"The role of dividend payment in cooperative member commitment"

A study on dividend payment structures in Ethiopian multipurpose farmer cooperatives and its effect on member commitment

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Abstract

This research aims at finding the challenges boards of PCs face regarding dividend payment, and also at investigating a possible relationship between dividend payment and the commitment of members. Ethiopian cooperatives differ from classical cooperatives, as dividend is supposed to be paid to members based on the number of transactions and the number of shares. Dividend is expected to increase member commitment, serving as a financial incentive for patronizing the cooperative. Both qualitative and quantitative measures were used to answer the research questions. The main results are that dividend is not paid based on transactions, only on basis of shares, and that there is a positive relation between dividend payment and commitment, though very weak. Moreover, the strongest relation was found between whether someone received dividend last year and their affective commitment. I argue that the relation between receiving dividend and actively patronizing the cooperative could be stronger if dividend payment was based on transactions and therefore I recommend PC leaders to revise their refunds towards a more transaction-based payment structure.

Keywords: cooperatives – dividend – incentives - members - commitment

Executive summary

In Ethiopian multipurpose cooperatives, members view dividends as a major benefit from being a cooperative member. However, experience has shown that dividends are often not paid out, which decreases members' trust in cooperatives. Trust is an important determinant for commitment, which in turn is needed for the survival of the cooperative.

This research is executed in cooperation with Agriterra Ethiopia and aims at filling the knowledge gap that exists around dividends in Ethiopian cooperatives and its role in enhancing commitment of members. For the purpose of this research, the main research question is: '*What determines dividend distribution in Ethiopian multipurpose cooperatives and how does this affect their members' commitment?*'. This question is supported by two sub questions, namely: ' *What are determinants for receiving dividend?*' and ' *Is there a relation between dividend payments and member commitment in multipurpose cooperatives in Ethiopia?*'.

The hypothesis to the first research question is that a combination of both member characteristics and cooperative characteristics determine whether someone receives dividend. According to the Cooperative Societies Proclamation, dividend should be paid on the basis of transactions and shares. However, profitability and the decision-making structure of the cooperative could influence the likelihood of paying out dividend. Furthermore, the answer to the second research question is expected to show a positive contribution of dividend payment to commitment, as it serves as an incentive for patronizing the cooperative. The effect on affective commitment (identification, confidence) is expected to be smaller than active aspects (effort, loyalty), because previous research has proven that monetary incentives could undermine intrinsic motivation.

The first question was answered qualitatively on cooperative level and quantitatively on members' level. On members' level, a regression was ran with the likelihood of receiving dividend and the amount of dividend received as dependent variables. Independent variables were: the number of shares, the number of transactions and control variables.

The answer to this question is that dividend is not paid based on transactions, but only on the basis of shares. The conclusion is that Ethiopian cooperatives function more like investor owned firms than classical cooperatives in terms of their profit distribution. There could be no conclusion on determinants on cooperative level, since there was only one PC that had not paid out dividend. The qualitative analysis pointed towards a knowledge gap regarding dividend payment, both within the board and among members.

The second question was answered by a factor analysis, resulting in four factors for commitment: affective commitment, transaction loyalty, self-assessment of loyalty and effort, and the same for the generated factors trust, democracy through voting and confidence in the board.

The factors were used in t-tests and regressions, to answer the second research question. The t-tests show that psychological aspects are sensitive to dividend payment in the long and short run. In order to enhance active commitment, regular dividend payment is needed, as this aspect is sensitive to time. The relations shown in the regressions are much weaker. Only the relation between affective commitment and received dividend the last year is significant. The hypothesis that dividend payment would undermine intrinsic motivation for commitment is rejected. The weaker relations in the regressions are likely to be related to the fact that dividend is not based on transactions, which means dividend is no incentive for doing business with the cooperative and therefore does not enhance patronage or active commitment.

Based on the quantitative results, I have recommended to focus more on paying dividends based on transactions, in order to strengthen the relation between dividend payment and commitment.

Qualitative analysis of challenges PCs face regarding their dividend payment, showed that there is a knowledge gap within boards of PCs as well as among members with regard to financial bookkeeping and dividend. Information provision and training on dividends is needed, both for cooperative leaders and members, to increase mutual understanding.

Preface

For about eight months I have been working on this thesis. Not always fulltime, as I have also taken a course on econometrics to improve my Stata – and analysis skills. I also lost some time because of illness in Ethiopia and the insurance hassle that followed. Now that everything is finished, I have to admit I am quite proud of the result, but finishing this thesis would have been impossible without the help of many people.

I would like to start with the consultants from Agriterra. Desiree, Mascha and Habtamu as my main contact persons, I would like to thank you for helping me set up the research and providing all the information, accommodations and advice. Also your concerns and help after my "accident" have been priceless. For support in my last days in Ethiopia I would also like to thank Robert and Emnete, Hailat and the rest of the Agriterra crew.

Then Lemi, my co-researcher. We have had so much fun in the field and thanks to your dedication we have managed to do all the interviews I needed. Even after my departure from Ethiopia, you have been helpful and finished all the interviews. Thank you for that and also for your enthusiasm in introducing me to the Ethiopian culture.

At last, I want to thank my two supervisors from Wageningen University. My topic has not always been easy, because of no previous research, but also because of two total different fields of specialization. You have been very helpful in guiding me in the right directions, while stimulating me to make my own decisions. I am very happy with the result and I hope you are so too.

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1. Introduction

Ethiopia is a country with a strong cooperative history (Tefera et al., 2016). During the Derg regime (1974-1987), cooperatives were established by the government for political and military purposes, and with the intention to control agricultural production and marketing. After the downfall of this regime, cooperatives were still strongly associated with communist governance. Nowadays, cooperatives are established for agricultural growth and as a means to end rural poverty. However, the government still has a prominent role in the promotion of cooperatives and the execution of policies through them. Cooperatives are most often established in cooperation with the government or NGOs, 74% of the cooperatives are established by a government body or NGO (Bernard and Gabre-Madhin, 2007) and also laws about cooperative governance have been adopted (Federal Negarit Gazeta, 2004).

The Cooperative Promotion Agency is an organisation, founded by the government to control governance of cooperatives and promote establishment of new cooperatives (Bernard, 2010). Cooperatives are structured in four cooperative tiers: the primary cooperatives, which are organised on *kebele* (neighbourhood) level and will be called cooperatives or PCs in this thesis; cooperative unions, which are organised on *woreda* (district) level and will be called unions throughout this thesis, cooperative federations and cooperative confederations. Until recently, neither federations nor confederations were actually run in practice. Lately, some federations have been founded, however, they function similar to unions (Middelbeek, personal communication, June 1, 2016).

Cooperatives in Ethiopia are mainly multipurpose cooperatives, 95% of them have inputs provision as their main activity. Numbers of cooperatives that are active in marketing are very low (Tefera et al., 2016).

This research is executed in cooperation with Agriterra Ethiopia. Agriterra is an NGO, based in the Netherlands, which "supports farmers' organisations in fighting poverty, with advice from experts from the Dutch agricultural sector and with finance from the Dutch government." (Agriterra, 2016). In Ethiopia, Agriterra has worked for 5 years now, as a consulting agency with 8 consultants. Agriterra Ethiopia claims that for many farmers, the advantages of being a cooperative member are not quite clear. They perceive dividend payment to be one of the main things that distinguish cooperatives from other firms, and therefore to be of added value to the cooperative members.

However, consultants from Agriterra have experienced that dividends are often not paid out in Ethiopian cooperatives, which they think negatively influences members' trust in the cooperative. Among other determinants, trust (in the Board or in benefits from membership) is a determinant of commitment to a cooperative (Morgan and Hunt, 1994; Doucette, 1997). Commitment of members is needed for the survival of the cooperative (Fulton and Adamowicz, 1993), because members' commitment can lower transaction costs for the cooperative, and subsequently improve its services (Bijman and Verhees, 2011). Fulton and Adamowicz (1993) argue that the voluntary nature of patronage in cooperatives, leads to a classic free-rider problem. People are not penalized for disloyalty, but too little loyalty may lead to failure of the cooperative. Therefore, incentives are needed for members to keep them committed and loyal. This research aims at finding what challenges PCs face regarding dividend payment, and also how dividend payments influence the members' commitment to the cooperative.

Even though much research is conducted on the role of financial incentives in motivation of employees and in people's motivation to behave healthy, very little has been researched about its role

in commitment to cooperatives. Besides that, Ethiopian cooperatives have an exceptional structure of distributing profits, namely by the use of dividends instead of patronage. The purpose of this research is to fill this knowledge gap.

The main research question of this thesis is: What determines dividend distribution in Ethiopian multipurpose cooperatives and how does this affect their members' commitment?

The following sub research questions are set up to support the main research question:

- What are determinants for receiving dividend?
- Is there a relation between receiving dividend and member commitment in multipurpose cooperatives in Ethiopia?

In order to answer these questions, I have done a survey among members and I interviewed PC and Union leaders. Both quantitative and qualitative measures are used for analysing the answers. This research will specifically focus on the Amhara region, since that is where the fieldwork will be executed. This region was chosen in consultation with Agriterra, because at the moment of departure to Ethiopia the region was very stable: no droughts or severe unrest were occurring, so those factors would not hamper the research. It would also preclude bias from those factors influencing dividend payment or members' commitment.

2. Conceptual framework

In this research I aim at finding the role dividend payment plays in cooperatives and the effect it has on commitment of their members. In order to be able to research dividend structures and concluding on the basis of surveys, I will first explain the purpose of cooperatives and determine what dividend is, and how it is used in cooperatives. Furthermore, I will explain the institutional context in which Ethiopian cooperatives are embedded, and how this results in different dividend payment structures than classical Western cooperatives have.

2.1. The purpose of cooperatives

Cooperatives are "autonomous associations of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise" (ICA, 2016). Internationally, seven core principles have been adopted to describe cooperative values: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; provision of education, training and information; cooperation among cooperatives; and concern for the community.

Because members of a cooperative are also the owners of this enterprise, they have the rights to reap the benefits that doing business with this enterprise and owning it has. They have the right to residual income, which is the right to share in the cooperative's profits, after all duties have been paid, and they have the right to residual control, meaning they are the ones to decide about rules and regulations that have not been specified yet. Assessing property rights is a means to incentivize farmers to maximize collective output, instead of only individual output.

Cooperatives are established when the market fails to deliver services and goods at the desired price and quality (Ortmann and King, 2007). A cooperative is "a horizontal club organized to accomplish vertical integration" (Sexton, 1986: 215), forward or backward in the value chain. Besides filling a market gap, cooperatives are established to decrease transaction costs, especially by decreasing post contracting opportunistic behaviour (Sexton, 1986: 215). Also avoiding effects of government interference in the market, increasing market power and circumventing risks are mentioned by Sexton (1986), as incentives for cooperative formation.

In Ethiopia, many agricultural inputs and basic needs are only accessible through cooperatives. Avoiding effects of government interference is not applicable to Ethiopian PCs, as most are established by, or with help of, government institutions (Bernard, 2010).

2.2. Dividend

In Chapter 2.1. The purpose of cooperatives, I explained that farmers become members voluntarily, because of advantages membership offers. However, because of vaguely defined property rights, it is not ensured that members bear the full costs of the actions and/or receive the full benefits they create (Cook, 1995: 1156). The free rider problem could occur when new members obtain the same patronage as existing members and receive an equal payment per unit of patronage, and also when benefits from membership are not limited to members but could be reaped by non-members too. This free rider problem creates disincentives for investing in the cooperative, as does the horizon problem,

which arises "when a member's residual claim on the net income generated by an asset is shorter than the productive life of that asset" (Cook, 1995: 1156). As both problems lead to under-investment in the cooperative, other incentives are needed for members to patronize and invest in the cooperative. Current payments to members need to be increased, instead of further investment in assets (Ortmann and King, 2007). In the following subchapter, I will explain the role of dividend in cooperatives to provide insights into profit distribution as an incentive for patronizing and investing in cooperatives.

Ownership of any enterprise is generally linked to control and claimant rights. Dividend, the residual claimant right of investor owned firm (IOF) owners, is defined as: "A share of a company's net profits distributed by the company to a class of its stockholders. The dividend is paid in a fixed amount for each share of stock held." (Scott, 2003).

In most companies, dividend is based on shares. The more someone invests in a company, the more benefits he or she will reap from it. This is a major financial difference with most cooperatives, where profit is allocated based on patronage, i.e., the number or volume of transactions of the member with the cooperative. How much the member reaps from ownership, depends on how much he or she uses the cooperative. This means that in general, cooperatives do not pay out dividend, but rather distribute patronage refund. In classical cooperatives, people do invest in the co-op initially, but do not receive dividend over their investments. They receive interest at most, but usually the amount does not change and is paid back upon departure. (Lund, 2013)

Even though patronage refund is the most usual way of distributing profits in cooperatives, a consideration that has to be made is whether the board wants to promote transactions with - or investments by its members. If the cooperative wants to promote investments, for example if there are plans for expanding or buying new machines, the board can choose to pay dividend per financial share in the cooperative. The members are then incentivized to take more shares and therewith invest in the cooperative's growth. On the other side, if no expansion is desired and the board just wants to improve its service to its members, they may choose to pay out dividend to ratio of transactions (patronage refund). Then, the members are incentivized to do business with the cooperative as much as possible, instead of side selling or saving. For certain reasons, among which limitations in capacity or the desire to both expand and optimize services for members, a cooperative can choose for a hybrid structure, in which part of the dividend is paid per share and another part per transaction.

