members' participation in decision making, shortage of finance, inadequate market information and basic infrastructure are key challenges experienced by Ethiopian cooperatives (Getnet & Anullo, 2012). Technical capacity problems and the limited size of the cooperatives also hinder their prospect for effective economies of scale operation (Bernard et al., 2013). In addition, there is low trust of members in primary cooperatives as well as in cooperative unions (ATA, 2012).

This paper deals with one of the main challenges for agricultural cooperatives around the world: keeping members committed to the organization (Fulton, 1999). Cooperatives exist in order to provide economic and social benefits to their members. For agricultural cooperatives this means that they provide products and services that farmers cannot get on the same conditions. But cooperatives are (and should be) voluntary membership organizations. This implies that when members are not satisfied with the services provided by the cooperative they can and will leave the organization. However, when members leave, the very existence of the organization is jeopardized.

Member commitment has been defined as “the preference of cooperative members to patronize a cooperative even when the cooperative's price or service is not as good as that provided by

investor-owned firms” (Fulton, 1999, p. 423). Member commitment is important for cooperatives for several reasons (J. R. Fulton & Adamowicz, 1993; Trechter et al., 2002; Fulton and Giannakas, 2007; Österberg & Nilsson, 2009). First, if members are not committed, they may easily leave when conditions become less attractive. A high member turnover is inefficient for any type of organization, but it is particularly detrimental for cooperatives that have made investments in tangible and intangible assets on the basis of expected member patronage. Second, members are the main source of equity capital, either through initial deposit or through retained earnings. Third, cooperative decision-making is democratic and thus requires member participation, for example, in the General Assembly (for all members), and in the governing bodies such as the Board of Directors (for a group of elected members). Fourth, commitment reduces transaction costs. Committed members are more likely to comply with formal and informal norms, for instance, about the quality of products supplied. Fifth, being a member-based organization implies that the legitimacy and sustainability of the organization depends on a continued member-cooperative relationship. In sum, low commitment leads to a high level of member turnover, which does not allow building up a sustainable and efficient economic organization.

While governments, donors and NGOs put effort in setting up and strengthening agricultural cooperatives, the latter will only become viable when farmers are willing to patronize these organizations, not only on the short but also on the long term. This requires commitment from the member-farmers. Understanding the determinants of member commitment are, therefore, not only in the interest of the directors and managers of the cooperatives, but also of the public and private support organizations. The first objective of this article is to identify the main determinants of member commitment in agricultural cooperatives.

In Ethiopia, the federal and regional governments places high importance on cooperatives for obtaining rural transformation from mainly subsistence agriculture towards more commercial agriculture (ATA, 2012), from mainly producing staple products for local markets towards also producing cash crops for distant and export markets. The success of this transformation will to a large extent depend on the willingness of farmers to become and remain committed members of those cooperatives.

One of the targets of Ethiopian policies on supporting cooperatives is to strengthen their members’ agricultural produce marketing activities. While most cooperatives in Ethiopia are multipurpose, who both provide services and supply agricultural inputs and sell farm products, historically the emphasis has been on providing agricultural inputs. For instance, cooperatives have always been the main provider of fertilizers, under a strict state-controlled distribution system. These multipurpose cooperatives, however, need to develop into stronger marketing cooperatives.

Transformation from mainly supplying inputs to also engage in marketing has implications for member commitment. In the inputs supplying cooperatives, commitment is usually low as farmers do not have any influence on the strategies and policies of ‘their’ organization. Membership is important for having access to inputs, but no member investments are needed. In marketing cooperatives, the situation is different, as farmers are more dependent for their income on the performance of the cooperative. Thus, the quality of the leadership (board of directors and management) is more important, also because output markets are generally more volatile. Finally, given the economies of scale in handling and processing farm products, many rural communities have only one marketing cooperative, which makes farmers rather dependent on the performance of this particular cooperative.

Thus, the second objective of our paper is to explore differences in member commitment between multipurpose (supply) cooperatives and pure marketing cooperatives. For the latter we have chosen dairy cooperatives, as they have traditionally specialized in processing and marketing of milk.

This paper is structured as follows. Section 2 presents a review of the literature on member commitment in agricultural cooperatives, particularly discussing the factors that determine member commitment. Section 3 introduces our empirical study on the factors that determine member commitment in agricultural cooperatives in Ethiopia.

2. Determinants of member commitment: a review of the literature

Despite the relative importance of cooperatives for agricultural development throughout the world, few studies have actually elucidated and measured member commitment. Most literature remains conceptual, with only few empirical studies. In this section we review the theoretical and empirical literature on member commitment in agricultural cooperatives. However, first we make a small detour towards the literature on organisational commitment, as this literature on employee commitment to the employer organisation is much more extensive and may provide useful insights for member commitment in cooperatives.

Within the organisational behaviour literature, an extensive body of knowledge exists on commitment of employees to a particular firm or organisation (e.g., Allen and Meyer, 1990; Mathieu and Zajac, 1990; Klein et al., 2009; Solinger et al., 2008). Organisational commitment has been defined as the extent to which an individual identifies and is involved with his or her organization and/or is unwilling to leave it (Greenberg & Baron, 2008). Thus, organisational commitment can be measured as the extent of identification, the extent of involvement and the extent of loyalty (which is the opposite of leaving the organization).

