Towards a framework for effective performance of smallholder agricultural cooperatives in Limpopo Province, South Africa

By

Maiwashe Aluwani

(11605581)

Thesis for the Doctor of Philosophy degree in Agriculture (Agricultural Economics)

School of Agriculture

University of Venda

Thohoyandou, Limpopo Province

South Africa

Promoter ……... Date ……

Prof P.K Chauke

Co-Promoter …… Date ……..

Prof F.D.K Anim

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DECLARATION

I, Aluwani Maiwashe (11605581), hereby declare that this research thesis for the Doctor of Philosophy in Agriculture (Agricultural Economics) at the University of Venda hereby submitted by me, has not been submitted previously for a degree at this or another university. It is my own work in design and in execution, and that all reference material contained therein has been duly acknowledged.

Signature …… Date ……

A.Maiwashe

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ABSTRACT

The high attrition rate of cooperatives in Limpopo Province is a great concern considering that cooperatives globally and in South Africa have been esteemed to play a role in rural development and poverty reduction. The problem of attrition is a threat in the development of our societies. In response to this, the study investigated the formation of cooperatives, influence of social, human capital and household characteristics. The study also assessed the differences that can be used to discriminate cooperatives earning monthly income and those without a monthly income. The main aim of the study was to develop a framework that could be used to create sustainable cooperatives in the future in Limpopo Province. The study was conducted in five districts of Limpopo Province namely: Sekhukhune, Waterberg, Mopani, Capricorn and Vhembe. Data was collected using a structured questionnaire from 146 cooperatives. Key respondents were cooperatives leaders. Focus group data from Mopani district cooperatives was used to provide a background to the researcher in the development of the framework. Focus group discussion information was only used by the researcher in order to understand the cooperative member's views. Purposive sampling was used to select a sample of 146 cooperatives due to the availability and accessibility of the cooperatives. SPSS analytical tool was used to analyse the data. Models used in the study were Binary logistic, Multinomial and Discriminant analysis. The findings of the study revealed that household characteristics such as gender, member affiliation affected the formation of legitimate cooperatives. Social capital indicators such as access to information and benefits derived by relatives encouraged the need for funding. However human capital indicators were found not to influence the need for external funding. The study also discovered that there were major differences between cooperatives earning a monthly income and those without the income. There were various benefits derived from the cooperatives by members. The study concluded that for cooperatives to be sustainable, focus should be on human capital, extension services and improvement of the level of education. The notion is that an informed, trained and educated cooperative society is the future.

Key words: agricultural cooperatives, human capital, social capital

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ACRONYMS

CODAS	Cooperative Data Analysis System
Coop	Cooperative
COPAC	Cooperative and Policy Alternative Centre
DAFF	Department of Agriculture, Forestry and Fisheries
DTI	Department of Trade and Industry
ICA	International Co-operative Alliance
ICTs	Information and Communication Technologies
ILO	International Labour Organization
LDA	Limpopo Department of Agriculture
MDGs	Millennium Development Goals
NEDLAC	National Economic Development and Labour Council
NCASA	National Cooperative Association
NGOs	Non-Governmental organizations
RSA	Republic of South Africa

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CHAPTER 1

INTRODUCTION

1.1 Background

The role of cooperatives as instruments for socio-economic development has dominated global interest over many years (Khumalo, 2014). However, the business model, especially for smallholder farmers, has not been successfully implemented in South Africa. As attested by Kanyane and Ilorah (2015), it is important that South African cooperatives fit into a developmental context that responds to unemployment and other socioeconomic inequities facing the country. The above observation is critical if the South African government's intention of increased labour absorption is to be met (Black and Gerwel, 2014).

The development of cooperatives in South Africa aimed at improving farming as practiced around the year 1900. Between the 1860s and 1870s agriculture was seen as an important supporter of the newly discovered gold and diamond mines. The discovery of gold deposits in Rand led to an influx of people to urban centers and this created a huge agricultural market. The first consumer cooperative was registered in Pietermaritzburg under the Companies Act no. 25 of 1892 as there was no other legal framework dedicated to cooperatives at the time (Republic of South Africa (RSA), 2005b). The first national cooperative legislation which enabled cooperatives to have a legal status emerged in 1922 when an office was created to monitor, regulate and encourage the formation of cooperatives. However, according to Van Niekerk (1988), the development of these cooperatives mainly served the interests of the white farmers who were in the minority.