Taking into account considerations such as fairness and the effect on commitment, boards of cooperatives have to make a decision on the distribution of profits. If a too large share of the profits is paid to members, this may reduce the capital available for investments and insurance, which declines financial flexibility for the management. Also, profits in a cooperative are obtained from business with members (besides non-member business), which means prices for marketing products are too low, or inputs are too expensive (Sexton and Iskow, 1988). Even though profits will be refunded to members, incorrect price signals have been given out.

2.3. Dividend distribution in Ethiopian cooperatives

Profit distribution in Ethiopian cooperatives differs from the procedure in most Western cooperatives, where profits are distributed based on use. The Ethiopian Cooperative Societies Proclamation (Federal Negarit Gazeta, 1998) states that, in order for cooperatives to be beneficiary to its members, they should make profit. Of this profit, 30% should be allocated for reserves, expansion of work and social

services. The other 70% should be divided among members, based on the number of shares members have and the amount of goods sold to the PC (the number of transactions).

In order to become a member, Ethiopian farmers buy one share in the cooperative (Federal Negarit Gazeta, 1998). If they wish to invest more in the cooperative, they are allowed to buy more shares to increase the amount of expected dividend. As opposed to classical cooperatives, Ethiopian cooperatives pay out dividend in relation with this amount of shares, instead of only interest or just the full amount when exiting the co-op.

Their way of distributing dividend based on both shares and transactions, makes that Ethiopian cooperatives seem a hybrid between IOFs and cooperatives, in which both investments and transactions are promoted.

3. Hypothesis development

The main research question of this research is: How is dividend distributed in Ethiopian multipurpose cooperatives and how does this affect their members' commitment? Strictly, this research question contains two research questions, namely 'What determines dividend distribution among members of multipurpose cooperatives in Ethiopia?' and 'Is there a relation between dividend payments and member commitment in multipurpose cooperatives in Ethiopia?', which can both be translated into hypotheses. In this chapter, I will develop hypotheses with the use of a theoretical framework, and also the conceptual framework from the previous chapter.

3.1. Determinants of receiving dividend

Whether a cooperative member receives dividend basically consists of two questions: whether the cooperative pays out dividend and if so whether this particular member does receive it. Because of the law, Ethiopian cooperatives are obliged to pay dividends, based on a member's shares and transactions (Federal Negarit Gazeta, 1998). However, previous investigations by Agriterra provided insights that many farmers are dissatisfied by the dividend payment practices of their cooperative. This is one reason to believe that dividend payment may not be in compliance with the manual (Federal Negarit Gazeta, 1998). Studies by Denis (2006) and Jensen et al. (1992) in the United States have found that firms that are more profitable, are more likely to pay out dividend to shareholders. I hypothesize that more profitable cooperatives are more likely to pay dividends to their members than financially less successful cooperatives, as there is no information about dividend payment in Ethiopian cooperatives, only on Western firms.

Because of members' dissatisfaction, I expect another factor to also possibly play a role in dividend structures, namely member involvement in the decision-making in the cooperative, as financial issues are likely to be vulnerable to corruption. This would indicate that not all members of PCs that pay dividend, actually receive dividend. Elite capture may be applicable here (Dutta, 2009). This means there may be a selection bias in the distribution of public goods. Considering PCs as communities, profits are "public goods" as they are of all members and ownership is equal for all members. In the case of elite capture, some members experience reduced access to these profits compared to others. This can happen when an elite group is able to discriminate others in the community. Selection bias implies that there is a pattern in this selective decision of the distribution of benefits (Dutta, 2009). I expect member characteristics to play a role in the probability of receiving dividend. Ethiopian law prescribes that dividend should be paid on the basis of transactions and shares. Based on elite capture theory, my hypothesis is that transactions and shares are not the main contributing factors, and that other variables, such as gender, age and level of education play larger roles in the probability of receiving dividend, as these are likely to determine the elite in Ethiopian communities.

In short, I hypothesize that a combination of both member characteristics and PC characteristics determine whether someone receives dividend. On PC level, I expect profitability to influence the payment of dividend by the cooperative. On member level, I expect gender, age and level of education to influence the probability of receiving dividend, besides or instead of transactions and shares.

3.2. Relation between receiving dividend and member commitment

The second research question is whether there is a relation between receiving dividend and member commitment. First, I will discuss aspects of commitment and work towards a framework to be used in

my survey. Thereafter, I will combine the concept of dividend in cooperatives with the theory on commitment to draw an hypothesis for this second research question.

3.2.1. Commitment

The past years, much research is done on the aspects and determinants of member commitment to cooperatives (Bijman and Verhees, 2011; Cechin et al., 2012). In this section I will discuss the aspects of commitment that are being brought forward in the literature, also as synthesized by Sloot (2016). I will also briefly talk about determinants, as to emphasize dividend payment and other financial benefits are not the only factors influencing member commitment, if at all. The first question to be asked here is: what is commitment? Morgan and Hunt (1994: 23) have defined commitment as:

> "An exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it; that is, the committed party believes the relationship is worth working on to ensure it endures indefinitely."[1]

Meyer and Allen (1991: 67) have distinguished three different components of commitment: affective commitment, continuance commitment and normative commitment[2]. Affective commitment is described as "the emotional attachment to, identification with, and involvement in the organization" and refers to the *want* to stay with the organization. Continuance commitment is the "awareness of the costs associated with leaving the organization" and the feeling of *need* to stay with the organization. Normative commitment is a "feeling of obligation", that men *ought* to remain with the organization. These components are not to be considered types, as people may feel all three components to varying degrees and are not exclusively committed for one reason.

In supply cooperatives, farmers are both customers and members (Bijman and Verhees, 2011), as was also mentioned by Enke (1945). Even though the cooperatives in this study are multipurpose cooperatives, supply of inputs is one of the major services these cooperatives provide. Therefore, both their customer commitment and member commitment also play important roles in the commitment of farmers to their multipurpose cooperatives. Member commitment is the more affective commitment, which expresses the extent to which members would like to maintain their relationship with the cooperative. Fulton (1999) defined member commitment 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". Customer commitment is about the need to maintain the relationship, because of financial or economic reasons such as switching costs and low prices, also called continuance commitment or calculative commitment (Mathieu and Zajac, 1990).

A combination of both calculative and affective commitment will be measured in my surveys, so the commitment of the farmers as both customers and members. I have chosen for this combination, because it grasps the full meaning of commitment and it would be interesting to see to which aspects of commitment, dividend payment possibly contributes.

[1] Morgan and Hunt (1994) refer to commitment of firms to other firms, not of members to a cooperative. This is different because the relation between members and their cooperative may consist of more than only the business relationship. However, replacing "exchange partner" with "member" and "another" with "the cooperative", this quote is still applicable to cooperative commitment, as "important" in this quote does not only refer to economic importance.

[2] Meyer and Allen (1991) refer to commitment of employees to their organization. I applied this quote to member commitment, because both members and employee have affective, economic and normative components inherent to commitment to their respective cooperative or organization.

Sloot (2016) has recently analysed the existing literature on commitment of members to cooperatives and merged prominent ideas into one framework. She subdivided commitment into three categories; loyalty, identification and effort:

> "Loyalty is explained as the willingness to patronize the organization; either in a very straightforward way, in the case of available alternatives or the willingness that arises from someone's beliefs about being loyal. […] Identification **[…]** is defined as: 'The state of being or feeling oneself to be closely associated with a person, group, etc., in emotions, interests, or actions' […] (and) effort relates to that part of commitment that measures the willingness to invest in the continuation of the relationship." (Sloot, 2016: 27)

The final framework Sloot developed for measuring commitment, the one I will use for developing my survey, is shown in Figure 3.1.

Figure 3.1. shows a classification of commitment into three major categories: Loyalty, Identification and Effort. Both loyalty and effort are divided into sub-classifications (respectively self-assessment, alternatives and beliefs; and involvement and investing resources).

Now that the definition and components have been discussed, and the relationship between dividend payment and commitment is to be tested, I will first distinguish determinants of commitment, which can serve as control variables in the regressions.

Trechter, King and Walsh (2002) have found that member characteristics, such as whether they received training or not and their service in committees, are positive determinant variables for commitment. They found level of education to decline the commitment level. They rejected Staatz's (1989) hypothesis, that older members, with fewer years left with the cooperative are expected to have a lower level of commitment.

Gray and Kraenzle (1999) have found that member involvement in cooperatives is positively correlated with the size of their farm. The fact that farm size increases the probability of joining a cooperative, implies that there are incentives for farmers that are related to their farm size for joining, which could also lead to more commitment of these respective farmers.

Heterogeneity within the cooperative may also influence commitment (Bernard, 2010), as members may feel less involved, attached, loyal and dedicated to the cooperative when they share the enterprise with farmers with different interests and products, which is the case in multipurpose cooperatives.

Lastly, cooperation is said to be an important value in Ethiopian traditions (Veerakumaran, 2007). Working and living together are important to their culture. Because of cooperative traditions, commitment may be due to more cultural and normative values than financial benefits.

Figure 3.1.: **Sample Item Categories Measuring Member Commitment**
Source: Sloot (2016)

Items	Category
- I am loyal to the supplier - I am very committed to relationship - I have a strong sense of loyalty - I am not very committed (R) - Rate your level of commitment - Considered terminating membership (yes/no)	**I Loyalty** *Self-Assessment*
- Will easily shift to another supplier - If there is a better alternative → switch - Continually on lookout for replacement - I could easily become as attached to another organization as I am to this one - I would sell to this cooperative even if another firm offers better price	**II Loyalty** *Alternatives*
- Switching jobs seems unethical - I have a sense of moral obligation to stay because of loyal feelings - People move company too often - People should be loyal to organization - In case of an alternative offer; it would not feel right to leave	**III Loyalty** *Beliefs*
- Positive about supplier - Proud of - Happy to be a customer - Feels like family - Emotional attachment - Personal meaning - Sense of belonging - Agree with norms & values of other party - Recommend to colleagues - Defend when criticized - Enjoy talking about - Enjoy discussing about - Support of supplier is strong	**IV Identification** *Personal Feelings*
- Supplier's future is also my concern - Their problems are my problems - Concern with cooperative's future - Other party deserves our maximum effort to maintain - Patient when other makes mistakes that cause you trouble - Wanting to be a 'company (wo)man' is not sensible anymore (R)	**V Identification** *Involvement*
Willingness to: - Make adjustments on farm - Pay more, temporarily, if that helps supplier - Put in extra effort if that helps supplier - Make long-term investments - Dedicate people & resources for sake of other party - Invest if cooperative requires - Receive lower price temporarily	**VI Effort** *Investing Resources*

3.2.2. Relation between dividend payment and commitment

The aim of this research is to determine whether receiving dividend is a determinant for commitment. Fulton and Adamowicz (1993: 50) found that members who consider the ability to share in profits through dividends to be important, are more likely to patronize the cooperative. They also suggested that members view dividends as a return for patronizing the cooperative. Also Bernard and Spielman (2009: 64) have found that, in Ethiopia, the difference in benefits for members and non-members is often limited to distribution of profits and dividend. As Bernard and Spielman put it, most services are friendly to non-members, since services like information provision and technical training are non-excludable or have positive externalities. Also inputs provision, which is the major service most Ethiopian multipurpose cooperatives deliver, is often not exclusively for members. However, only members can reap extra benefits in the form of dividends generated from these sales, which is therefore one of the main distinctions from non-members.

Where dividend payment in IOFs is mainly a way to incentivize investors, in cooperatives it serves both as an incentive and an ideological tool. Patronage dividends "help boost the income of farmers directly or by reducing the effective cost of the goods and services provided" (Ortmann and King, 2007: 20). Fulton and Adamowicz (1993) suggest that members view dividends as a return for patronizing the cooperative.

This is a typical example of a principal-agent model, in which the principal (the Board of the PC) wants to motivate the agent (the member) to make the most appropriate decision (Berhold, 1971), namely to put effort into the continuance of the cooperative. The desired action is related to monetary rewards, in order to incentivize members to make this decision: paying dividends for patronizing the cooperative and investing in the cooperative through shares.

However, it is questionable what aspect of commitment is then grasped by the attribution of dividend. Referring to Mathieu and Zajac (1990), calculative commitment is higher, since the income of farmers will increase when dividend is paid. In its turn, economic incentives increasing calculative commitment could increase affective and normative commitment as well, as people's loyalty, identification and willingness to put in effort may increase when their income from transactions and shares inclines.

On the other hand, Slater (1980) has argued that, even though the incentive to put in effort and to be loyal increases initially, the intrinsic motivation of people declines when they receive financial rewards. In his paper, the statement is based on research on employee motivation, however, I would argue it could hold for cooperative members as well: "getting people to chase the money… produces nothing but people chasing money" (Slater, 1980: 127). This would indicate that loyalty declines when financial rewards are given, as financial benefits are then the only reason for being committed, minimalizing the role of affection and identification.

Following the line of argumentation, I hypothesize dividends to have a positive effect on member commitment. However, I consider the fact that arguments in favour of a positive relation are all about financial incentives and therefore seem to stimulate only these aspects of commitment that are related to increasing returns by actions (effort, loyalty). In addition, referring to Slater (1980), I expect a weaker, if not negative, relation between psychological aspects, such as affection and identification, and commitment, because financial rewards could undermine intrinsic motivation.