Within organizational behaviour studies, commitment is considered as an attitude, having multiple dimensions, such as affective attachment to the organization, perceived cost of leaving it, and a felt obligation to stay. These three dimensions have been labelled affective commitment, continuance commitment, and normative commitment respectively (Allen and Meyer, 1990). Affective commitment is an emotional attachment to the organization and it is not calculative in nature. Continuance commitment is taking into consideration the calculation of the cost and benefits. It is considering the benefits associated with continued participation and the cost connected with leaving the organization. Normative commitment encompasses the members feeling of obligation to stay with the organization.

Each of the three dimensions of commitment has multiple bases or determinants (Meyer & Herscovitch, 2001). Affective commitment is based on the desire to remain with the organization, which in turn is determined by shared values, personal characteristics and individual experiences with the organization. Calculative commitment is based on needs and opportunity costs, which in turn are determined by the available alternatives and the investments a member has made in building up a relationship with the organization. Normative commitment has its base in social obligation, which is determined by institutionalization and socialization.

This paper focuses on the determinants of member commitment in agricultural cooperatives, and we are particularly interested in the underlying factors that determine the extent of member commitment. Although there is overlap between employee commitment and member commitment, we found determinants that do not fit within the dimensions of organizational commitment. Particularly the specificities of the cooperative organization leads to other factors that influence member commitment. For this reasons, we have developed our own classification of determinants into economic, psychological, personal, organizational, social and institutional factors.

2.1. Economic determinants

Cooperatives are primarily economic organizations; they exist in order to support the economic well-being of their members. Thus, we expect economic factors to be important for commitment. On the basis of our literature review, we distinguish four economic factors: price, dividend, operational performance, and other services. Of course, the participation constraint applies, that is, the economic benefits from membership should outweigh the costs of membership. If the costs are

higher than the benefits, farmers stop transacting with their cooperative, although they may remain membership (Pascucci et al., 2011).

Price is expected to be an important determinant of members' commitment since the income of the farmer directly depends on the price (s)he receives for his/her products (Fulton, 1999; Mensah et al., 2012). Also the price the farmer has to pay for inputs and services is expected to affect commitment. The farmer's assessment of the price is always in comparison to what he would receive when selling to another buyer. For those cooperatives paying a dividend on member investment, the size of the dividend may be a factor determining commitment (J. R. Fulton & Adamowicz, 1993). Members differ in their preference for investment in the cooperative business (Cook, 1995). To be successful in attracting farmers who have preference for investing in value adding activities, cooperatives will offer a rate of return comparable with the other options the farmer has.

Good operational and financial performance leads to member commitment and satisfaction (Österberg & Nilsson, 2009). When members do not see financial health in their cooperative, they may hesitate to sell their produce, which is an indication of low commitment (M. Fulton & Giannakas, 2001). Thus, financial performance of the cooperative influences members' commitment level (Trechter et al., 2002). Cooperatives may provide additional services to members like transportation of farmer products, renting out farming equipment, and providing storage facilities. The less likely these services are available from other providers, the more farmers will be committed to the cooperative.

2.2. Psychological determinants

The main psychological factors that affect commitment in cooperatives are trust and cooperative ideology. Trust has often been found to determine the behavior of members towards their cooperative (e.g., Hansen et al., 2002; James & Sykuta, 2006). Borgen (2001) has argued that when members trust the management of the cooperative, they are more likely to be committed to the objectives of the cooperative. Hansen et al. (2002) found that when members trust the board of directors and the management, they are more likely to be satisfied and committed to the goal of the organization. If members are dissatisfied with the way the cooperative is managed, they are more likely to show disloyal behavior. One can also argue that trust among the members, for instance, trust that other members will refrain from opportunistic behavior, is a determinant of member commitment. However, we did not find any studies on this type of trust in cooperatives. Cooperative ideology lays down that it is good for all farmers to collaborate and become and remain members of a cooperative. Thus, when members "believe" in cooperative ideology, they are more likely to be committed to their cooperative (Fulton, 1999).

2.3. Personal characteristics

The commitment level of members also depends on a number of their personal characteristics. Trechter et al. (2002) found that commitment declines as the level of formal education of a member increases (Trechter et al., 2002). However, Cechin et al. (2013) found that members with higher education are more committed to a customer-oriented strategy of the cooperative. Age may influence commitment. Older members are loyal to their cooperatives because they have sense of pride in the ownership of their cooperative (J. R. Fulton & Adamowicz, 1993). Staatz (1989), however, argues that farmers who are approaching retirement age have lower commitment compared to younger members. Still, Hakelius (1999) found that young farmers see their commitment as a means to obtain individual economic advantages but older farmers consider commitment as a way of showing solidarity with peers.

Members' skills and knowledge has an impact on their participation in the decision-making of the cooperative. Some members may be illiterate and not having the ability to read different plans and reports which are prepared by the management of the cooperative, as a result they may not actively participate during meetings (Penrose-Buckley, 2007).

The farm size of the members could have an important influence on the level of commitment. Gray and Kraenzle (1998) argued that farmers with large farms are more likely to become involved in the cooperative, because they are more likely to have the resources that allows them to spend time in the cooperative. However, recent studies on inclusiveness of cooperatives have found that large farms have more options to sell outside the cooperative and therefore may be less loyal in delivering to the cooperative (e.g., Wollni & Fischer, 2014).

2.4. Organizational determinants

Cooperatives are specific types of organizations, characterized by member participation in the decision-making, by joint ownership of the cooperative's assets, and by traditionally having a strong social embeddedness in local communities. Organizational factors that could affect members commitment are the extent of membership heterogeneity, the extent of member involvement in decision making, communication between members and the cooperative, and the management practice in the cooperative.