The need for more land by white farmers eventually led to blacks being dispossessed of their land (Abrahams, 2009). Pre-1994 South African agricultural history is filled with the success of white farming cooperatives; this success was attributed mainly to massive government support. In particular, the Land Bank was established in 1912 as a mechanism for providing such support. Other factors which contributed to the success of white owned cooperatives were the collective input supplies, joint marketing and effective use of processing cooperatives with the assistance of marketing boards (Phillip, 2003; Groenewald, 2000; Vink, 2012). To support large scale white commercial farming, government passed other legislation such as the 1912 Land Settlement Act which ensured that white people occupied large tracts of state land. Consequently, 210 farms covering 168,636 hectares were transferred to white farmers over a four year period (Department of Trade and Industry (DTI), 2012).

The idea of cooperation was meant to reduce input costs of production by pooling information, human capacity and capital-intensive equipment such as tractors, trailers and trucks that would be used to service the needs of a group of farmers in the cooperatives (Hannan, 2014; Gouet & Van Paassen, 2012). Ana-Mariana, et al. (2013) concur that efficient resource use was critical in the expansion and diversification of small-scale agricultural cooperatives, and that it increased agricultural production in many developing countries.

However, the apartheid government's institutional objectives were to build white-owned cooperatives, hence the massive support. According to Abrahams (2009), the cooperatives Act no.91 of 1981 was aimed at intensifying support for white-owned cooperatives by establishing trading cooperatives such as Ko-operatieve Wijnbouwers

Vereniging van Zuid Afrika (KWV) and Langerberg Ko-operasie (known as KOO today). In 1993, the 1981 Cooperative Act was amended to enable effective competition. As attested by Abrahams (2009), major amendments made were related to membership requirements, expansion of businesses with non-members and delegation of powers to boards of directors. In addition, the representation of voting rights of members at general meetings was also amended.

There are different views though on how cooperatives evolved in South Africa. Okem and Lawrence (2013) describe two streams of cooperative development in South Africa, namely the pre and post- apartheid cooperatives. Satgar and Williams (2011) argue that both pre and post-apartheid cooperative reforms mirror each other as they were both created with racialized barriers. The pre-apartheid developments provided production and market protection for the white minority, while black farming degenerated and became part time and unproductive (Satgar, 2011). The post-apartheid reforms catered for the black majority under the disguise of black economic empowerment. This observation challenges the skills transfer.

Thus, if previously black disadvantaged cooperatives are to gain skills and lessons of success from the past minority white cooperatives which were previously advantaged, resentment from both parties should be dealt with so that it would not hinder the mentorship process. Mentorship is crucial and cannot be overlooked in South Africa. The government has failed to institute mentorship program to facilitate lessons between the pre- and post-apartheid cooperatives (Eastern Cape Development Corporation (ECDC), 2011).

Pre-1994 black and coloured classified cooperatives operated in segregated areas called Bantustans. Credit schemes of various forms, such as stockvels, social clubs, burial societies, muholisano, were created and these survived as the main cooperative initiatives in former Bantustans (National Cooperative Assosiation of South Africa (NCASA), 2003; Mazibuko & Satgar, 2008). Between the years 1994-2000, the government went through some transformation; it deregulated agricultural marketing boards due to international trade liberalization (Mather and Greenberg, 2003). The Competition commission also played a vital role in the deregulation of marketing boards, thus preventing abuse of market power (Roberts, 2009).

After 1994 white cooperatives in processing, marketing, pricing and finance were dismantled, and most of them converted to limited liability companies (Satgar, 2011). The dismantling of power and monopoly from these cooperatives meant that white cooperatives had to be independent financially, as well as production and marketing wise; before this dismantling, government was heavily involved in the cooperatives. The government withdrew its massive support, and took a neutral position. This could be the reason why some cooperatives converted to companies. This conversion was highly criticised and seen as a grab assets tactic of accumulated wealth through government subsidies over a long period (Phillip, 2003).

In the past twenty years of democracy, South Africa has witnessed massive transformation of the cooperative sector. Responsibilities for cooperatives were transferred from the Ministry of Agriculture to the Department of Trade and Industry (DTI), while legislative imperatives were put in place. Kanyane and Koma (2014) contend that the objectives of the new legislations meant well, but that they compromised the

operations of cooperatives by adopting the get-rich-quick approach of the BBBEE. Phillip (2003) also argued that the change of responsibilities from one department aimed at administering and monitoring cooperatives.