4. Method

The questions raised in the introduction will be answered structurally, some before the fieldwork, and some using data collected in Ethiopia. In this chapter I will explain which methods will be used for answering the respective research questions. First I will discuss the selection of PCs that were used for answering both the questions.

According to Tefera et al. (2016), there are currently over 15 thousand primary cooperatives in agriculture in Ethiopia. They are divided over 181 unions. The sample is taken from a smaller portion, namely only primary cooperatives in the Amhara region. Five unions were accessible through cooperation with Agriterra, among which we decided to choose the three best functioning unions (according to a ranking executed by Agriterra staff). Surveying in just one union is risky, since there may be differences between unions that make cooperatives within these unions anticipatory different from each other. Due to unrest in many parts of the Amhara region, however, we decided we could not continue in all previously selected Unions. Only the first one (Ras Gayint Union) was still incorporated in the research. Another client of Agriterra (Merkeb Union) and another Union (Wodera Union), which is not a client of Agriterra, were included in the research. Still, all used Unions are located in the Amhara region.

Within each of these three unions, 5 PCs were randomly selected from all multipurpose member PCs. PCs that offer a larger variety of services, seem to perform worse than PCs with fewer activities (Bernard, 2012). More farmers may be attracted to become a member, but individual members will profit less from it. This is partly caused by the fact that marketing cooperatives are often performing better than others, and including these other types (supply, credit) will automatically worsen the financial situation.

Because of possible differences in commitment between PCs with different purposes (and accordingly, different levels of heterogeneity) only multipurpose cooperatives were selected. The only restriction to these PCs was that they had to be accessible by public transport, because of budgetary constraints.

4.1. Determinants of receiving dividend

The sub question about determinants of dividend distribution consists of two parts, namely:

- What are determinants for paying out dividend by the PC?
- What are determinants for receiving dividend?

The first question will be answered through a multiple case study, consisting of the empirical data that was collected during fieldwork in Ethiopia on the level of the PCs and Unions. The purpose was to explore different types of dividend payments –i.e. per financial share of the member or by ratio of use of the PC or Union- and the reasons for paying dividend or not. In this case study, cooperative leaders (Board members, managers) were interviewed, using their bookkeeping system to give more insights in their financial situation. Two questions were included that specifically asked for challenges for PCs and Unions regarding dividend payments. All but one PCs answered they did pay out dividend. Therefore, I did not quantitatively take into account determinants for paying out dividend on PC level in my analysis. Instead, I qualitatively analysed the answers board members gave on the questions about challenges.

I aimed at answering the second question by testing whether transactions and shares contribute to receiving dividend (as prescribed in the Proclamation for Cooperative Societies (Federal Negarit Gazeta, 1998)), running a regression of the amount of dividend received on the number of transactions and the number of shares. I also regressed the probability of receiving dividend on the number of transactions and shares and I used control variables to indicate significance and the strength of possible relations. I explain the data gathering for these individual variables in sub chapter 5.4.

4.2. Relation between receiving dividend and commitment

The second part of the data gathering consists of a survey that was held among farmer members of multipurpose cooperatives, asking about the amount of dividend they have received the past years and their commitment to the cooperative.

Within each PC I interviewed 10 members, meaning 50 farmers in each union, with a total of 150 farmers. In order to preclude omitted variable bias, I needed to be sure that individual farmers had no influence on the payment of dividends. Therefore, it was important that the farmers that filled in the survey, were not board members and that the members and PCs that I used in my sample were randomly selected.

Questions in the survey are mostly Likert scale-style questions. The questions are grouped in dimensions, all consisting of 5-8 questions, and mostly attributing to the variable "commitment". All these answers will get a value (1-5), ranging from "very uncommitted" to "very committed". However, some questions were formulated in a negative way, meaning they measure the least attributing value, and therefore will have to be re-ranked.

4.2.1. Variables

Most questions did contribute to measuring commitment. However, I decided to exclude some questions from the analysis, because of reasons mentioned below.

The question "I have an alternative to sell my outputs to another buyer" is not included in the factor analysis, as it is not adapted from Sloot's framework. It was used in the survey only to see whether alternatives were actually available, as the other questions would not make sense if there weren't.

"People switch suppliers too often" is also excluded from the dataset. This value does not necessarily contribute to commitment, because (dis)commitment of others does not make the respondent more or less committed. So, even though this variable was used in the survey, it will not be used in the analysis.

All other variables were tested for variance. To check whether there was variety in the answers to the different questions, I made a frequency histogram for each variable. These histograms show that for some variables, nearly all answers are the same. The statement "the PCs problems are not my problems" is removed from the analysis, because 143 people out of 149 answered they did not agree with that, indicating little variation. Also all other variables in which more than 80% of the respondents gave the same answer, have been deleted from the analysis, namely: "I easily switch among buyers", "I am continually on the lookout for alternative buyers", "I could easily become as attached to another organization as to this one", "I am concerned with the PC's future" and "I am willing to put in extra effort if that helps the PC".

I have generated two dummy variables considering whether the respondent received dividend. The variable 'received' stands for whether the respondent has ever, knowledgably, received dividend. This means that when the respondent answered 'I don't know', the dummy value is zero, meaning the respondent has never received dividend or does not know about receiving dividend. The value 1 in dummy variable 'received2' means the respondent has received dividend this year, by computing all values in the variable for the amount of dividend a respondent has received other than 0, as a dummy value 1.

I have also created a variable for whether a respondent answered to have shares, so only the answer 'yes' suffices. However, many people answered they did not know about having shares and therefore many values were missing for the variable number of shares. As indicated in the manual for cooperatives in Ethiopia (Federal Negarit Gazeta, 1998), every member of a cooperative should pay a membership fee and buy one share. This means that everybody has at least one share, and by creating a variable for the number of shares, assuming that everyone has at least one share, this is covered. People who don't know about having shares, or said they don't have any, didn't buy any more shares than the initial one, as (I assume) they would have known it then. Therefore, all missing values were replaced by the value 1.

Finally, I have created a dummy variable for literacy and for having any formal education, because the ordinal variable for level of education could not be used in the regression.

4.2.2. Procedure

For creating variables for commitment, I did a factor analysis to test which variables would load into which factor(s). I used all the variables that I extracted from Sloot's (2016) framework, and reversed the negatively asked questions in order to use the most suitable values. Principal Component Factor analysis is more appropriate than common factor analysis, as the primary objective of the factor analysis in this research is data reduction, instead of identifying the latent dimensions or constructs represented in the original variables (Hair et al., 2010). I have chosen for oblique rotation, because this method is most suited to obtain theoretically meaningful factors, as it is more realistic for these factors to be correlated than not to be correlated. Because of the sample size (150), factor loadings below 0.45 are considered to be insignificant (Hair et al., 2010). Therefore, only variables loading into factors with loadings higher than 0.45, are included in the factor.

To indicate whether relations could possibly exist, I explored for correlation between the factors and control variables. The correlation matrix that resulted, consists of Spearman's correlation tests for all variables used in the regressions later on. I have not chosen for a Pearson's correlation, because not all variables are nominal.

Afterwards, I did t-tests of the factors of commitment, trust and democracy, grouped by whether the respondents ever received dividend and also by whether they received dividend the past year. This could show whether paying out dividend makes a difference in the level of commitment, trust and perception of democracy of members. I used the one-sided p-value for the t-tests, because the hypothesis points towards more commitment from the people who have received dividend. All variables were first tested for equal variances. When variances were unequal, I controlled for that in the t-test.

The final step were regressions of the factors for commitment and trust on the variables for receiving dividend and control variables. A factor that may influence significance of tests in the regression, is correlation between answers given by members of the same PCs. As I interviewed 10 members of 15

PCs each, it is well possible that inherent differences between PCs lead to systematic different answers to the questions. ANOVA tests for the four factors with the variable PC, give significant results for affective commitment, transaction loyalty and effort, meaning that for those factors, differences between PCs are significant. Only self-assessment of loyalty is insignificant. Also for all control variables and the factors for trust and democracy, significant differences between PCs were found, except for control variables age and the number of years of membership of the particular PC. The amount of dividend received, significantly differs between PCs. Even answers to the questions whether respondents have received dividend last year, or ever, significantly differ between PCs. By clustering the data, Stata corrects for internal correlation between units within groups. This can be done both by adding the command ", cluster (PC)", so that the standard error will be adjusted for the differences between groups, or by making the dataset a "survey" dataset, including the command "svy:" before the regression. I tested both, and differences are so small (i.e. 0.0006 units of standard error difference on a standard error of 0.1826), I decided to use the cluster command and work with that one for the rest of the thesis. Even though the ANOVA did not indicate significant differences between members of different PCs regarding transaction loyalty, I decided to cluster the observations in this regression too, in order to make sure the regressions measure the same for all factors.

First, I ran a logit regression of the probability of receiving dividend on the number of transactions and the number of shares. I also included the control variables sex, age, literacy, whether someone had formal education, amount of land, whether they received training, the years of membership, the number of transactions, the number of shares and the distance to the PC. Only members from PCs that did pay to some, but not all of their members were included. For regressing the amount of dividend received on these same variables, I used Tobit regression, as nearly half of the respondents said they had not received dividend. Here, I only included members from PC that did pay dividend to at least some of their members.

I tested observations for leverage after doing the regressions, for I detected outliers previously. Even though some observations did show some leverage, excluding these observations did not change the regressions dramatically and therefore I did not exclude any variables from the regressions.

5. Results

This chapter aims at providing the answers to the research questions posed in the introduction of this thesis. First, I investigated the determinants of receiving dividend, to test the influence of transactions and shares on whether someone received dividend the past year, and how much.

Thereafter, I used these variables to test the influence of receiving dividend on member commitment. In order to do so, I ran a factor analysis, in which the factors contributing to commitment were distinguished. These factors were used for a correlation matrix, t-tests and finally a regression.

Table 5.1. presents the member characteristics of the members in the sample. Striking is the low number of women in the sample. However, given the low number of female members in most PCs, this number is still representative of the PC member population.

Table 5.1. Descriptive statistics of the sample

Member characteristics	value (N=149)
Sex	
Male	93.9%
Age	
Average:	45.2 years
Level of education	
Illiterate	40.7%
Had some form of formal education	41.3%
Distance to PC (walking)	
Average:	61.9 minutes
Ever received training?	
Yes	8.7%
Ever received dividend?	
Yes	70.8%
Received dividend the last year?	
Yes	54.4%

5.1. Determinants of receiving dividend

As noted before, the probability of receiving dividend is expected to be subject to whether the PC pays out dividend in general and also to specific member characteristics. From a combination of both surveys and interviews, I found that all (but one) PCs answered they did pay out dividend, yet many members have never received dividend, or at least not last year. This points toward a selection bias (Dutta, 2009) since all members should at least receive some dividend on the basis of that one share they are obliged to have. Another problem could be that boards of PCs face challenges regarding dividend payment, meaning there is no case of elite capture. In the following sub chapters I will elaborate on determinants of receiving dividend, both on PC and member level.

5.1.1. Determinants of receiving dividend on PC level

All but one PCs claimed to pay out dividend to their members. Table 5.2. presents the percentage of members who have received dividend past year, sorted per PC, showing that PCs that do pay dividend, do not always pay dividend to all their members. Even though only one PC was found not to pay dividend in the interviews, there are two PCs of which no member has received dividend the past year. This could be due to a small and unlucky sample, or because of incorrect recordkeeping by the PC, which has led us to believe they did pay out dividend whilst they actually do not.

Table 5.2. Dividend distribution per PC

PC number	Received dividend last year (%)
1	10%
2	10%
3	100%
4	40%
5	0%
6	70%
7	10%
8	90%
9	100%
10	44.4%
11	80%
12	0%
13	90%
14	90%
15	80%

Only two PCs have paid dividend to all the respondents, which means the others are in conflict with Ethiopian regulations, as all members should at least receive dividend for that one share they are obliged to have.

First, in the interviews with board members, all (but one) of them responded that they did pay out dividend, using the manual and Proclamation for Cooperative Societies (1998). The one PC that admitted not to pay out dividend told us that this was due to a negative balance. This is not to say the hypothesis that more profitability leads to more likeliness of paying dividends is true, since the number of PCs that did not pay out dividend is so small. It was therefore impossible to quantitatively assess determinants for not paying dividend on the PC level. Instead, I did a qualitative analysis of the challenges PCs face regarding paying out dividend. It has to be noted that the results presented here are not objective, but rather perceptions and opinions of PC leaders, supported with views of the Union's managers.

Some of the problems mentioned in the interviews are technical problems, such as: "some members send their non-member family members to claim for dividend" and "sometimes members forget to bring their book for record keeping". Also the fact that business transaction recording is done manually makes the bookkeeping vulnerable to mistakes.

Some PCs mention problems that are specific to the PC, such as being under loss because of construction work, or a failing system when internet is off. Since the latter is issued by the only PC we have spoken to that actually uses internet, this cannot be considered a general problem. Also delayed decisions by the management, because of absence of the vice-manager are a specific PC problem. However, it is well plausible that this problem arises in more PCs than the one that mentioned it.