Hansmann (1996) has argued that one of the efficiency benefits of cooperatives is the low decisions making cost due to membership homogeneity. If all members have the same interest in what the cooperative does, decision-making can be smooth and quick. On the contrary, when the membership is heterogeneous, different members (or member groups) will try to influence the decisions according to their private interest, which will increase the cost of decision making and lead to so-called influence costs (Iliopoulos & Cook, 1999). When the chances increase that the cooperative takes decisions not in their interest, members may become less committed (M. Fulton & Giannakas, 2001).

Cooperatives are democratic institutions; all members are involved in the decision-making process. Members participate in the annual meetings (or general assembly) in which they elect the members of the board of directors and (dis)approve the financial statements of the cooperative. Some members are even more active, as they participate in the board of directors or in supervisory committees. Borgen (2001) found that members are more committed to implement the decisions when they have actively participated. Österberg and Nilsson (2009) found that member perception of participation in the decision-making of the cooperative was positively related to member commitment.

Formal rules on participation in decision-making can help to strengthen member commitment to that decision-making process (Penrose-Buckley, 2007). Clearly defined members rights and obligations in the decision making process enable members to better participate in the cooperative.

Members' commitment will increase when the members receive appropriate information about the strategies and activities of their cooperative. Commitment may be influenced by the communication tools being used (Verhees et al., 2015). As the cooperative has control over its communication activities it can influence member commitment by the type and extent of information dissemination by the members (Trechter et al., 2002).

2.5. Social determinants

Because of its embeddedness in (local) communities, cooperatives needs to have legitimacy in these communities to perform well. Both members and other stakeholders consider cooperatives not only as economic but also as social organizations. Thus, social factors may influence the commitment of members. First, cooperatives are organizations where farmers meet to discuss market developments, trends in technology and other societal changes relevant for their farm. Thus, cooperatives can be considered as social networks. A good functioning social network enhances the commitment of members of the network (Karantininis, 2007). Another element of the social role of the cooperatives relates to providing employment, social security and other social services for the local community. Members that appreciate these social services are more likely to be committed to the cooperative. This applies particularly to members who are active in the social activities of the local community (Fulton, 1999).

The social and cultural norms among may have an impact on the participation level in the decision making processes. In certain societies women may not participate in decision making activities or take a leadership role in the cooperative. Social norms of the society guide the community members who should speak up during meetings, how women and man behave in the public meetings, influences the participation of women (Agarwal, 2001).

2.6. Institutional determinants

According to the ICA principles, cooperatives are autonomous institutions only controlled and managed by their members (ICA, 1995). This implies, that government should not intervene in the strategies of the cooperative. Government dominance over cooperatives leads members' to view the cooperative as a government institution used to implement state policies, which would lead to low commitment, particularly in participation in decision-making (Braverman et al., 1991).

2.7. Measuring member commitment

For measuring the outcome or behavioral expression of commitment we used the operational definition developed by Bijman and Verhees (2011). They have operationalized commitment as a combination of loyalty, identification, and effort. Loyalty or loyal behavior means that the member continues to patronize the cooperative, even when short term alternatives are more attractive. Patronizing means delivering farm products to the marketing cooperative or purchasing farm inputs from the supply cooperative. Loyalty thus refers to what Dunn (1988) has called the transaction relationship. Identification refers an affective relationship with the cooperative, like a feeling of belonging. Identification can be expressed by talking positively about the cooperative, or by a belief that the cooperative is doing good for its members. Effort means doing something extra for the cooperative, such as a voluntary task, and it includes participation in the decision-making bodies of the cooperative. In this paper, we use participation as a proxy for effort more generally. Participation can be measured relatively straightforward (Agarwal, 2001), by asking members about their actual participation in general assemblies, committees and boards. We have measured loyalty, identification and participation by presenting statements for which the respondent had to indicate their level of agreement, using a five-point Likert scale ranging from strongly disagree to strongly agree. Appendix X presents the statements used for measuring each of the three dimensions of member commitment.

3. Data and methods

3.1. Data sources and collection method

Data were collected through a survey carried out among farmer-members of Ethiopian cooperatives, in January and February 2014. The original English questionnaire was translated into Amharic language. East Gojjam administrative zone was purposively selected because one of the authors is familiar with its culture and language. To select the sample districts (or woredas), a convenience sampling method was used. Four woredas (Michakel, Guzamn, Awabel, and Dejen) were selected, as these are a good representation of the Gojjam zone. To select the respondents, a stratified random sampling technique was used. The base for stratification was the type of activity the cooperative was engaged in, either marketing (of dairy products) or multipurpose activities.

Four enumerators were recruited among graduates of the cooperative colleges, who were familiar with cooperative theory and practice. They had been working as cooperative extension officers, providing technical and managerial assistance to primary cooperatives in different kebeles.² These enumerators were trained for one day about the purpose of the research, the sampling method, the content of the questionnaire, and how to approach respondents. They collected the data under the supervision of one of the authors. From each of the four woredas one dairy and one multipurpose cooperative were randomly selected. From each cooperative, 30 farmer-members were randomly selected from the members' registration list. The respondents were given a short briefing about the purpose of the study before being asked for their willingness

to participate. A total of 240 farmers participated, 120 from dairy cooperatives and 120 from multipurpose cooperatives.

3.2. Data analytical

The qualitative and quantitative data obtained through the semi-structured questionnaire were analyzed using both qualitative and quantitative analysis tools. While the qualitative data were analyzed through interpretation and conceptual generalization, the quantitative data were analyzed using SPSS. Principal component analysis (PCA) was used to reduce data and to identify the main components of each vector of determinants. PCA is a multivariate technique to extract the key information from a set of inter-correlated quantitative dependent variables (Abdi & Williams, 2010). Finally, we used a multiple regression model to identify the effect of each retained component on member commitment.