In 2004, the National Co-operatives Development Policy was developed and later amended and adopted by the Minister of Trade and Industry, which laid the basis for the development of the co-operative legislation, strategy and other support interventions in South Africa (DTI, 2014). The South African government is promoting the use of cooperatives as a vehicle that could help to develop small-scale farmers in South Africa. The government has, therefore, committed itself to providing enabling legal environment support for cooperatives (Ortman & King, 2007).

One of the aspects that the post 1994 South African government deemed necessary was an enabling legislative environment for cooperatives to flourish. This was evident in the repealing of the old Cooperative Act of 1981. The Act was believed to have been more relevant to the older apartheid regime and lacked proper definition of a cooperative aligned to 7 international cooperative principles (Schoeman, 2006). The Cooperative Act No. 14 of 2005 was signed into law in South Africa in 2005 and it served as the baseline for all cooperative development policy programs. The Act aimed at promoting economic and social development by creating employment, generating income, and facilitating broad-based black economic empowerment and eradicates poverty (RSA, 2005b; Knight, 2006).

The DTI (2014) indicated that the Cooperative Act No.14 of 2005 was amended by the Cooperative Management Act No. 6 of 2013. The aim of the amended Act was to create

a more enabling policy environment. The Act provides a clear strategic approach of government with respect to co-operative development. Government has mandated the DTI to play a leadership role to ensure effective coordination, a simpler registration process, development of support programs and greater participation of critical stakeholders (youth, women and rural dwellers). The amendment was necessary to the success of cooperatives.

It is also important to note that pre-1994 South Africa had black small-scale agricultural cooperatives mostly in the former homeland areas. These co-operatives were promoted as part of the apartheid economic strategy. However during that time they did not enjoy the type of state support that was offered to their white counterparts and thus remained weak, especially in technology development and produce quality improvement (Department of Agriculture, Foresty and fisheries (DAFF), 2012a). In addition, these cooperatives faced serious challenges related to capital resources, knowledge acquisition and management expertise (Van Niekerk, 1988).

The performance of smallholder cooperatives in post 1994 South Africa has reached a dismal state (DTI, 2014). Challenges surround high attrition rates and non-compliance to reporting mechanisms. Kanyane (2014) also alludes to the fact that the South African government suffers from large scale mismanagement and corruption. This could be a contributing factor to the failure of cooperatives. Non-viability of cooperatives in South African is driving cooperatives to near total death experience (Kanyane & Ilorah, 2015). As noted by the DTI (2014) more than 80% of registered co-operatives are only operational for less than three years. Causality of cooperatives failure has also been identified as lack of access to land, poor quantity and quality produce, lack of production

knowledge, poor infrastructure, missing markets, information access, high transaction costs, lack of assets, lack of financial skills, marketing skills, technology skills, selling skills and illiteracy (DAFF, 2012b).

Cooperatives in developed countries also experience various challenges. However in countries like the United State of America, where the concept of cooperatives has largely been understood, focus has shifted towards growing the sector. Solutions to sector growth were achieved through conversion from traditional to investment cooperatives (PICs) (Chaddad & Cook, 2004). This type of a cooperative encourages members to purchase shares in proportion to purchase patronage. The same model has been adopted by other countries such as the Netherlands, New Zealand (Chaddad & Cook, 2004). Recently a new form of cooperation has emerged, that is the new generation cooperatives (NGCs) in which investment is aligned with capital gains and patronage as a strategy to address the problem of free riding (Lyne & Collins, 2008). This model has been accepted by the former white only cooperatives that existed in South Africa prior to the new political dispensation that came to being in 1994. Smallholder cooperatives as they exist at present in South Africa have not developed sufficiently to be able to adopt this model. It is for that reason that this study emphasis the need to transform the present cooperative structure through a sustainable model.