The main problems that were mentioned are a knowledge gap and distrust by the members, which in turn was also often linked to this knowledge gap. Statements made during the interview, supporting these problems, are: “we have no trained manpower”, “we need training on how to conduct financial documents and dividend”, “members distrust the board due to low dividend payments, we think this has to do with their lack of understanding”, “members are not trained”, “we need additional training in record keeping”, “there is misunderstanding between the members and the board in relation to the amount of dividend that is paid”, “the difference in amount of Birr received from farmer to farmer, creates discomfort”, “the financial statement is not timely written” and “the major gap is auditing skills”. Here, two factors seem to be prominent: lack of skills of the board/management and communication (understanding) problems between board and members.

The last problem that was mentioned both by Union managers and PC managers is possible conflict between PCs and Unions. One PC noted that the management was fired due to this conflict and one Union said that conflict mostly comes up because of lack of potential of PC leaders. This could either or both indicate a problem in the capabilities of PC leaders, or power gaps between the Union and the PC.

5.1.2. Determinants of receiving dividend on member level

In this research, I assumed that receiving dividend is an exogenous variable. I did attempt to make the variable as exogenous as possible, by making sure the respondents were picked randomly and did not serve in the board so they could not influence dividend payment by the board. However, during the research, I felt like other factors than only the number of transactions and shares influenced the chances for individuals to receive dividend. Therefore I tested to what extent receiving dividend could be predicted by the number of transactions and shares one has in the PC.

I tested whether the number of shares and the number of transactions influence the probability of receiving dividend, which resulted in the first logit regression in table 5.2. This regression model shows insignificant relation between the number of transactions with the PC and the probability of receiving dividend, but the number of shares can predict whether someone received dividend. The model shows that someone with two shares is 1.25 times more likely to receive dividend than someone with one share. A change of one share changes the probability of receiving dividend with 1.25 times, assuming all other variables stay constant.

However, after including control variables, the regression still shows insignificant contribution of transactions, and also the control variables do not contribute to the probability of receiving dividend. Now the number of shares have lost their significance, but still the coefficient is very close to significant. As opposed to what is stated in the Ethiopian law, PCs do not seem to distribute dividend on the basis of transactions and only little on shares. These regressions do not show any other variables that do explain variation.

I also tested whether the number of shares and the number of transactions influenced the amount of dividend received. From the Tobit regression table of the amount of dividend received on the number of shares and the number of transactions could be concluded that the number of shares contributes significantly to the amount of dividend received. People who have one more share, are expected to receive 19.09 Birr dividend extra, based on the second Tobit regression and assuming all other variables stay equal.

Again, the number of transactions does not contribute significantly. Still there is no proof of patronage refund payment by the PCs, but there is an indication of dividend payment per share. Receiving

dividend on the basis of shares instead of transactions is expected to happen in IOFs, but not in cooperatives. In this case, users of the PC are shareholders, rather than patrons. This could lead to lower patronage by members, if people do not receive more for their products than by side selling, as transactions with the PC do not generate exclusive extra yields.

Table 5.3. Regression of receiving dividend on number of transactions and number of shares, including control variables

	Received dividend last year (1) (Logit) N=108	Received dividend last year (2) (Logit) N=108	Amount of dividend received in Birr (1) (Tobit) N=124 [A]	Amount of dividend received in Birr (2) (Tobit) N=124
Number of transactions	-0.023016	-0.0539455	0.7896542	0.2525713
	(0.03016)	(0.0341844)	(2.023263)	(2.081563)
Number of shares	1.246674*	1.150387	23.91538*	19.08976*
	(0.5419197)	(0.5902044)	(7.524958)	(8.150379)
Sex		-2.077648		-92.78237
		(1.277151)		(88.10106)
Age		-0.0223889		-0.0383614
		(0.0324019)		(2.395518)
Literacy		0.8338175		44.36665
		(0.6187529)		(51.08929)
Formal education		0.9105694		29.79739
		(0.6933565)		(51.51061)
Amount of Land		-0.1216831		4.656293
		(0.0768698)		(5.459452)
Received training		0.7923797		8.863931
		(0.9371522)		(65.92951)
Years of membership		0.0286102		1.336384
		(0.026281)		(1.848949)
Distance to PC		0.0063482		0.0004117
		(0.0053915)		(0.360161)
Constant	-1.209187	-1.152127	-19.47622	-92.10979
	(0.6252517)	(1.500929)	(23.19041)	(102.3238)

Note: A. 47 left-censored observations <=0; 1 right-censored observation >=1030 in Tobit models.

5.2. Relation between receiving dividend and commitment

In this sub chapter I aim at answering the second research question: Is there a relation between receiving dividend and member commitment in multipurpose cooperatives in Ethiopia.

5.2.1. Factor analysis

The outcome of the factor analysis, including the command for applying the Kaiser's criterion, were four factors, which are shown in table 5.3.

Table 5.4. Factor analysis for components of commitment

Variable (N=148)	Affective commitment	Transaction loyalty	Self-assessment loyalty	Effort	Uniqueness
I am loyal to my PC	0.7100	[B]	0.5741		0.0893
I am very committed to the relationship with my PC	0.7168		0.5901		0.0710
I have a strong sense of loyalty	0.6869		0.6310		0.0827
I am not very committed (-) [A]	0.7161		0.5011		0.2135
I have considered to terminate membership (-)			0.5430		0.5338
I would sell to this PC, even if another firm offers a better price.		0.7000			0.3417
Switching to another firm seems unethical		0.7639			0.1926
I have a sense of moral obligation to stay, because of loyal feelings	0.5016	0.7343			0.1996
People should be loyal to their PC	0.7955				0.2501
If there is an alternative to my PC, it would not feel right to leave	0.7624				0.2466
I am proud of my PC	0.9149				0.1560
Other members feel like family to me	0.8931				0.1628
I agree with the norms and values of this PC	0.7637				0.2600
I defend my PC when it is criticized	0.9307				0.1249
I do not enjoy talking about my PC (-)	0.8428				0.2862
The PC deserves my maximum effort to maintain	0.5500			0.5202	0.4156
I am willing to pay more for my inputs, temporarily, if that is better for the PC		0.6708			0.2853
I am not willing to receive a lower price for my products, temporarily, if that is better for the PC (-)		0.7337			0/3070
I am not willing to make long-term investments for the PC (-)				0.5241	0.5557
I am willing to dedicate people and resources for the sake of the PC.				0.4790	0.6709

Notes: A. (-) behind the sentence indicates that the Likert scale values for the answers are re-ordered, in order to positively measure commitment. B. Blanks in the table represent factor loadings lower than 0.45.

The dominant themes represented in the first factor are loyalty, self-assessment, beliefs, identification and personal feelings (Sloot, 2016). This does not easily fit into one of the classifications described in Sloot's framework, as they cover overlapping factors. From the classification provided by Meyer and Allen (1991), described in the theoretical framework, I would consider these questions to be measuring affective commitment. This is a broader classification, as this factor also included many variables. This factor would have fit into affective commitment even better when questions about loyalty self-assessment (also in the third factor) were not included. The fact that these questions load

into both factors could be an indication of misinterpretation of the word 'loyalty'. I will further discuss this in chapter Limitations (6.3).

The dominant theme represented in the second factor is transaction loyalty. All questions are about the consideration to still sell to the PC, even if it is less profitable than side selling.

All the questions in the third factor are adapted from 'loyalty- self assessment' in the framework of Sloot (2016). I therefore choose to name this factor loyalty self-assessment, in line with the framework. As opposed to the factor affective commitment, the variable "I have considered to terminate membership" is included in this factor, which makes this factor complete and more specific.

The fourth factor only consists of three questions. All three statements are about effort and feelings of responsibility towards the PC (Bijman and Verhees, 2011). Cechin et al. (2012) have defined this type of commitment, commitment to collective action. The name I will give to this factor is effort.

Besides the four factors of commitment, I also created factors for trust and democracy. The 5 statements in the survey that were intended for trust, all load into one factor. For democracy, I could generate two factors, presented in table 5.4.

Table 5.5. Factor analysis for democracy

Variable (N=147)	Democracy through voting	Confidence in the board	Uniqueness
I have insight into the PC's financial bookkeeping systems	[A]	0.8726	0.2366
I agree with the financial decisions made by the Board of my PC		0.8902	0.1811
I have confidence in the Board of my PC		0.6543	0.4673
I can vote in every important decision	0.8946		0.1959
My vote influences decision-making by the Board	0.9421		0.0881
I can influence my own economic benefits from the PC	0.9344		0.1082

Notes: A. Blanks in the table represent factor loadings lower than 0.45.

The three statements loading into the first factor are about democracy through voting, which is therefore the label I have chosen to give to this factor. The statements loading into the second factor are about the perceived credibility of the Board of the PC; therefore I name this factor confidence in the board.

5.2.2. Exploring for correlation

The final purpose of this results chapter is to do regressions of the factors for commitment on whether someone received dividend or the amount of dividend that is received (and control variables). To indicate whether relations could possibly exist, I explored for correlation between the factors and control variables.

Before making a correlation table, I first checked the control variables for outliers using scatter plots of affective commitment on the control variables. The variables sex, age, level of education and distance to PC did not have outliers. I have detected some outliers in the other variables (Appendix D1). However, I concluded that these values are not data entry errors (Appendix D1) and they are not from other populations than other respondents, so I have chosen not to remove them from the dataset. I

will have to keep in mind that there are outliers when doing the regression, so these variables will have to be checked for leverage in order to create a robust regression. For the t-tests and correlation table, these outliers will not be removed.

The correlation matrix can be found in Appendix D2 and includes Spearman correlation coefficients for the factors for commitment, trust and democracy, tested with the variables created for receiving dividend and the control variables.

The Spearman's test for correlation shows that affective commitment is significantly correlated with all variables for receiving dividend, indicating that there is a relationship between affective commitment and receiving dividend, no matter when this dividend is last received. The same relationships exist between trust and receiving dividend. Transaction loyalty seems to be more vulnerable to when dividend is received, as it is significantly correlated with the amount of dividend received and whether the respondent received dividend the last year. It is not significantly correlated with whether the respondent ever received dividend, which could point to a decreasing effect of receiving dividend on transaction loyalty over time.

The third factor, loyalty - self-assessment, is significantly correlated with both dummy variables for received dividend ever and – last year, but not with the amount of dividend received. For the self-assessment of loyalty it seems to be more important to receive dividend at all than how much dividend is really received: self-assessed loyalty does not get stronger when more dividend is received.

Effort is significantly correlated only with whether the respondent received dividend last year or not. The effect of dividend on effort does get weaker over time, but does not increase as more dividend is received.

Affective commitment, trust and confidence in the board correlate strongly with each other and also strongly to the same variables to the same extent. I have to take into account these relations when doing the regressions, as this might be a sign of multicollinearity.

5.2.3. T-tests

Table 5.6. shows t-tests of the factors of commitment, trust and democracy, grouped by whether respondents received dividend the past year or not. The groups represent the people who have not received dividend the past year and people who have, respectively. The p-value shown behind the t-test statistic, is a one sided p-value for the alternative hypothesis that the difference between mean (no dividend) and mean (dividend) is negative, meaning that the mean commitment, trust and confidence are higher in the group of people who have received dividend the past year than in the group of people who have not.

Table 5.6. T-test grouped by whether respondents received dividend last year

Factor	All (mean)	No dividend (mean)	Dividend (mean)	T-test
Affective commitment	$-3.44*10^{-9}$	-0.4468528	0.3798249	-5.2329***[B]
(N=148)	(0.0821995)[A]	(0.1425521)	(0.0680859)	
Transaction loyalty	$-9.00*10^{-10}$	-0.2291134	0.1947464	-2.6205**
(N=148)	(0.0821995)	(0.1207654)	(0.1081712)	
Loyalty- self assessment	$2.31*10^{-9}$	-0.1875325	0.1594026	-2.0911*
(N=148)	(0.0821995)	(0.1334091)	(0.0986364)	
Effort	$2.37*10^{-9}$	-0.1675566	0.1424231	-1.8442**
(N=148)	(0.0821995)	(0.1410316)	(0.0914456)	
Trust	$1.28*10^{-8}$	-0.300526	0.2554471	-3.4971***
(N=148)	(0.0821995)	(0.1184192)	(0.106549)	
Democracy through voting	$-1.20*10^{-9}$	-0.3040283	0.2546237	-3.3318***
(N=147)	(0.0824786)	(0.150625)	(0.0736637)	
Confidence in the Board	$-6.87*10^{-9}$	-0.377634	0.3162684	-4.4520***
(N=147)	(0.0824786)	(0.1093957)	(0.1093155)	

Notes: A. The numbers between brackets are the standard errors of the means. B. Test statistics indicated with one star (*) are significant on a 5% level, two stars (**) means significance at 1% level and three stars (***) significance at 0.1% level.

The table shows that all t-tests give significant results. This means that when someone has received dividend the last year, their commitment, trust and perception of democracy is significantly higher than of people who have not.

Table 5.7. shows t-tests of the factors of commitment, trust and democracy, grouped by whether the respondents ever received dividend. The groups represent the people who have never (knowingly) received dividend and the people who have, respectively. The p-value shown behind the t-test statistic, is a one sided p-value for the alternative hypothesis that the difference between mean (no dividend) and mean (dividend) is negative, meaning that the mean commitment, trust and confidence are higher in the group of people who ever received dividend than in the group of people who did not.