3.2.1. Model specification

An Ordinary Least Squares (OLS) model was employed to investigate factors that determine commitment of members to their cooperatives. The dependent variable is member commitment, which includes loyalty, identification, and participation in decision making. The independent variables are the constructs identified in the PCA (economic, psychological, social, organizational, and social determinants) as well as a number of other variables, such as government interference, structure and rules, cultural norms, and satisfaction with the performance of their cooperative. Besides, members' commitment could also be affected by different members' characteristics. In this research, a total of nineteen independent variables were used to explain dependent variables.

$$Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon$$

Where:

Y_i = is the dependent variable: member commitment, proxied by three constructs (loyalty, identification, and participation).

X_i = is a vector of factors affecting member commitment: economic, psychological, social, organizational, political, structure and rules, and cultural norms factors, members' satisfaction with the performance of the cooperative. Other variables like type of the cooperative, gender, age, education, investment amount in the cooperative, social status, serving in BoD and control committee in the past, training and education, distance from the cooperative and the main market are also included.

β_i = a vector of parameters to be estimated.

ε = is the error term, which is assumed to have a normal distribution.

To measure the dependent variable, 16 statements were presented to the respondents; four items for loyalty, six for identification, and six for participation. Respondents' level of agreement with the statements was measured with a five-point Likert scale ranging from strongly disagree to strongly agree. The reliability test of Cronbach's alpha showed a value of 0.838 for the 16 items.

Multicollinearity occurs when there is a strong correlation between two or more variables in multiple regression models. Hence, variance inflation factor (VIF) values below 10 and tolerance values not below 0.20 show safety from multicollinearity concern (Field, 2009). Before running the model, multicollinearity was checked and the result shows that there is no multicollinearity between variables.

Principle Component Analyses (PCA) were conducted for the dependent and independent variables and the reliability of each variable was checked. Reliability analysis measures the consistency

of the questionnaire, and a Cronbach's alpha values around 0.8 are good (Field, 2009). Before extracting the component for each variable, the Kaiser–Meyer–Olkin (KMO) test sampling adequacy was done to check whether the sample was adequate for factor analysis. Values of the KMO test greater than 0.5 are acceptable (Field, 2009).

3.2.2. *Dependent variable*

A PCA was done for each of the three measures of member commitment, loyalty, identification and participation (Table 1 and 3). The values of the KMO test for each measure showed that the samples were adequate to carry out the PCA (Table 3, last column). The total variance explained for each of the measure is given in fourth column. The PCA results show that the three measures, loyalty, identification and participation, can be used as dependent variables in a model to investigate their relationship with the independent variables

3.2.3. *Independent variables*

A PCA was done for the economic four items to reduce the dimension of the items. The KMO test shows that the sample was adequate (0.810) to carry out PCA. One component had resulted Eigenvalue greater than one and explained 73.663% of the variance.

The five psychological factor items were also reduced to one component having Eigenvalue greater than one and the component explained 57.331% of the total variance. The KMO test of 0.738 shows the sample was suitable for factor analysis.

A PCA was also performed for the three social factor items and reduced to one component and related to “social responsibility”. The KMO test result 0.523 shows that the sample was suitable for PCA. The component explained 59.4671% of the total variation.

To measure the organizational factors determining members' commitment, there were four items. The KMO test result demonstrates that the sample size was suitable (0.579) to perform PCA. Thus, a PCA was used and reduced these dimensions into one component having greater than one eigenvalue

Finally, a PCA was performed for the political factor three items to reduce the dimension of the items, which resulted in one component having eigenvalue over Kaiser's criterion of one and the component alone explained 75.212% of the variance. The KMO test shows that the sample was adequate (0.695) to carry out PCA. The political component can be reduced to government interference.

The reliability test of Cronbach's alpha was found to be a value of 0.841 for the 21 items which is above 0.8, and shows a good reliability of the questionnaire used.

4. Results

4.1. *Determinants of member commitment*

The multiple regression results presented in Table 4 indicate that five factors were found as the determinants of members' loyalty to their cooperatives. Economic factors, psychological factors, members' satisfaction with the performance of their cooperative, distance from the main market and the type of the cooperative were found to be significant in explaining the loyalty of the members to their cooperatives. The signs for these factors show the direction of the relationship with loyalty, and the beta weights show the magnitude of affecting members' loyalty.

The type of the cooperative was found to be the most important factor for members' loyalty, as it has a coefficient of -0.898 . It was negatively related to the loyalty, which means that the members of the multipurpose cooperative have a lower commitment than members of a dairy cooperative.