1.2 Problem Statement

Twalo (2012) acknowledged that cooperatives success potential in South Africa has declined. The decline was due to the compromise of the current operational structure which does not have a clear direction. Van der Walt (2005) conducted a study in Limpopo

Province on a sample of 54 cooperatives and found that more than half (65%) were not functional. Challenges that were identified then included poor management, lack of training, conflict amongst members, lack of funds and business operations that never started after registration. A recent study by the DTI (2014) revealed that these challenges continue unabated. The DTI study showed that, despite government spending R46 million in 2013 on cooperative funding, nearly all (88%) cooperatives collapsed. Common institutional challenges associated with cooperatives in South Africa which were documented by several authors are free-riding of members, horizons problems, controls and influences (Lyne & Collins, 2008; Royer, 1999; Cook, 1995; Vitalino, 1983). These institutional challenges are seen as counter-productive and affected by the Cooperative Act No. 14 of 2005 institutional arrangements (Nganwa et al. 2010). Ortman and King (2007) earlier indicated the absence of an equity market to this list. Other institutional problems include lack of alignment of voting and benefits rights to individual investments (Sparks, Ortman and Lyne, 2011). As noted by Nyambe (2010) cooperative in South Africa faces institutional challenges. This challenge reduces the chance of success.

Following the above observation, it is clear that smallholder cooperatives in South Africa are not only confronted by various challenges that call for a deeper understanding of cooperatives but also a need to develop a well- structured and easy to use framework. In an attempt to mitigate the above challenges the South African government initiated some intervention strategies such as cooperative development agencies and academies for education and training, tribunal for enforcing compliance, arbitration and conflict resolution (DTI, 2014). However in the face of all these developmental strategies initiated

by government, the last reported performance of cooperatives still reflects massive failures.

The overarching question that follows this observation is: Could the high failure rate be associated to the manner in which cooperatives are formed? What could be the possible role of social and human capital on these failures and could a framework that could guide all smallholder cooperatives initiation be a possible solution to this challenge? These are imperatives that this study would want to unravel, specifically to inform smallholder cooperative owners of the route to follow when initiating cooperatives. The outcome could also be effectively utilized by both policy makers and implementers in their ventures to assist the development of effective smallholder cooperatives in Limpopo Province specifically, but also for South Africa and beyond.

1.3 Justification of the Study

Within the South African context research has been done to identify challenges associated with the failure of cooperative without a clear indication of how such challenges were to be addressed. Considering that South Africa is a country grounded on ‘Ubuntu’ (people centeredness) it will be interesting to see how social and human capital (cornerstones of the Ubuntu principle) affects the performance of cooperatives. There is a need to develop a framework that will guide the formation of and operational guidelines for smallholder agricultural cooperatives in South Africa generally and in the Limpopo Province specifically. The framework will indicate priority areas of intervention in enabling cooperatives to be operational.

1.4 Study Objectives

1.4.1 Main objective of the study

To develop a framework for use in establishing and enhancing the performance of smallholder cooperatives in Limpopo Province.

1.4.2 Specific Objectives

a) To investigate formation of agricultural cooperatives in Limpopo Province, in response to their high attrition rate.

b) To determine the effect of household characteristics, social and human capital variables on the economic operation of smallholder agricultural cooperatives in Limpopo Province.

c) To assess the determinants of contribution of smallholder agricultural cooperatives to livelihoods in Limpopo Province.

d) To develop a framework for effective initiation and sustenance of smallholder agricultural cooperatives

1.4.3 Research Questions

a) How are cooperatives in Limpopo Province formed?

b) Do social, human capital variables and household characteristics influence the economic operation of smallholder agricultural cooperatives in Limpopo Province?

c) What are the significant differences of smallholder agricultural cooperatives contributing to the livelihoods of their members in Limpopo Province?

1.4.4 Research Hypothesis

a) Cooperatives in Limpopo Province are not formed after thorough engagement of members to help them understand associated principles and legislation.

b) Members of cooperatives do not invest in human capital, and household characteristics do not affect the economic performance of cooperatives while social capital does not have influence on the operation of cooperatives.

c) There are significant differences between agricultural cooperative earning income and agricultural cooperatives not earning an income.

Figure 1 below outlines the theory of change which serves as a guide to the study. The theory of change comprises of the problem identified in the study, causes and effects of the problem, suggested solutions which are objectives of the study, analytical tools, results and way forward. All these will develop emerging agricultural cooperatives that become operational.