Table 5.7. T-test grouped by whether respondents ever received dividend

Factor	All (mean)	No dividend (mean)	Dividend (mean)	T-test
Affective commitment	$-3.44e^{-9}$	-0.5039697	0.2132179	-3.5770***[B]
(N=148)	(0.0821995)[A]	(0.1842844)	(0.0789937)	
Transaction loyalty	$-9.00e^{-10}$	-0.1744082	0.0737881	-1.3844
(N=148)	(0.0821995)	0.1660924)	(0.093127)	
Loyalty- self assessment	$2.31e^{-9}$	-0.274212	0.1160128	-1.9744*
(N=148)	(0.0821995)	(0.1769477)	(0.0880523)	
Commitment to collective action	2.37e-^{9}	-0.1444514	0.061114	-1.1442
(N=148)	(0.0821995)	(0.1558492)	(0.0964932)	
Trust	$1.28e^{-8}$	-0.5878773	0.2487173	-5.0202***
(N=148)	(0.0821995)	(0.1469894)	(0.0888068)	
Democracy through voting	$-1.20e^{-9}$	-0.0683506	0.0282603	-0.5316
(N=147)	(0.0824786)	(0.1564818)	(0.0973382)	
Confidence in the Board	$-6.87e^{-9}$	-0.7064679	0.2920973	-6.1667***
(N=147)	(0.0824786)	(0.1121051)	(0.0931607)	

Notes: A. The numbers between brackets are the standard errors of the means. B. Test statistics indicated with one star (*) are significant on a 5% level, two stars (**) means significance at 1% level and three stars (***) significance at 0.1% level.

Here, only two factors of commitment are significantly higher for respondents who have ever received dividend: affective commitment and self-assessment of loyalty. Also trust and the perception of credibility of the Board are significant. As opposed to grouping the variables by whether they received

dividend the last year; transaction loyalty, effort and perception of democracy through voting are not higher when people have ever received dividend. These are all factors related to actions, whereas the significant factors are more psychological. The difference between ever-received dividend and received dividend the past year is the aspect of time. Apparently, receiving dividend influences members' actions more in the short run than in the long run, which means that receiving dividend on a regular basis is necessary for staying actively committed. Psychological, ideological components of commitment are seemingly less vulnerable to the time aspect of receiving dividend. If someone has ever received dividend, this seems to have a long-term effect on his or her positive feelings towards the cooperative.

However, it is questionable whether these last results are really reliable. Instead of being more committed if someone has ever received dividend, the way people answer the question "have you ever received dividend" may differ between people who are intrinsically more committed and less committed. Non-committed people may think: "There are no benefits of being a member of this cooperative, I have never received dividend", whereas committed people may think: "PCs are obliged to give dividend, so I assume my PC does a good job: I must have received dividend". In this case, I have not measured whether they actually received dividend, but rather their perception of how well their PC complies with the regulations. This only applies to 'ever received dividend', as this question is more vague and therefore the relationship between whether someone received dividend last year and their commitment still holds, as well as the statement that regular dividend distribution is necessary for active commitment.

5.2.4. Regressions

The correlation matrix in Appendix D2 gives the Spearman correlation coefficients. The fact that I have chosen for a Spearman's correlation means that is it not shown that these variables are linearly correlated; they could as well be quadratic or logarithmically correlated. Therefore, I generated scatter plots of the seven factors on all control variables, to see whether the variables are linearly correlated, and could be included in the regressions without adjustments, such as quadratic terms. As far as the scatterplots show, there are no variables that need to be adjusted, as all variables that do correlate, correlate linearly.

The purpose of this thesis is to explore the contribution of dividend payment to commitment of members. Therefore, I ran regressions of the factors for commitment on whether someone received dividend last year, whether they ever received dividend and the amount of dividend received. Thereafter, also the control variables sex, age, literacy, whether someone had formal education, amount of land, whether they received training, the years of membership, the number of transactions, the number of shares and the distance to the PC are included. The tables in Appendix D3 show the outcomes of the regressions, also including the R^2 (goodness of the fit) of each model. I tested all regressions for multicollinearity, by computing their VIF. A VIF larger than 10 would indicate trouble, but all regressions had a VIF smaller than 2, which means there was no need for controlling. Table 5.8. shows an overview of these regressions.

Table 5.8. Regressions of factors for commitment on dividend payment

	Affective commitment	Transaction loyalty	Loyalty self-assessment	Effort	Trust
Received dividend last year					
No controls	0.8266778**[A]	0.4238598*	0.3469351	0.3099796	0.5559731*
	(0.264089)[B]	(0.1549044)	(0.1782863)	(0.2198748)	(0.2383144)
Controls [C]	0.5762691*	0.2877637	0.1220001	0.1693733	0.1594808
	(0.2015695)	(0.2009329)	(0.1787084)	(0.149564)	(0.2421501)
Ever received dividend					
No controls	0.7171876	0.2481963	0.3902248	0.2055654	0.8365947*
	(0.3397751)	(0.192108)	(0.2506908)	(0.1833059)	(0.2904696)
Controls	0.4032345	0.0951905	0.391563	0.0164037	0.3951754
	(0.2152212)	(0.1577711)	(0.1993404)	(0.2011685)	(0.324597)
Amount of dividend received					
No controls	0.0021645*	0.0011006*	0.0006836	0.0010281	0.0021633
	(0.0010105)	(0.0004371)	(0.000436)	(0.0006291)	(0.0010352)
Controls	0.0008907	0.0001974	0.0002541	0.0008392	0.0010004
	(0.0005553)	(0.0002653)	(0.0003398)	(0.0005581)	(0.0008783)

Note: A. Correlation coefficients indicated with one star (*) are significant on a 5% level, two stars (**) means significance at 1% level and three stars (***) significance at 0.1% level. B. The numbers between brackets, below the regression coefficients, are the standard errors of the coefficients. C. Control variables are: sex, age, literacy, whether someone had formal education, amount of land, whether someone received training, years of membership, number of transactions, number of shares, distance to the PC, democracy through voting and confidence in the board.

First, it is shown that whether someone received dividend the past year and the amount of dividend this person received, positively and significantly influence their affective commitment when no control variables are included. Whether someone ever received dividend has no contribution. However, including control variables and the factors for democracy, the only dividend variable that still significantly contributes to affective commitment is whether someone received dividend last year. The regression coefficient of 0.5762691, means that when someone received dividend last year, his/her factor score for affective commitment is expected to be 0.5762691 higher than for someone who has not, assuming all other variables are kept constant. The factor score for someone who received dividend the last year is more than half a standard deviation larger than for someone who has not (Appendix D4).

According to a scatterplot of the observed values on the predicted values, which shows a linear relationship, the model including dividend received last year and control variables is a good predictor of the true values for affective commitment. However, Ramsey's reset test for omitted variables indicates that the model does miss explanatory variables as the model explains only 45% of the variation.

Appendix D3.1. shows that both factors for democracy contribute significantly to affective commitment, no matter which dividend variable is used. This indicates that affective commitment is predicted by their perception of democracy in the PC more than by whether someone ever received dividend and the amount of dividend received, since the latter are not significant when democracy is included in the model.

Regressing transaction loyalty on whether someone received dividend last year, whether they ever received dividend and the amount of dividend, gives that, again, only the first and third contribute significantly. When control variables are included, all dividend variables are no longer significant.

This indicates that there is a contribution of receiving dividend on transaction loyalty, though very small, as this contribution is insignificant when controlling for other variables.

Regressing the self-assessment of loyalty on whether someone ever received dividend, whether they received dividend last year and the amount of dividend, shows that none of these variables contributes significantly. This means that receiving dividend does not influence someone's self-assessment of loyalty, in contrast to the outcomes of the t-test.

As opposed to the factors for dividend, the number of shares contribute significantly to someone's self-assessment of loyalty. It is likely that someone with more shares rates himself more committed. As explained in Chapter 4 Methods, the variable for the number of shares consists of many respondents not knowing they had shares. These people are all assumed to have one share, which means that people with more knowledge about their shares (and possibly about their PC) are also the ones to find themselves to be more committed.

Regressing effort on whether someone ever received dividend, whether they received dividend last year and the amount of dividend, shows that none of these variables contributes significantly. Also including the control variables does not show any significant result.

Trust regressed on the amount of Birr received shows an insignificant contribution. The other two variables: whether someone has received dividend the last year and whether they ever received dividend show significant contributions. The table including control variables shows that a member's perception of democracy and his/her number of shares contribute significantly to trust, whereas the other control variables and receiving dividend do not, meaning that trust is better predicted by one's perception of democracy and his/her number of shares than by whether this person received dividend.

Both in the models for affective commitment and trust, I found that democracy is a highly significant contributor. In all these models, both democracy through voting and confidence in the board are shown to have a stronger association with affective commitment and trust than receiving dividend does.

A striking result from these regressions is that affective commitment is the only factor that is so significantly affected by dividend payment, even when control variables are included. The hypothesis that monetary rewards would undermine psychological feelings of commitment through intrinsic motivations has to be rejected. The effect of dividends is positive and stronger on affective commitment than on the active types of commitment, such as effort and transaction loyalty. The finding that receiving dividend does not contribute significantly to transaction loyalty when control variables are included, is also in contrast with what I hypothesized. I would expect dividend to positively contribute to considerations about staying with the cooperative and willingness to receive lower prices, because it then serves as an economic incentive. The same holds for the effect of dividend on effort. I hypothesized people would be willing to invest more in the PC when they would be rewarded financially for it, but these non-existing relationships points to believing that these concerns are based upon moral feelings more than on monetary incentives.

It is evident that there are omitted variables in the models presented. Theoretically, I could not find any variables that would contribute more to commitment than the ones already used in this research. This drives me to concluding that commitment is also for a large part inherent to men. In Ethiopia, commitment and cooperation have large cultural value (Veerakumaran, 2007) and affective commitment may therefore be determined more socially than by incentives.

5.2.5. Comparison of regressions and t-tests

An interesting finding in the t-tests as opposed to the models is that, in the t-tests the contribution of received dividend the past year turns out to be significant for commitment, trust and democracy. In the regressions, this relationship seems to be much weaker and in some cases even disappeared. The presence of only a constant is in many cases enough for the significance to fade out and this effect increases by including control variables and by testing the contribution of democracy.

The effects of received dividend the past year on affective commitment remain significant, no matter which control variables are included. This indicates a stronger relationship between received dividends the past year and this variable than with the other factors of commitment. The same counts for trust, when democracy is not included. The fact that t-tests of democracy, grouped by whether someone received dividend the past year are significant, combined with the outcome that significance of the contribution of dividend on trust declines when democracy is included in the model, might point to the perception of democracy being the real contributing factor, which is increased by whether someone received dividend and in turn contributes to that person's trust.

The other t-test table includes tests grouped by ever-received dividend. Here, only the affective types of commitment, such as affective commitment, loyalty self-assessment, trust and perceived credibility of the board are influenced. The factors that are more about action, such as transaction loyalty, effort and democracy through voting, are not significantly changing when someone has ever received dividend. A possible explanation for this could be short-term versus long-term, as emotions are driven and formed in a longer term and actions could be based on recent incentives. This division is much less visible after the regressions, for some still significant, but others have lost significance after only including the constant.

A possible reason for the weak (but never negative) relationship between active commitment aspects and dividend payment, is that the existence of dividend means that the cooperative has earned money from business with members. This means that prices of services and products could be lower if the cooperative did business at cost. The higher prices farmers have to pay for their products, could lead to lower satisfaction and less loyalty to the cooperative; side selling becomes more attractive. This effect could even out the positive effect of receiving dividend on transaction loyalty and effort, especially when the benefits of membership are not clear. As was found in the first part of the research, dividends are paid by shares, rather than by transactions. Trade with the cooperative thus only has a benefit when prices in the PC are lower. If not, dividend payment to ratio of transactions is the only way transactions can be incentivized. When this is not done, active commitment is likely to be lower, as was also found in Chinese cooperatives (Clegg, 2006).

6. Conclusion

In this chapter the research questions will be answered (6.1.), leading to policy recommendations (6.2.). The limitations of the research will be discussed in section Limitations (6.3) and recommendations for further research will be given accordingly (6.4.).

6.1. Research questions

The main research question of this research is: What determines dividend distribution in Ethiopian multipurpose cooperatives and how does this affect their members' commitment? This question is divided into two questions, of which I will discuss the conclusions in the subchapters below.

6.1.1. What determines dividend distribution among members of multipurpose cooperatives in Ethiopia?

I aimed at answering this research question by investigating determinants of dividend distribution both at PC level and at members level. PCs are supposed to pay out dividend on the basis of shares and transactions, but during the research it became clear that more factors play a role in the distribution of profits. Even though all but one PCs claimed to follow the Proclamation for Cooperative Societies (1998) for their distribution structure, members did not receive dividend accordingly. Quantitative analysis on the influence of PC characteristics on the likelihood of paying dividend was impossible, as only two PCs was found that did not pay dividend. Qualitative analysis of the challenges PCs face related to paying dividend, gave insight in some technical challenges, which prevent detailed recording of business transaction. Also distrust by members, lack of understanding and a lack of financial skills within the board were prominent problems, all pointing towards a knowledge (and communication) gap, both within the board and among members.