Table 1. Description of independent variables used in the model

Name	Description
Economic determinants	Economic determinants like price, dividend, operational and financial performance and providing additional services to members
Psychological determinants	Trust, cooperative ideology, building a positive image about the benefits of cooperative
Social determinants	Contributing to social activities, individual interaction with each other and stimulating the establishment of informal relationships.
Organizational determinants	Rewarding active participation, assuring the voice of members is heard, appreciated and translated into decisions, using a multiple communication approach and education and training for members
Government interference	The government interference in the cooperative's operations and promoting political agenda
Coop rules and regulations	Cooperative's rules, regulations and structures
Cultural norms	Women participation in the leadership of the cooperative
Satisfaction	Members satisfaction on the cooperative performance
Type cooperative	Type of the cooperative (dummy: type of coop = 1 if multipurpose cooperative; 0 otherwise)
Gender	Gender of the member (dummy: gender = 1 if the respondent is male; and 0 otherwise)
Education	Education of the member (dummy: Education = 1 if the member is at least literate and above; and 0 otherwise)
Age	Age of the member (dummy: age = 1 if the respondent age is greater than 34; and 0 otherwise)
Investment	Amount of share purchased (dummy: investment = 1 if the member purchase more than six share; and 0 otherwise)
Social status	Social role or responsibility of the member in the community (dummy: social status = 1 if yes; and 0 otherwise)
Serving in BOD	Serving in BoD in the past (dummy: serving in BoD = 1 if yes; and 0 otherwise)
Serving in control committee	Serving in control committee in the past (dummy: serving in BoD = 1 if yes; and 0 otherwise)
Training and education	Members access to cooperative training and education(dummy: training and education = 1 if yes; and 0 otherwise)
Distance to the cooperative	Distance from the members home to the cooperative office (in minute)
Distance to the main market	Distance from member home to main market (in minute)

Table 2. Reliability statistics for member commitment items (dependent variable)

Cronbach's Alpha	N of Items
.838	16

The coefficient for economic factors is 0.311 and they were found to be the second most important (positive) factor influencing loyalty. This shows that offering a better price for members' products compared to competitors, paying sufficient dividend, success in the cooperatives' business operations, and offering additional services to members' all have a positive impact on members' loyalty.

Table 3. Member commitment measures

Measures	Items lodging	Eigenvalues	Total Variance Explained	KMO test
Loyalty	4	2.449	61.235	0.700
Identification	6	3.466	57.762	0.829
Participation	6	3.451	57.521	0.814

Table 4. Regression results of determinants on loyalty of member to their cooperatives

Independent variables	Unstandardized Coefficients		Sig.
	Beta	Std. Error	
(Constant)	.169	.143	.238
Economic determinants	.311	.071	.000***
Psychological determinants	.139	.044	.002***
Social determinants	.015	.044	.725
Organizational determinants	.046	.045	.311
Government interference	.022	.036	.538
Coop rules and regulations	.009	.090	.917
Cultural norm	-.051	.073	.486
Satisfaction	.204	.066	.002***
Type of the cooperative	-.898	.114	.000***
Gender	.057	.095	.549
Education	-.044	.074	.559
Age	-.039	.072	.589
Investment amount	.014	.098	.885
Social status	.090	.068	.189
Serving in BoD in the past	-.122	.078	.117
Serving in control committee in the past	.032	.095	.732
Training and education	.010	.068	.882
Distance to the cooperative	-0.0000311	.001	.980
Distance to main market	.003	.001	.000***

R² .823
Adjusted R² .807
No. observations 240

a: ***,** and * indicates significant at 1%, 5%, and 10% respectively

b: Source: computed from the researcher survey data, 2014

Members' satisfaction with their cooperative, psychological factors and distance from members' home to the main market were also found to affect loyalty. Members' satisfaction with the performance, management, progress and development of their cooperative positively influences their loyalty. This implies that satisfied members are willing to regularly supply their products to the cooperative. In addition, promoting cooperative ideology, building a positive image about the benefits of cooperative, and making the power distance between member and BoD small, bringing members together by organizing events, transparency and providing the necessary information to members were also found to have a positive impact on members' loyalty. Moreover, distance from

Table 5. Regression results of determinants on members' identification

Independent variables	Unstandardized Coefficients		
	Beta	Std. Error	Sig.
(Constant)	.045	.222	.839
Economic determinants	.087	.110	.431
Psychological determinants	.439	.069	.000***
Social determinants	-.206	.068	.003***
Organizational determinants	.028	.070	.691
Government interference	.087	.055	.115
Coop rules and regulations	-.099	.139	.480
Cultural norms	.087	.114	.447
Satisfaction	.378	.103	.000***
Type of the cooperative	-.339	.177	.056*
Gender	.006	.147	.965
Education	-.096	.115	.405
Age	-.079	.111	.480
Investment amount	.054	.152	.724
Social status	.154	.105	.147
Serving in BOD in the past	.137	.120	.257
Serving in the control committee in the past	.274	.147	.064*
Training and education	-.075	.105	.481
Distance to the cooperative	.000	.002	.852
Distance to main market	.002	.001	.029**
R ² .572			
Adjusted R ² .534			
No. observations 240			

a: ***,** and * indicates significant at 1%, 5%, and 10% respectively

b: Source: computed from the researcher survey data, 2014

members' home to the main market has a positive influence, suggesting that farmers who live far-away from the main market are more loyal to their cooperative compared to members living relatively near to the main market.

Table 5 shows the results of the regression analysis of the factors influencing members' identification with their cooperatives. Six determinants were found statistically significant. Psychological determinants, members' satisfaction with the performance of the cooperative, past serving in the control committee, and distance from main market were found to positively affect identification, while the type of cooperative and social determinants were found to affect identification negatively.