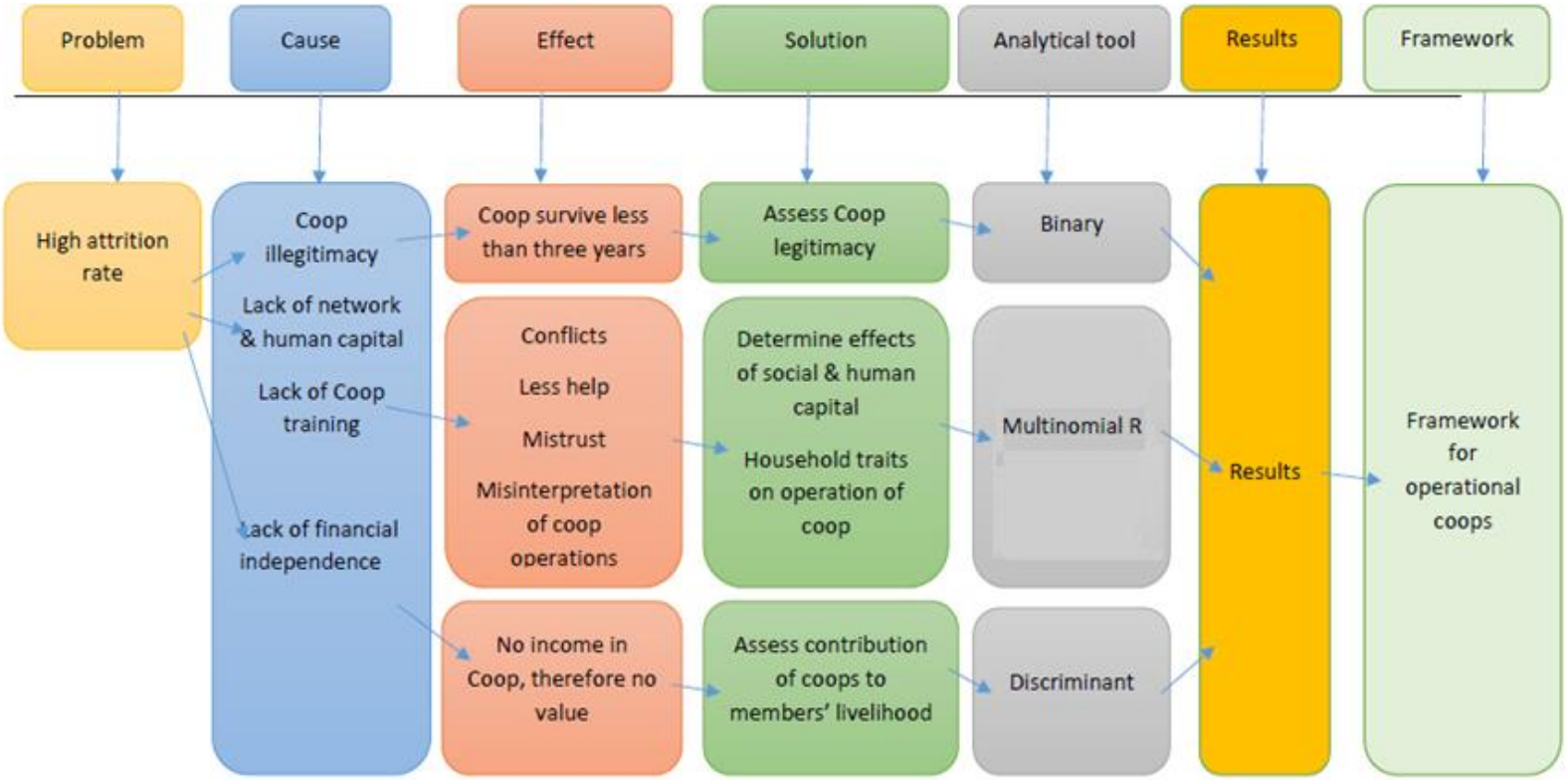


Figure 1.Theory of change: Adapted from Cerlim JISC, 2006

1.5 Limitation and delimitation of the study

The limitation is that the study was conducted in Limpopo Province due to limited resources. Delimitation: The research only focused on smallholder agricultural cooperatives which were registered with the Cooperative Data Analysis System (CODAS).

1.6 Outline of the study

Chapter 1 introduced the study and presented the objectives, the main objective, specific objectives of the study, hypothesis of the study, conceptual framework, limitations and the outline of the study. The subsequent chapters covered the literature review, methodology, results (Chapter 4-7), discussions and recommendations (Chapter 8).

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0 Introduction

This chapter focused on a review of literature on cooperatives, as well as development of operational models. The review focused on how social, human capital and household characteristics influence economic operation of cooperatives. The review also covered the contribution of small-scale agricultural cooperatives to livelihoods of people in the cooperatives.