I did succeed in analysing whether members received dividend according to the manual, on member level. Regressions of the probability of receiving dividend and the amount of dividend received on the number of shares and transactions and control variables, indicated that the number of shares play a role in the amount of dividend received and also the probability of receiving dividend, though less significant. In contrast with cooperative regulations in Ethiopia, the number of transactions did not influence this probability, nor the amount received. This is also in contrast with classical theories on cooperatives in Europe and the USA. This leads me to concluding that Ethiopian cooperatives are more like IOFs than Western cooperatives, in terms of their profit distribution.

6.1.2. Is there a relation between dividend payments and member commitment in multipurpose cooperatives in Ethiopia?

In order to answer this question, I first ran a factor analysis, which resulted in four aspects of commitment: affective commitment, transaction loyalty, self-assessment of loyalty and effort. I did the same for trust and democracy, leading to one factor for trust and two for democracy: democracy through voting and confidence in the Board.

The results of t-tests led me to making a division of two types of aspects: psychological and active aspects of commitment. The psychological aspects are: affective commitment, self-assessment of loyalty, trust and confidence in the Board. The active aspects are: transaction loyalty, effort and democracy through voting. The psychological aspects were sensitive to dividend payment, both in the long run and in the short run. However, the causality of the relation between ever-received dividend

and psychological commitment is questionable. As more committed members may perceive the answer to this vaguely asked question ('have you ever received dividend?') differently, commitment could also be the reason for thinking they have received dividend, instead of receiving dividend being the reason for commitment.

According to the t-tests, the active aspects of commitment were sensitive only to receiving dividend last year, not to ever-received dividend. From this I concluded that regular dividend payment is needed for stimulating active commitment.

The regressions showed much weaker relations, where only the relation between affective commitment and received dividend the last year was significant. This is in line with the hypothesis that dividend payment would lead to higher commitment, although only one aspect is found to be significant. The theory that dividend payment would undermine intrinsic motivation for commitment is rejected.

I conclude that cooperation is an important value in the Ethiopian culture, which explains high levels of commitment and weakens the role of dividend payment in the psychological aspects of commitment. I explained the weaker relation between active types of commitment and dividend payment by the effect profit-making has on cooperative members. Since dividend is the distribution of profits, the cooperative has done business with members against too high costs (either high input - or low output prices), instead of at cost. If members can expect dividends from transactions to compensate for these costs, this is not necessarily a problem, as this would also incentivize transactions. However, I also found that dividends were mostly not based on transactions, which means that members are neither incentivized to do business because of attractive prices, nor because of profit distribution.

6.2. Policy recommendations

I will base my recommendations both on the outcomes of the quantitative analysis and on the challenges mentioned by PC - and Union leaders.

Some of the problems, the technical inefficiencies, mentioned by the board members could be solved by awareness of members about the rules of paying out dividend, or by introducing a members' pass/book, which household heads could give to their significant others or their children to claim for dividend.

One important outcome of the study is that short-term benefits influence active member commitment. As noted by Sexton and Iskow (1988), long-term membership policy is important for the risk-reducing nature of the co-op. As cooperative leaders need to make decisions for the long-run perspective of the business, members need to have this perspective in relation to their membership too. Education and training about financial bookkeeping and benefits of membership would be needed for the members. Nevertheless, convincing members to accept lower dividends in order for the cooperative to grow, is only one side of the medal and also does not cover the problem that dividend payment is not in compliance with legislation in Ethiopian cooperatives.

As I discussed before, members are not incentivized to do business with the cooperatives, because profits are made over their transactions, but dividends are not distributed accordingly. Therefore I want to emphasize the importance of paying dividend per transaction. Paying dividend per share incentivizes investment in the cooperative, which could be useful, but is not the only thing that should be incentivized. If dividends are paid accurately and in relation to transactions, members are

incentivized to increase their patronage, and therefore this would increase the effect of dividend payment on member commitment.

Since an important outcome of the qualitative study was a knowledge gap both in the board and among members, it is not only necessary to inform members about dividend payment, but also to train board members. This way mutual understanding and confidence could be enhanced.

One thing that I did not investigate deeply and was also not part of my research, but did attract my attention, is the lack of security for farmers. Many farmers mentioned that they do not have the guarantee that the PC will buy all their products, because of over-supply. In addition, there were PC leaders who mentioned under-supply, leading to losses. Better record keeping of which farmer produces what, reduces the risk for farmers, which is an important benefit mentioned in cooperative literature.

6.3. Limitations

Even though I have tried to control for most problems beforehand, I have overlooked some factors in this research. Most points of discussion came forward during the research and could have only been controlled for if I had the knowledge before.

The framework that Sloot (2016) developed was based on Western cooperatives, for which the Crohnbach's alpha in all researches turned out to be good. However, Ethiopian farmers have very different perceptions of commitment. As came forward during this research, Amharic, the language in which the interviews were done, does not have different words for honesty, commitment and loyalty. Therefore, the self-assessment of commitment of the farmers I interviewed may be biased, as they could be more prone to assess themselves to be loyal, if to them this means they are honest. In addition to this, if farmers are first asked questions directly about their loyalty and thereafter indirectly about loyalty, they may sense that these questions measure the same things. Given the intuition that honesty is socially preferred over dishonesty, also these questions may lead to biased answers. Therefore I would recommend for the next time this framework is used, to change the order in which the questions are asked, preferably randomly.

Moreover, in all of the PCs I found very high levels of commitment as compared to an 'expected' average of 3 in a 5 point Likert scale survey. This may have influenced the significance of the regressions and points to either wrongly asked questions or a very high level of commitment in the sample I took from the Ethiopian population.

Many farmers answer that they are members of the PC because it offers the best service to the best price. However, the same farmers often answer that they sometimes prefer selling to traders, because their prices are higher. After checking with Lemi Gonfa (co-researcher) and these respondents, we found that initially they became a member because of promises of higher prices and better services, but that not every PC lives up to this. However, terminating membership does not make sense, as the price one pays for membership is only an initial membership fee and there are no further costs. This indicates that not all members we interviewed are active members, leading to high numbers of members without transactions.

When making the member characteristics table, I found that the number of people answering they are 40, 45 or 50 are much higher than other ages. This may be due to unknown birthdays and is therefore not fully reliable. Still, I think it must be a good predictor of their real ages and it also did not influence the main results considerably as age was not one of the main variables in my research.

As a Dutch student without experience in third world countries, I found it really hard to imagine how non-educated people would perceive the questions I asked them. For me it was hard to grasp that hypothetical questions, containing phrases like "what if…", could be hard to answer for some people as they do not represent real life situations. They are included in the survey, but we found that many people weren't able to respond to those kinds of questions. For example, "I am willing to make long-term investments for the sake of my PC" had to be explained to farmers as: "Imagine your PC wants to build a factory to process your outputs and sell them to the market. Would you be willing to invest in that?", followed by answers like: "They don't invest in factories, so I don't know". The misunderstanding of many questions by these farmers may lead to low validity of the measures. Notwithstanding, the factor analysis does show some pattern in the questions and their answers.

I found differences in the responses of people whom I asked for an interview. In Ras Gayint Union, every single person we approached was willing to participate. In Merkeb Union the participation rate was much lower, as many people, especially women and elderly people refused to participate. The influence this has on the results is unclear, as people may have different motives to participate. Either they are very positive and have no problems talking about their PC, or they are very negative and wish to complain, hoping we can do something about it. A reason for not participating could be a lack of confidence in researchers at all. Also shame (about low numbers of production or lack of knowledge) could be an explanatory factor for not participating. One woman we approached said to us: "I know about giving birth to children and raising them, that's all. Don't ask me about the PC". Another explanation could be sensitivity to politics, as PCs are often considered to be political organizations and also because we might have the intention to use the surveys to meet political ends.

Attribution of respondents by picking names from a list of members randomly, would have been a better method in terms of randomness of the sample and representativeness to the population. However, almost no member was in possession of a phone or other communication medium and houses did not have numbers. Therefore, the only way we could find people was to just go to *kebeles* and interview random people in their houses or on their land. We also interviewed some people at the PC (out of sight of management and Board), and kept track of which farmer lived where. This is not completely random, as it implies that the respondents had to be at home, or in their *kebele* or at the PC.

A question that arose during the analysis is whether a dummy variable could be the only independent variable. I would argue that using a dummy variable as a predictor for a nominal variable could never explain variation fully, as there are then only two possible outcome values. Therefore, it is questionable whether the regressions using dummy variables as the only dependent variables really make sense, i.e. the regressions of commitment on whether someone ever received dividend or whether someone received dividend last year. The regressions including control variables could be much more useful. For this reason, main conclusions were only drawn on the basis of regressions with control variables.

6.4. Recommendations for further research

For the sake of Ethiopian cooperatives, it would be useful to do a more in-depth analysis of financial structures, in order to be able to improve the competences of cooperative leaders. This is important since training and education about dividend are desired. This could be done by using data about transactions and shares more thoroughly.

If one is interested in commitment in Ethiopian cooperatives, more than in the financial structures, it would be useful to develop a commitment framework that is more suitable to Ethiopian farmers, as

now commitment levels turned out to be very high. For example, easier questions should be asked, but also the role of the government should be emphasized. The framework should also be made more suitable for multipurpose cooperatives, clearly distinguishing questions about suppliers and buyers.

It would be interesting to research the effect of democracy more intensively, as this was the only control variable that seemed to have a dominant effect. Democracy could serve as a mediator between receiving dividend and commitment, but could also be a moderator, affecting commitment independently. Also the role of corruption (elite capture) in dividend payment by PCs should then be discussed. As this was not the main purpose of this research, I could not argue about causal relations. Besides, more should be asked about confidence in the board, voting and perhaps corruption in order to have a deeper understanding of democracy in Ethiopian cooperatives. It would then also be interesting to use a more experimental design or do a longitudinal study of certain cooperatives.

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Appendix

A Survey farmers

Date (Gregorian calendar): _____

Member of PC: _____

Survey

Member characteristics

1. Sex
   - □ Male
   - □ Female

2. Age:_____

3. Highest educational attainment
   - □ no formal education, illiterate
   - □ no formal education, but literate
   - □ completed grade 1-8
   - □ completed grade 9-12
   - □ college diploma holder
   - □ university degree

4. How much land do you own? _____ timad

5. Please fill in the table below. Which crops have you produced last year and how much? And also, how much of this crop have you sold to the PC (in %)?

Crop	**Tick if produced**	**Total production of crop (in quintal)**	**Total quantity sold to market (in quintal)**	**Total quantity sold to PC (in quintal)**
Sesame				
Wheat				
Malt barley				
Food barley				
Pulses				

Cotton				
Teff				
Niger seed				
Maize				
Finger millet				
Potato				
Sorghum				
Other, namely _____				

6. How much livestock do you own?

Type of animal	Tick if owned	Number of animals
Oxen/bulls		
Cows		
Heifers		
Calves		
Sheep/ Goat		
Donkeys		
Poultry		
Horses/Mules		
Other, namely _____		

7. How long have you been a member of this particular PC? _____ years

8. What is your role in the PC?
   - □ Common member
   - □ Board member
   - □ Control committee

- ☐ Credit committee
- ☐ Education and training committee
- ☐ Other, namely _____

9. Have you ever received training from the PC?
   - ☐ Yes
   - ☐ No

10. Do you have any shares in the PC? (If yes, how many?)
    - ☐ Yes, _____ shares
    - ☐ No

11. How do you get to your PC?
    - ☐ Walking
    - ☐ By car
    - ☐ By moped
    - ☐ Other, namely _____

12. What is the distance to your PC? _____ minutes

(Trechter, King and Walsh, 2002:22)

<u>PC characteristics</u>

1. What services does your PC provide? (You can tick more boxes)
   - ☐ Inputs provision
   - ☐ Output marketing
   - ☐ Information provision
   - ☐ Credit provision
   - ☐ Output processing
   - ☐ Other, namely _____

2. What services do you use from your PC? (You can tick more boxes)
   - ☐ Inputs provision
   - ☐ Output marketing
   - ☐ Information provision
   - ☐ Credit provision
   - ☐ Output processing
   - ☐ None
   - ☐ Other, namely _____

3. Has your PC been profitable the last year?

- Yes
- No
- I don't know

Dividend

1. Have you ever received dividend?
   - Yes
   - No
   - I don't know

2. The dividend is paid out:
   - Annually
   - Monthly
   - Other, namely _____
   - I don't know

3. How often have you received dividend? _____ times

4. Do you receive dividend per share amounts and duration in the PC?
   - Yes
   - No
   - I don't know

5. Do you receive dividend per transaction with the PC?
   - Yes
   - No
   - I don't know

6. How much dividend have you received the past year? _____ Birr

Democracy (Cechin et al., 2012: 49)

1. How often a year is a General Members Meeting organized by the PC? _____ times

2. How often have you attended a General Members Meeting the last year? _____ times

3. How often have family members attended General Members Meetings? _____ times

I am now going to read you some statements. Please answer whether you agree with this statement or not. 1 means that you strongly disagree, 2 means you disagree, 3 means you are neutral, 4 means you agree and 5 means you strongly disagree.