Psychological determinants that positively affect identification are the effort of the cooperative in promoting cooperative ideology, building a positive image about the benefits of the cooperative, narrowing the power distance between members and BoD, organizing events with both BoD and members, and transparency. As to member satisfaction, our results show that more satisfied members are more likely to identify with their cooperative than less satisfied members. The type of the cooperative was also found to be important for members' identification with their

Table 6. Regression results of determinants on participation in decision making

Independent variables	Unstandardized Coefficients		Sig.
	Beta	Std. Error	
(Constant)	-.509	.235	.032
Economic determinants	.134	.117	.255
Psychological determinants	.389	.073	.000***
Social determinants	-.096	.072	.188
Organizational determinants	.003	.074	.965
Government interference	-.006	.059	.922
Coop rules and regulations	-.058	.148	.695
Cultural norms	.099	.121	.416
Satisfaction	.122	.109	.264
Type of the cooperative	-.315	.188	.094*
Gender	.501	.156	.001***
Education	.066	.122	.591
Age	-.169	.118	.155
Investment amount	-.125	.162	.439
Social status	.272	.112	.016**
Serving in BOD in the past	.146	.128	.253
Serving in the control committee in the past	.307	.156	.050**
Training and education	.165	.112	.142
Distance from the cooperative	.000	.002	.890
Distance from main market	.001	.001	.507
R ² .514			
Adjusted R ² .472			
No. observations 240			

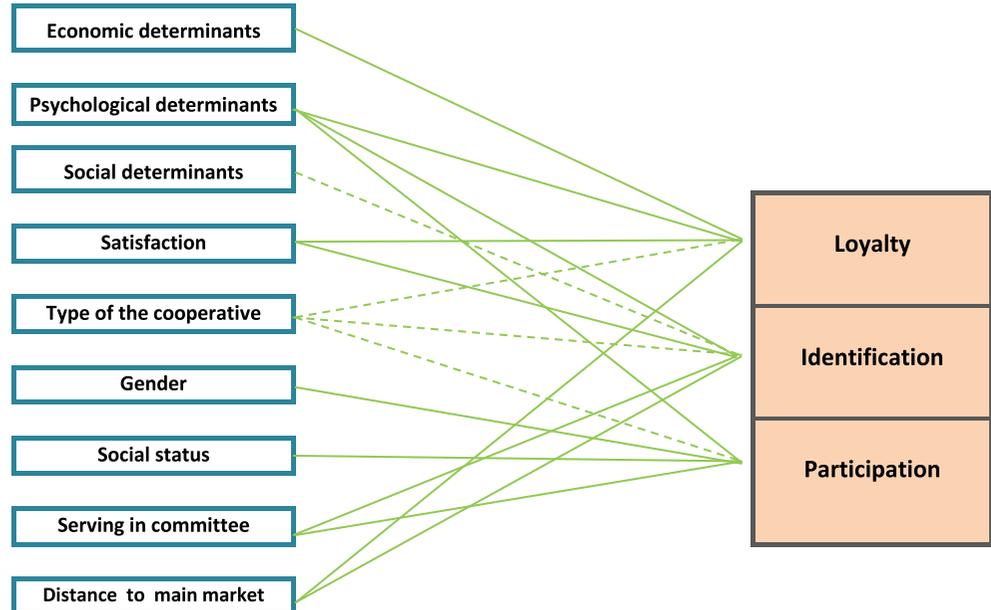
a: ***,** and * indicates significant at 1%, 5%, and 10% respectively

b: Source: computed from the researcher survey data, 2014

cooperative (although only significant at 10% level). This result indicates members of multipurpose cooperatives have lower identification compared to members of dairy cooperatives. Distance from the member's house to the main market was statistically significant at 5% level, and shows a positive relationship with identification. This means that farmers living further away from the main market are more likely to identify with their cooperative than farmers living closer to the market. Previous serving in the cooperative governance (such as doing committee work) has a statistically significant positive impact (0.274) on members' identification. Finally, social determinants were found statistically significant but surprisingly they have an inverse relationship with members' identification with their cooperative.

As shown in Table 6, five factors significantly influenced members' participation in decision making in their cooperative. Gender is the most important determinant, which means that male members are more involved than female members. In the study area, due to culturally defined roles and social responsibilities, most of the time men are encouraged to attend meetings and speak up during social gathering, while women are expected to stay home and take care of family matters.

Figure 1. Determinants of member commitment (the closed line shows positive relationship; the dotted lines shows negative relationship).



Psychological factors also affect participation. This implies that promoting cooperative ideology, building a positive image about the benefits of cooperative, low power distance between members and BoD, and transparent operation all have a positive effect on member participation in decision making. Participation also differs for the two types of cooperatives. Members in multipurpose cooperatives are less likely to participate in decision-making than members of dairy cooperatives. Not surprisingly, previous serving in committee work has a statistically significant positive impact on members' active participation in decision making.

Finally, the role of members in their community was found having a positive and significant impact on members' active participation in decision making. Hence, members who have political and religious leadership role, such as Edir, Equb and Mahber chairmen, are more likely to participate in decision-making in the cooperative compared to members who do not bear any social responsibility in the community. In *Figure 1* we summarize the results on the determinant of the three elements of member commitment.

4.2. Comparing multipurpose cooperatives and marketing cooperatives

We have found differences in member commitment between multipurpose cooperatives and marketing cooperatives. To assess whether the differences in the loyalty, identification and participation of members of dairy and multipurpose cooperatives are statistically significant, we run three one-way ANOVAs (see Table A1, A2 and A3 in Appendix 1).

The results of the ANOVA on loyalty indicate that there are indeed statistically significant differences in the means of the multipurpose and dairy cooperatives members in (1) the regular supply of products, (2) the willingness of members to sell to another buyer if they get a higher price than offered by the cooperative, and (3) the inclination to sell to the cooperative even when outside alternatives are better. However, we did not found a significant difference for continuing in the future as a member of the cooperative. Hence, members of multipurpose cooperatives showed lower loyalty in selling their agricultural products to the cooperative than members of dairy cooperatives.