2.1 General Perspective on Cooperatives

Due to rapid developments in the world, economists have developed three methods of analyzing organizational form and their relationship within the market, namely transaction cost economics (TCE), agency theory and property rights analysis. As suggested by Royer (1999), their focus is on institution and institutional constraints as opposed to profit maximization behaviors. In neoclassical economics these three befit collectively to be referred to as new institutional economics (NIE). The theories further show cost of implementation and monitoring, negotiation skills and relationships with trading partners within the organization. Suli, et al. (2013) note that cooperatives display a wide range of transactions and agency costs due to the financial and social structure governance costs they incur.

Williamson (1985) describes the theory of transaction cost as a theory that involves the costs of exchanging in organizing, transacting, searching, information costs, bargaining, decision costs, policing and enforcement costs. This is to say that in every transaction

exchange, there is a cost (Sykuta & Chaddad, 1999). Mroczek (2014) argues that defining transaction costs is still challenging as costs are still associated with transaction and not with other operations. Transaction costs have been widely based on transactions between buyer and seller. However, institutional (legal framework and taxation) and cultural (market and economic proximity) factors should form part of transaction costs. Gorynia and Mroczek (2013) acknowledge that adding these factors will change the way transaction costs are analysed. What this implies for cooperatives is that selection of the institutional arrangement that will minimise its transaction costs should be made (Royer, 1999). This means that the minimization of transaction costs should be one of the objectives of cooperatives. Cooperatives have proved that they can reduce transaction costs (Menzani & Zamagini, 2010).

Access to information is a cost that most smallholder farmers are not willing to bear especially in South Africa. In cases where farmers want to avoid transaction costs, farm produce can be sold directly to consumers (Timmons & Wang, 2010). In practice, however farmers use their produce for both direct selling and marketing (Agbo et al., 2015). But where the target market is commercial, transaction costs cannot be avoided and various authors agree that cooperatives can reduce their costs by collectively negotiating prices, outsourcing information and accessing markets (Cakir & Balagtas, 2012; Jang & Klein, 2011; Camanzi, et al., 2011). It is on this basis that any typical cooperative should benefit members by reducing transaction costs. Thus, it is expected from this study that the assumptions of the transaction cost theory will be observed, that is, members of cooperatives will in one way or the other demonstrate this attribute.

Agency theory is explained as the relationship that exists whenever an individual or organisation acts on behalf of another. This relationship is commonly known as the agent–principal relationship. The term “relationship” refers to the contract between the two parties while “agent” refers to a manager employed by the organisation. The principal refers to members of the organisation (Alchian & Demsetz, 1972; Royer, 1999; Sykuta & Chaddad, 1999). The implication of such a relationship is seen mostly when the principal feels that the agent is not delivering up to expectation since the objectives of the two usually differ (Ortman & King, 2007). Although all cooperatives are patron-owned organisations, they adopt different decision rights arrangements (Chaddad & Iliopoulos, 2012).

This theory becomes relevant in cooperatives, especially when there is a conflict due to members feeling that their interests are no longer being presented by the manager (Ortman & King, 2007). Problems within the cooperatives are likely to emerge giving rise to distrust. As Munkner (2012) and Birchall (2012) attest, membership loyalty in a cooperative depends on whether needs and demands (expectations) of members are met or not. In order to curtail this, the agency theory, therefore, focuses on contracts, incentives and risk sharing aspects which can minimise misrepresentation in the organisation. Agency costs of controlling managers in the organisation also occur due to heterogeneity of interests among the organisation owners (Chaddad & Iliopoulos, 2012). In practice, hiring managers in cooperatives might be costly in South Africa; hiring professionals in any business comes at a cost. In cases where managers are hired, heterogeneity of interest could jeopardise the relationship between members and

managers. However it is essential for cooperatives to have an independent agent to manage their affairs, especially in a country where skills are scarce. The common problem is that information asymmetry occurs due to differences in knowledge levels between the agent and the principal. Typically, the managers know more about the decision-making environment than the members of the cooperative and this creates room for opportunistic behavior that does not benefit the cooperative (Arcas-Lario et al., 2014). In cooperatives issues of trust and cohesion are critical within the organization itself. Cooperatives challenges could also be coupled to property rights within the organization.

Demsetz (1967) defines Property rights as the capacity to use and control an asset with clearly defined and enforced property rights. Lambini and Nguyen (2014) argue that property rights are fundamental in the discourse of NIE. The absence of property rights means no one takes responsibility and this leads to the depletion of resources. Cook (1995) affirmed that property rights, in a cooperative, are vital for sustainability and growth. Property rights theory expectation can be met if every member in the cooperative is contributing financially. Cook and Iliopoulos (2000) assert that property rights are ill-defined in traditional cooperatives. The problem of property rights in cooperatives is still of a great concern especially at a time wherein the global community continues to advocate for cooperatives as vehicles of development.