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree to the following statements:	**1**	**2**	**3**	**4**	**5**
1	I have insight into the PC's financial bookkeeping system					
2	I agree with the financial decisions made by the Board of my PC					
3	I have confidence in the Board of my PC					
4	I can vote in every important decision					
5	I will vote, when I get the opportunity					
6	My vote influences decision-making by the Board					
7	I can influence my own economic benefits from the PC					
8	The government is very much involved in the PC's decision-making process					

<u>Commitment, adapted from framework Sloot (2016)</u>

➔ Loyalty – self assessment

Likert scale:

2. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements	**1**	**2**	**3**	**4**	**5**
1	I am loyal to my PC					
2	I am very committed to the relationship with my PC					
3	I have a strong sense of loyalty					
4	I am **not** very committed					
5	I have considered to terminate membership of my PC					

➔ Loyalty – alternatives (also: imperative commitment)

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements	**1**	**2**	**3**	**4**	**5**
1	I have an alternative to sell my outputs to another buyer					
2	I easily switch among buyers					
3	I am continually on the lookout for alternative buyers					
4	I could easily become as attached to another organization as to this one					
5	I would sell to this PC, even if another firm offers a better price					

➔ Loyalty – beliefs (normative commitment)

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements:	**1**	**2**	**3**	**4**	**5**
1	Switching to another firm seems unethical					
2	I have a sense of moral obligation to stay because of loyal feelings					
3	People switch suppliers too often					
4	People should be loyal to their PC					
5	If there is an alternative to my PC, it would **not** feel right to leave					

➔ Identification – personal feelings

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree to the following statements:	**1**	**2**	**3**	**4**	**5**
1	I am proud of my PC					

2	Other PC members feel like family to me					
3	I agree with the norms an values of this PC					
4	I defend my PC when it is criticized					
5	I do **not** enjoy talking about my PC					

→ Identification – involvement

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements:	**1**	**2**	**3**	**4**	**5**
1	The PC's problems are **not** my problems					
2	I am concerned with the PC's future					
3	The PC deserves my maximum effort to maintain					

➔ Effort – Investing resources

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements	**1**	**2**	**3**	**4**	**5**
1	I am willing to pay more for my inputs, temporarily, if that is better for the PC					
2	I am **not** willing to receive a lower price for my products, temporarily, if that is better for the PC					
3	I am willing to put in extra effort if that helps the PC					
4	I am **not** willing to make long-term investments for the PC					
5	I am willing to dedicate people and resources for the sake of the PC					

<u>Economic determinants of loyalty (adapted from 'customer loyalty' and 'NCR questionnaire' in Sloot (2016))</u>

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements:	**1**	**2**	**3**	**4**	**5**
1	I am a member of this PC because it provides the best service for me					
2	I am a member of this PC because it gives me the best price					
3	It would cost a lot of money to switch					
4	It would **not** take a lot of effort to switch					
5	It would bring technological problems if I had to switch					
6	When I leave this PC, I will lose particular rights					

What are particular advantages the PC offers you?

_____

_____

_____

What advantages do you think the PC should offer you to distinguish you from non-members?

_____

_____

_____

<u>Communication (determinant)</u>

Which medium is used by your PC to communicate to you, and how many times a month do you receive information through this medium?

Medium	**Tick box if used**	**Number of times a month**
E-mail		
Phone		
Letter		
Word of mouth		
Information board at PC		

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements:	**1**	**2**	**3**	**4**	**5**
1	I am satisfied with the current way I receive information from my PC					

Trust (determinant) (adapted from: Coote, Forrest and Tam 2003)

Likert scale:

1. **Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, 5. Strongly agree**

	Indicate how much you agree with the following statements:	**1**	**2**	**3**	**4**	**5**
1	The board is honest					
2	Promises made by the board are reliable					
3	The board is open in dealing with me					
4	I have **no** confidence in the board					
5	The board has a high degree of integrity					

B Structured interview PCs

Date (Gregorian calendar): _____

Structured interview - PCs

1. Name of PC: _____
2. Name of Union: _____
3. Role of interviewee in PC: _____
4. When is this PC established? _____
5. How many members does this PC have? _____
6. What is the average age of members? _____ years
7. What percentage of the members is female? _____ %
8. Are all members farmers?
   - ☐ Yes
   - ☐ No, only _____ %
9. What services does your PC provide? (You can tick more boxes)
   - ☐ Inputs provision
   - ☐ Output marketing
   - ☐ Information provision
   - ☐ Credit provision
   - ☐ Output processing
   - ☐ Other, namely _____
10. In which products does this PC do business? Please fill in the following table:

Crop	**Tick if PC does business**
Sesame	
Wheat	
Malt barley	
Food barley	

Pulses	
Cotton	
Teff	
Niger seed	
Maize	
Finger millet	
Potato	
Sorghum	
Other, namely _____	

11. Does the PC also do business with non-members?
    - ☐ Yes
    - ☐ No, go to question 14

12. Which share of the business is non-member business? _____ %

13. Does this PC do business in other products with members than non-members? (Explain qualitatively)
    _____
    _____
    _____
    _____

14. Please fill in the characteristics of each Board member in the following table:

Member	Age	Sex (M/F)	Education level 1= No formal education, illiterate 2= No formal education, but literate 3= Completed grade 1-8 4= Completed grade 9-12 5= College diploma holder 6= University degree
# 1 Chair			
# 2 Secretary			
# 3 Member			

# 4 Member			
# 5 Member			
# 6 Member			
# 7 Member			

15. What is the revenue (sales volume) of this PC last fiscal year? _____ Birr

16. How much capital (including assets) does this PC have? _____ Birr

17. What is the Return on Assets of this PC last fiscal year? _____

18. Has this PC been profitable the last fiscal year?
    - ☐ Yes
    - ☐ No

19. Has this PC paid out dividend to its members last fiscal year?
    - ☐ Yes
    - ☐ No, go to question 23

20. What are reasons for paying dividend? (explain qualitatively)
    _____
    _____
    _____
    _____
    _____

21. What percentage of distributable profit is paid as dividend? _____ %

22. How is this dividend distributed? Please fill in the following table:

		% of dividend	
Years		2014	2015
	For members by participation		
	For members by quantity of equity and duration with the PC		

	For expansion of the operations of the PC		
	For social services		
	Total	100	100

23. What are reasons for not paying dividend? (explain qualitatively)

_____
_____
_____
_____
_____

24. What are challenges for the PC in relation to dividend payment?

_____
_____
_____
_____

25. What are challenges for the PC in relation to business transaction recording?

_____
_____
_____

Thank you for filling in this survey and contributing to our research.

C Structured interviews Unions

Date (Gregorian calendar): _____

Structured interview - UNIONs

26. Name of UNION: _____

27. Role of interviewee in UNION: _____

28. When is this UNION established? _____

29. How many members does this UNION have? _____

30. What is the average age of members? _____ years

31. What percentage of members are female? _____ %

32. Are all members farmers?
    - ☐ Yes
    - ☐ No, only _____ %

33. What services does your UNION provide? (You can tick more boxes)
    - ☐ Inputs provision
    - ☐ Output marketing
    - ☐ Information provision
    - ☐ Credit provision
    - ☐ Output processing
    - ☐ Other, namely _____

34. In which products does this UNION do business? Please fill in the following table:

Crop	**Tick if PC does business**
Sesame	
Wheat	
Malt barley	
Food barley	
Pulses	
Cotton	
Teff	

Niger seed	
Maize	
Finger millet	
Potato	
Sorghum	
Other, namely _____	

35. Does the UNION also do business with non-members?
    - ☐ Yes
    - ☐ No, go to question 13

36. Which share of the business is non-member business? _____ %

37. Does this UNION do business in other products with members than non-members? (Explain qualitatively)
    _____
    _____
    _____
    _____

38. Please fill in the characteristics of each Board member in the following table:

Member	Age	Sex (M/F)	Education level 1 = No education 2= Primary education (up to grade 6) 3 = High school (up to grade 12) 4 = University
# 1 Chair			
# 2 Secretary			
# 3 Member			
# 4 Member			
# 5 Member			
# 6 Member			
# 7 Member			

39. What is the revenue (sales volume) of this UNION last fiscal year? _____ Birr

40. How much capital (including assets) does this UNION have? _____ Birr

41. What is the Return on Assets of this UNION last fiscal year? _____

42. Has this UNION been profitable the last fiscal year?
    - ☐ Yes
    - ☐ No

43. Has this UNION paid out dividend to its member PCs last fiscal year?
    - ☐ Yes
    - ☐ No, go to question 22

44. What are reasons for paying dividend? (qualitative)

    _____
    _____
    _____
    _____
    _____

45. What percentage of distributable profit is paid as dividend? _____ %

46. How is this dividend distributed? Please fill in the following table:

		% of dividend	
Years		2014	2015
	For members by participation		
	For members by quantity of equity and duration with the UNION		
	For expansion of the operations of the UNION		
	For social services		
	Total	100	100

47. What are reasons for not paying dividend?

_____
_____
_____
_____
_____

48. What are challenges for the UNION in relation to dividend payment?

_____
_____
_____
_____

49. What are challenges for the UNION in relation to business transaction recording?

_____
_____
_____

Thank you for filling in this survey and contributing to our research.

D Raw data

D 1. Outliers

The variable Land did have an outlier, namely one respondent (ID. 50) had 20 timad of land, whereas the other farmers had a maximum land size of 10 timad. The mean value is 4.79 and the standard deviation is 3.48. The variable transaction had one outlier (ID. 74), selling 80 quintile of crops to the PC, whereas the maximum of the other respondents was only a little more than 40 quintile and the mean 3.43, with a standard deviation of 9.2. The variable for the number of shares also has one outlier (ID. 146), with a value of 23, where the mean is 2.58 and the standard deviation 3.42. The variable for the amount of Birr received as dividend has one outlier (ID. 104), namely 1030 Birr, where the mean is 63.46 and the standard deviation 125.88.

I am quite sure these outliers are no data entry errors, since we have checked them during the interview. The outlier for transactions is a merchant, who is farmer, but also buys from neighbours in order to sell the products to the PC again. The amount of Birr received and number of shares are still quite high, but we did check whether they knew what they were talking about, and they seemed to do so.

D 2. Correlation matrix

	Affective commitment	Switching and price concerns	Loyalty – self assessment	Commitment to collective action	Trust	Democracy - voting	Confidence in Board	Sex	Age	Amount of land (timad)	Level of education	Distance to PC	Received training	Number of shares	Number of transaction	Amount of dividend received (Birr)	Ever received dividend	Received dividend the past year
Affective commitment	1.000																	
Switching and price concerns	0.0320	1.000																
Loyalty – self assessment	0.0231	0.0163	1.000															
Commitment to collective action	0.1724**	-0.0860	0.0458	1.000														
Trust	0.2546*	0.0297	-0.0551	0.0053	1.000													
Democracy - voting	0.2459*	0.1674*	0.1293	0.0189	0.1160	1.000												
Confidence in board	0.2637*	0.1474	0.0528	0.1171	0.4915*	-0.3182*	1.000											
Sex	0.0774	0.0864	-0.0751	-0.0879	-0.0148	0.0339	-0.0309	1.000										
Age	0.0768	0.0939	-0.1718*	-0.0917	-0.0475	0.1168	-0.0872	-0.0151	1.000									
Amount of Land (timad)	-0.1737*	-0.0542	-0.2447*	-0.1657*	-0.0576	0.0176	-0.0746	-0.0121	0.5134*	1.000								
Level of education	0.0103	0.2210*	0.0606	0.0978	-0.0478	-0.1098	0.1612	-0.2034*	-0.3860*	-0.3489*	1.000							
Distance to PC	-0.1103	-0.0693	-0.1737*	-0.0608	-0.0051	0.0267	-0.1652	0.0769	0.0026	0.2744*	-0.2218*	1.000						
Received training	0.0995	0.2309*	0.0507	-0.0250	0.0113	0.0125	0.1331	0.0351	0.1504	-0.0107	0.0069	-0.0923	1.000					
Number of shares	0.2751*	0.1334	0.0976	0.1031	0.1882*	-0.0833	0.3113*	-0.0984	0.0413	0.0973	0.1451	0.0638	0.1670*	1.000				
Number of transactions	0.0449	0.2267*	-0.0640	-0.1046	0.1557	-0.0757	0.2447*	-0.0027	0.1049	0.1441	0.0738	-0.1064	0.0976	0.1345	1.000			
Amount of dividend received (birr)	0.4612*	0.2624*	0.1029	0.1549	0.3854*	0.1401	0.4233*	-0.1072	-0.0108	-0.0818	0.1916*	0.0144	0.1147	0.4377*	0.2045*	1.000		
Ever received dividend	0.3209*	0.1432	0.1794*	0.1252	0.3756*	-0.0639	0.4580*	-0.0455	-0.0033	-0.1569	0.1052	-0.0509	0.0274	0.02923*	0.1613	0.6015*	1.000	
Received dividend the past year	0.4314*	0.2761*	0.1701*	0.1974*	0.3204*	0.1334	0.3583*	-0.1350	-0.1085	0.2677*	0.2677*	0.0372	0.0866	0.3765	0.0707	0.9156*	0.6417*	1.000

Note: A. coefficients indicated with a (*) are significant on a 5% significance level.