We also present members' assessment of their identification with their cooperatives. To scrutinize whether the differences in the means of the identification of members between dairy and multipurpose cooperatives are statistically significant, we run a one-way ANOVA. The results are

given in Table A2 in Appendix 2. Six questions were assessed: (1) feeling of ownership, (2) believe in benefit, (3) belief in cooperative being the agent for the farmer, (4) caring about the future of the cooperative, (5) talking positively about the cooperative, and (6) encouraging others to become member in the cooperative. Members of dairy cooperatives showed more identification with their cooperative than members of multipurpose cooperatives.

Members participate in the general assembly meetings and in committee work, and they may serve as elected leaders in the board of directors. The members participate in goal setting, controlling and evaluating the activities. In addition, they may provide ideas to be considered in decision-making. To check whether the differences in the means of the participation for members of dairy cooperatives and multipurpose cooperatives are statistically significant, we run one-way ANOVA analysis. The results are presented in Table A3 in the Appendix1. Members of dairy cooperatives showed statistically significantly more participation in the cooperative. Participation was measured by items on regularly attending general assemblies, actively participating in decision-making, giving opinions, expectation that opinion is asked, expressing ideas in meeting, and influencing group decisions.

In sum, we found significant differences in member commitment between dairy cooperatives and multipurpose cooperatives. In general, member commitment is stronger in dairy cooperative and weaker in multipurpose cooperatives.

5. Discussion

To reveal the determinants of member commitment in agricultural cooperatives, we have divided commitment into three elements: loyalty, identification and participation. Loyalty refers to the transaction relationship between member and cooperative, such as delivering farm product or buying farm inputs. Identification means that the farmer thinks and talks positively about the cooperative and expects the cooperative to develop in such a way that is beneficial for his/her farm. Participation, as a core element of member effort, refers to the involvement of the member in the governance of the cooperative.

Results show that loyalty is particularly influenced by economic factors such as price, dividend, services and operational success. This is not surprising as the cooperative is primarily a vehicle for the farmers to gain economic benefits (Dunn, 1988). In addition, loyalty is positively influenced by trust and ideology (psychological factors), member satisfaction and distance to the market. The latter implies that farmers living further away from a market place are more loyal to their cooperative than farmers living closer to a market place. This is in line with what Fischer and Qaim (2012) found for cooperatives in Kenya. Farmers further away from the market place have fewer options in selling their products or buying their inputs, thus rely more on the cooperative.

Identification is determined by psychological factors like trust and ideology, by satisfaction, by having experience in the governance of the cooperative, and by the distance of the farm to the main market. This is in line with the literature on trust in cooperatives. For instance, Hansen et al. (2002) report that when members trust the leadership of the cooperative they are more committed to the goal of the organization. The positive effect of previous experience in the control committee on members' identification confirms the findings of Gray and Kraenzle (1998), Trechter et al. (2002), and Österberg and Nilsson (2009) who all found that members who have served in different committee roles are more committed than those who have not served in any decision-making position.

Surprisingly, social factors like “the cooperative contributes to social activities”, “the cooperative provides opportunities for individual members to interact with each other” and “the cooperative promotes informal relations between members and the board of directors” have a statistically significant inverse relationship with member identification. We could not found an explanation for this.

As to participation of farmers in the governance of Ethiopian cooperatives, the main determinants are trust and ideology, gender (but with an inverse relationship), social status, and past experience in

the governance of the cooperative. Most of this is in line with existing literature. A leading role in the community has a positive impact on members' participation in decision-making. Those members who have a political or religious leadership role, such as chairman of Edir, Equb and Mahber, are more likely to be active participants in decision-making compared to members who do not take on any social responsibility in the community. This finding is not surprising, because particularly in small rural communities people having a board position in one organization are more likely to be on the board of another organization compared to people with no leadership experience.

Our findings on the determinants of participation differ but are not inconsistent with those of Barraud et al. (2012) who studied the effect of trust on participation of members in the governance of the cooperative. Instead of treating participation as a behavioral element of commitment as we have done, Barraud et al. (2012) showed that (affective) commitment plays a mediating role between trust and participation.

A key finding of this study refers to the distinction between two types of cooperatives. The type of cooperative was found to be a determinant of all three elements of commitment. When comparing member commitment in dairy cooperatives and multipurpose cooperatives, we found that members of a multipurpose cooperative were less loyal in their transactions with the cooperative, less actively participating in decision-making, and having a lower identification. The higher commitment of dairy farmers to their cooperatives could be explained by the lack of alternative market outlets for milk. Farmers producing milk face high transaction costs due to the perishability of the milk and unreliability of other buyers (Bonus, 1986). Due to the many fasting days that a large number of Ethiopians comply to, the demand for milk is very volatile (Francesconi et al., 2010). Only cooperatives guarantee to purchase all milk every day of the year. The high dependency of the farmers on the cooperative obviously leads to high member commitment.

6. Conclusion

The first objective of this paper was to identify the main determinants of member commitment in agricultural cooperatives in Ethiopia. The Ethiopian government sees a major role for cooperatives in promoting smallholder market access (ATA, 2013). Particularly multipurpose cooperatives, which are traditionally focusing on the provision of farm inputs, are encouraged to develop into stronger marketing institutions. However, for cooperatives to perform well, particularly in their marketing function, members need to become and remain committed. If members are not loyal in their transactions with the cooperative, the latter will operate inefficient which negatively affects the membership benefits for other members. Also participation in the decision-making bodies is important as cooperatives are member-based organizations. Only active member participation can guarantee that the cooperative works in the interests of members. Without involvement of the members themselves, cooperatives will be captured either by politicians or by managers.

In clarifying the main determinants of commitment, we distinguished between three elements of commitment: loyalty, identification and participation. This distinction allows a better understanding of the pathways in which various factors influence member commitment. On the basis of our empirical study we conclude that this distinction allows for a more detailed exploration of the various determinants of member commitment. To our best knowledge, this distinction has not been used before in any publication (discounting the unpublished paper by Bijman & Verhees, 2011).

6.1. Management and policy implications

Knowing the determinants of member commitment can help cooperative leaders to make the right choices as to member-oriented policies. Also supporting organizations like NGOs and local governments can benefit from having good insights in what drives members of cooperative organizations to be more loyal and more involved.

Some of the determinants are beyond the control of the cooperatives leaders, such as social status of the member and distance of the farm to the main market. Most other factors, however, can be affected by the leadership, as they relate to the skills of the leaders, the communication between leaders and ordinary members, the promotion of trust and ideological support, improving member satisfaction, and providing (female) members more experience in the decision-making bodies of the cooperative. The latter can be done by frequently elections of board and committee members.

We found clear differences in member commitment between marketing (dairy) cooperatives and multipurpose cooperatives. The main policy implication for the Ethiopian government is that promoting multipurpose cooperatives to become strong marketing cooperatives will require substantial effort and time. Changing multipurpose cooperative into marketing cooperatives not only calls for additional skills of the leadership and additional investments in more risky ventures, it also requires a different relationship between members and cooperatives. Changing this relationship will not take place overnight, and members need to be become convinced that their cooperative can do the marketing job best.

We did not analyse whether determinants of commitment are different for members of multipurpose cooperatives compared to dairy cooperatives. Thus, further research could look into this question.

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Author details

Habtamu Mekonnen Awoke¹

E-mail: habtamubau@yahoo.com

¹ Economics and Consumer Studies, Wageningen University and Research Centre, Netherlands.

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Notes

1. For instance, Bijman et al. (2012) found that in the EU 40% of all agricultural products are marketed through cooperatives.
2. Village, and smallest administrative unit within the woreda.

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Appendix 1: ANOVA Tables

Table A1: ANOVA table for multipurpose and dairy cooperative members loyalty

		Sum of Squares	df	Mean Square	F	Sig.
(1) I regularly sell all my products to the cooperative	Between Groups	365.067	1	365.067	578.789	.000
	Within Groups	150.117	238	.631		
	Total	515.183	239			
(1) I will sell my products to another buyer if I get a higher price than offered by my cooperative	Between Groups	232.067	1	232.067	177.300	.000
	Within Groups	311.517	238	1.309		
	Total	543.583	239			
(1) I will sell to my cooperative even if another buyer offers a better price for my product	Between Groups	299.267	1	299.267	296.876	.000
	Within Groups	239.917	238	1.008		
	Total	539.183	239			
(1) I will continue in the future as a member to this cooperative	Between Groups	.038	1	.038	.084	.772
	Within Groups	105.758	238	.444		
	Total	105.796	239			

Table A2: ANOVA table for multipurpose and dairy cooperative members identification

		Sum of Squares	df	Mean Square	F	Sig.
(1) I feel like I am part and owner of the cooperative	Between Groups	20.417	1	20.417	46.381	.000
	Within Groups	104.767	238	.440		
	Total	125.183	239			
(1) I believe that I am benefiting from my cooperative	Between Groups	40.838	1	40.838	62.980	.000
	Within Groups	154.325	238	.648		
	Total	195.163	239			
(1) I believe my cooperative is my agent in the market-place	Between Groups	64.067	1	64.067	103.645	.000
	Within Groups	147.117	238	.618		
	Total	211.183	239			
(1) I really care about the future fate of my cooperative	Between Groups	8.817	1	8.817	34.157	.000
	Within Groups	61.433	238	.258		
	Total	70.250	239			
(1) I talk positive things about my cooperative to friends	Between Groups	18.704	1	18.704	41.107	.000
	Within Groups	108.292	238	.455		
	Total	126.996	239			
(1) I encourage other people to become a member in my cooperative	Between Groups	36.037	1	36.037	50.764	.000
	Within Groups	168.958	238	.710		
	Total	204.996	239			

Table A3: ANOVA table for multipurpose and dairy cooperative members participation

		Sum of Squares	df	Mean Square	F	Sig.
(1) I regularly attend general assembly meetings	Between Groups	25.350	1	25.350	26.007	.000
	Within Groups	231.983	238	.975		
	Total	257.333	239			
(1) I actively participate and get informed immediately when decisions are being made	Between Groups	25.350	1	25.350	25.325	.000
	Within Groups	238.233	238	1.001		
	Total	263.583	239			
(1) I usually find it very important to give my opinion in meetings	Between Groups	59.004	1	59.004	52.486	.000
	Within Groups	267.558	238	1.124		
	Total	326.562	239			
(1) When I attend a meeting, my opinion in specific matters is asked	Between Groups	33.004	1	33.004	29.834	.000
	Within Groups	263.292	238	1.106		
	Total	296.296	239			
(1) I always express my ideas during meetings	Between Groups	79.350	1	79.350	71.378	.000
	Within Groups	264.583	238	1.112		
	Total	343.933	239			
(1) My voice always influences the group's decision making process	Between Groups	68.267	1	68.267	63.105	.000
	Within Groups	257.467	238	1.082		
	Total	325.733	239			



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