D 3. Models of regressions commitment on dividend payment

Table D 3.1. Regressions of affective commitment on receiving dividend and control variables

	Affective commitment (1) N=148 (R^2=0.1709)	Affective commitment (2) N=148 (R^2=0.1082)	Affective commitment (3) N=145 (R^2=0.0719)	Affective commitment (4) N=145 (R^2=0.4499)	Affective commitment (5) N=145 (R^2=0.4155)	Affective commitment (6) N=142 (R^2=0.4013)
Received dividend last year	0.8266778**[A] (0.264089)[B]			0.5762691* (0.2015695)		
Ever received dividend		0.7171876 (0.3397751)			0.4032345 (0.2152212)	
Amount of dividend received			0.0021645* (0.0010105)			0.0008907 (0.0005553)
Sex				0.5222302* (0.202653)	0.536453* (0.2227746)	0.4032235 (0.2165955)
Age				0.0231617* (0.0078693)	0.0227487** (0.0073176)	0.0215855* (0.0072046)
Literacy				-0.6482338** (0.1765306)	-0.5407686** (0.1658612)	-0.5963624* (0.2039207)
Formal education				0.4585665** (0.1509583)	0.4470682* (0.1642912)	0.5104871* (0.1758284)
Amount of land				-0.0267203 (0.0174814)	-0.0273072 (0.0173212)	-0.0370785 (0.0215499)
Received training				0.1385174 (0.0902525)	0.1513779 (0.0884964)	0.1802228 (0.0877358)
Years of membership				-0.008745 (0.0053946)	-0.0113351 (0.0068038)	-0.0096613 (0.0059202)
Number of transactions				-0.0014676 (0.0046007)	-0.0012269 (0.0052105)	-0.0021476 (0.0051769)
Number of shares				-0.0224915 (0.0229182)	-0.009723 (0.0262265)	-0.0214292 (0.0261441)
Distance to PC				-0.002065 (0.0013256)	-0.0014705 (0.0013715)	-0.0012274 (0.001434)
Democracy through voting				0.2850533** (0.0671869)	0.3592536*** (0.0614791)	0.3566354*** (0.0581325)
Confidence in the board				0.2625369** (0.0758765)	0.2682528** (0.0794544)	0.3222342** (0.0858909)
Constant	-0.4468528 (0.2532738)	-0.5039697 (0.3397751)	-0.1341484 (0.2142015)	-0.741263 (0.3700138)	-0.758376* (0.3218843)	-0.4493364 (0.3442174)

Note: A. Correlation coefficients indicated with one star (*) are significant on a 5% level, two stars (**) means significance at 1% level and three stars (***) significance at 0.1% level. B. The numbers between brackets, below the regression coefficients, are the standard errors of the coefficients.

Table D 3.2. Regressions of transaction loyalty on receiving dividend and control variables

	Transaction loyalty (1) N=148 (R^2=0.0449)	Transaction loyalty (2) N=148 (R^2=0.0130)	Transaction loyalty (3) N=145 (R^2=0.0188)	Transaction loyalty (4) N=145 (R^2=0.2391)	Transaction loyalty (5) N=145 (R^2=0.2249)	Transaction loyalty (6) N=142 (R^2=0.2455)
Received dividend last year	0.4238598*			0.2877637		
	(0.1549044)			(0.2009329)		
Ever received dividend		0.2481963			0.0951905	
		(0.192108)			(0.1577711)	
Amount of dividend received			0.0011006*			0.0001974
			(0.0004371)			(0.0002653)
Sex				0.6376869	0.6295618	0.4498145
				(0.3432123)	(0.357121)	(0.3703596)
Age				-0.0027623	-0.0025521	-0.0052607
				(0.0144465)	(0.0150932)	(0.014492)
Literacy				0.3636619	0.4052964*	0.4381022*
				(0.193285)	(0.1838872)	(0.2011282)
Formal education				0.1665	0.1770824	0.1648332
				(0.1480125)	(0.1480529)	(0.16068)
Amount of land				-0.0128876	-0.0151554	-0.0141187
				(0.0208702)	(0.0221067)	(0.0230419)
Received training				0.4252466	0.4243072	0.5318636
				(0.2944427)	(0.2867282)	(0.2687016)
Years of membership				0.0246559*	0.0235655	0.0247826*
				(0.0111827)	(0.0116951)	(0.0111866)
Number of transactions				0.0225098*	0.0223025*	0.0260615***
				(0.0079188)	(0.0077887)	(0.0052919)
Number of shares				-0.0073384	-0.000489	-0.0091395
				(0.0218303)	(0.0210116)	(0.0192652)
Distance to PC				0.0007805	0.0010904	0.0014174
				(0.0015411)	(0.001577)	(0.0015807)
Democracy through voting				0.103551	0.1414788	0.1738955
				(0.0735875)	(0.072759)	(0.078629)
Confidence in the board				-0.0195345	0.0055163	0.014545
				(0.0907979)	(0.0891697)	(0.0808348)
Constant	-0.2291134	-0.1744082	-0.0679475	-0.9232367*	-0.8690286*	-0.7483533
	(0.1377132)	(0.181191)	(0.1232375)	(0.3811756)	(0.3655746)	(0.4242779)

Table D 3.3. Regressions of loyalty self-assessment on receiving dividend and control variables

	Loyalty self-assessment (1) N=148 (R^2=0.0301)	Loyalty self-assessment (2) N=148 (R^2=0.0320)	Loyalty self-assessment (3) N=145 (R^2=0.0075)	Loyalty self-assessment (4) N=145 (R^2=0.1857)	Loyalty self-assessment (5) N=145 (R^2=0.2069)	Loyalty self-assessment (6) N=142 (R^2=0.2101)
Received dividend last year	0.3469351			0.1220001		
	(0.1782863)			(0.1787084)		
Ever received dividend		0.3902248			0.391563	
		(0.2506908)			(0.1993404)	
Amount of dividend received			0.0006836			0.0002541
			(0.000436)			(0.0003398)
Sex				-0.6514571	-0.6045291	-0.528956
				(0.3398482)	(0.3066647)	(0.3701895)
Age				-0.0043451	-0.0056334	-0.0064074
				(0.0113796)	(0.0113323)	(0.0098987)
Literacy				-0.0516249	0.0058185	-0.0566869
				(0.1966938)	(0.2128939)	(0.2059614)
Formal education				-0.0995836	-0.1490982	-0.0923159
				(0.2668438)	(0.2574802)	(0.2547939)
Amount of land				-0.0495739	-0.0440028	-0.0565254
				(0.0242308)	(0.0217953)	(0.0288069)
Received training				-0.3033896	-0.279247	-0.0717627
				(0.3623182)	(0.0172592)	(0.2034841)
Years of membership				-0.0050011	-0.0061349	-0.0069113
				(0.0078191)	(0.0073792)	(0.0073558)
Number of transactions				0.0129293	0.0139247	0.0218922*
				(0.0164815)	(0.0172592)	(0.0086815)
Number of shares				0.0746651**	0.0760029**	0.0644404*
				(0.0217263)	(0.0213667)	(0.0270899)
Distance to PC				-0.0017188	-0.001635	-0.0015998
				(0.0012552)	(0.0012139)	(0.0014129)
Democracy through voting				0.2539256	0.2671098	0.2670544
				(0.1489157)	(0.1435714)	(0.1492306)
Confidence in the board				-0.0538356	-0.1166422	-0.0475004
				(0.0780141)	(0.0787345)	(0.089929)
Constant	-0.1875325	-0.274212	-0.0133732	0.5504563	0.3658465	0.7474648
	(0.166866)	(0.2247199)	(0.1145765)	(0.4470085)	(0.4228614)	(0.3482567)

Table D 3.4. Regressions of effort on receiving dividend and control variables

	Effort (1) N=148 (R^2=0.0240)	Effort (2) N=148 (R^2=0.0089)	Effort (3) N=145 (R^2=0.0162)	Effort (4) N=145 (R^2=0.0638)	Effort (5) N=145 (R^2=0.0587)	Effort (6) N=142 (R^2=0.0683)
Received dividend last year	0.3099796			0.1693733		
	(0.2198748)			(0.149564)		
Ever received dividend		0.2055654			0.0164037	
		(0.1833059)			(0.2011685)	
Amount of dividend received			0.0010281			0.0008392
			(0.0006291)			(0.0005581)
Sex				-0.4014324	-0.4118979	-0.467745
				(0.2774184)	(0.1783085)	(0.2936476)
Age				-0.0027168	-0.0024377	-0.0038197
				(0.0089755)	(0.0089004)	(0.0081192)
Literacy				-0.0780253	-0.0580093	-0.0595051
				(0.2164484)	(0.2302189)	(0.2356498)
Formal education				0.1525019	0.1648231	0.1596916
				(0.2368378)	(0.2346247)	(0.2415978)
Amount of land				-0.0395037	-0.0415756	-0.0426506
				(0.0252479)	(0.024327)	(0.0247015)
Received training				-0.1246404	-0.1278445	-0.167721
				(0.3130167)	(0.3193938)	(0.3263421)
Years of membership				0.0059866	0.0054206	0.0061868
				(0.0073467)	(0.0070513)	(0.0070495)
Number of transactions				-0.002458	-0.0027023	-0.0060153
				(0.0068345)	(0.0067065)	(0.0086386)
Number of shares				0.0148002	0.0190084	0.0112642
				(0.0279052)	(0.0313499)	(0.0272385)
Distance to PC				-0.0004225	-0.0002353	-0.0000962
				(0.0015735)	(0.001513)	(0.0015107)
Democracy through voting				0.046856	0.0695084	0.0569205
				(0.2274188)	(0.2384465)	(0.2453948)
Confidence in the board				0.0549956	0.0780245	0.0517076
				(0.1173661)	(0.1233302)	(0.1148737)
Constant	-0.1444514	-0.1444514	-0.667566	0.1329585	0.1882856	0.2150958
	(0.1866799)	(0.1866799)	(0.1858917)	(0.5083386)	(0.4988434)	(0.4778228)

Table D. 3.5. Regressions of trust on receiving dividend and control variables

	Trust (1) N=148 (R^2=0.0773)	Trust (2) N=148 (R^2=0.1472)	Trust (3) N=145 (R^2=0.0742)	Trust (4) N=145 (R^2=0.3410)	Trust (5) N=145 (R^2=0.3609)	Trust (6) N=142 (R^2=0.3420)
Received dividend last year	0.5559731*			0.1594808		
	(0.2383144)			(0.2421501)		
Ever received dividend		0.8365947*			0.3951754	
		(0.2904696)			(0.324597)	
Amount of dividend received			0.0021633			0.0010004
			(0.0010352)			(0.0008783)
Sex				-0.003113	0.0406372	-0.0256769
				(0.3353782)	(0.348922)	(0.342811)
Age				0.0010797	-0.0000992	-0.0002443
				(0.0137354)	(0.01317020	(0.0142787)
Literacy				-0.2627547	-0.2063542	-0.2341392
				(0.2029306)	(0.1883236)	(0.2043642)
Formal education				0.0411622	0.0009373	0.0324642
				(0.2699835)	(0.2696364)	(0.2858877)
Amount of land				-0.0158661	-0.0108619	-0.0188139
				(0.0453971)	(0.0472619)	(0.0429057)
Received training				-0.1704911	-0.1459736	-0.1968426
				(0.3090839)	(0.2943295)	(0.3135421)
Years of membership				0.0028804	0.0015135	0.0023399
				(0.0087879)	(0.0085244)	(0.0086994)
Number of transactions				0.0007309	0.0016363	-0.0022832
				(0.0099948)	(0.0093135)	(0.0091341)
Number of shares				-0.0518994*	-0.0499195*	-0.0578573**
				(0.0204453)	(0.0226048)	(0.0174957)
Distance to PC				0.0006045	0.000729	0.0009338
				(0.0010744)	(0.0011273)	(0.001267
Democracy through voting				0.2138146*	0.2305983*	0.2183661*
				(0.0868463)	(0.0778004)	(0.0837248)
Confidence in the board				0.5149409***	0.4561345**	0.5000384***
				(0.1012659)	(0.1048956)	(0.1021655)
Constant	-0.300526	-0.578773*	-0.1313756	0.0760016	-0.0946572	0.1728007
	(0.2033829)	(0.2578023)	(0.1534107)	(0.4452479)	(0.462963)	(0.4489262)

D 4. Model affective commitment

The regression coefficient means that when the dummy variable has the value 1, indicating someone has received dividend last year, the value for affective commitment will increase by 0.5762691, assuming all other variables stay the same. Compared to an average factor score of -0.0132998 units for affective commitment and a standard error of 0.0833571 (standard deviation is thus: 0.0833571 * $\sqrt{n}$ = 0.0833571 * $\sqrt{}$ 145 = 1.003752403) , this means that when someone received dividend last year, affective commitment is expected to be 0.57411479 standard deviations larger than when someone has not.

Filling in the model, assuming all other variables stay constant, gives:

Affective commitment = -0.741263 + 0.5762691* (Received dividend last year) + 0.5222302 * 0.0612245 + 0.0231617 * 45.13605 – 0.6482338 * 0.5918367 + 0.4585665 * 0.4013605 - 0.0267203 * 4.838435 + 0.1385174 * 0.0884354 - 0.008745 * 20.5102 -0.0014676 * 3.429252 -0.0224915 *

1.482993 - 0.002065 * 62.41497 + 0.2850533 * -0.00000000120 + 0.2625369 * 0.00000000687 = -0.614049066

When not received dividend: -0.614049066

When received dividend: -0.614049066 + 0.5762691 = -0.037779966