The United Nations (UN), International Labour Organization, International Cooperative Alliance (ICA) and European Union (EU) all agree that a cooperative is an organisation that qualifies to meet all dimensions of poverty. Specifically cooperatives are seen globally as a tool to empower and defend the interest of the poor, more so in Africa

(Servalic et al., 2012; International Cooperatives Alliance, 2013). Agricultural cooperatives play an important role by addressing market failures, instituting mechanisms for bargaining power (Szabo, 2006) and by poverty alleviation strategy (Christy, 1987). Agricultural cooperatives have greatly contributed to productive and scientific based agricultural systems in the world (Smith, 2011). Co-operatives provide economies of scale to cooperatives in processing and marketing (Fernandez, 2014).

Kwapong and Hanisch (2013) discovered four different schools of thought on the ability of the cooperative model to reduce poverty. The emphasis is that all schools of thought acknowledge that the cooperative model has a potential to reduce poverty though it is contingent to certain imperatives such as value and principles. The first school of thought is called the *fundamental perspective*. In this view, a cooperative is seen as a model that has an automatic tendency to generate benefits for the poor (Thorp, et al., 2005; Birchall, 2003; Birchall, 2004). This is a belief that if poor people join cooperatives, their status quo will be changed.

However this notion has been challenged by the *moderate perspective* school of thought. The belief in this latter perspective is that cooperatives do not necessarily have an inbuilt obligation to the poor, but that they are people-centered businesses that could create advantages for the poor (Braverman, et al., 1991 & Laidlaw, 1980). The emphasis placed on cooperatives is that they are businesses that are driven by people's interest and that they are not necessarily generating automatic benefits for the poor. The argument depicted in this school of thought exaggerates the potential benefits.

In the *balanced perspective* school of thought, Pollet (2009) and Satgar and Williams (2008) argue that cooperatives are agents meant to reduce poverty, but are however subjected to cooperative values and principles with certain preconditions in place. This perspective argues that cooperatives should be independent and that they should rely on values and principles of cooperatives. Hannan (2014) argues that cooperatives have a well-defined and long established governance structure which outlines ownership and decision-making processes.

The *optimistic perspective* school of thought claims that there are more benefits such as identification of economic opportunities, empowering the disadvantaged to defend their interests and benefiting from collective risk (Wanyama, et al., 2008; Simmons & Birchall, 2008; Pollet & Develtere, 2004).

It is apparent that the four different schools of thought are in agreement that cooperatives have the potential to reduce poverty. The approaches however, clarify the general notions that cooperatives promote development. The implication is that different environmental settings will dictate the orientation of the cooperatives. This dimension of cooperative development gives a clear picture of the different types of cooperatives that exist in society. In this study, the cooperative approach will combine both balanced and optimist perspectives. The two approaches will be appropriate for the study due because they take cognizance of the cooperative values and principles that have been encouraged. The elements of human emancipation and empowerment are stressed in the perspectives. This is in line with the expectations of the cooperatives.

Cooperatives are, therefore, on the global economic spotlight of organisations such as the UN, to achieve Millennium Development Goals (MDGs) (Kwapong & Hanisch, 2013). The ability of cooperatives to drive such a mandate has been noted by Birchall (2004) and Vicari and De Muro (2012). With evidence from some of the developmental programs of cooperatives being visible that cooperatives had contributed toward achievement of MDGs (Francesconi & Heerink, 2010). The discovery was that cooperatives contributed to the MDGs far more than what was originally expected. In 1993, the World Bank also acknowledged the developmental potential of cooperatives, but echoed that this potential will materialise provided cooperatives in Africa were restructured and disentangled from government or state dependence. This is consistent with Kanyane and Ilorah (2015) observations that state attachment does not cultivate autonomous impulses needed for sustainability within cooperatives.

Wanyama, et al. (2009) notes the importance of restructuring as cooperatives in Africa were created for colonial purposes. The aim was to use these cooperatives as strategic tools to group rural producers into clusters for more effective collection of essential commodities (Getnet & Anullo, 2012b). Thus, the motive for forming cooperatives by colonists in most parts of Africa has expired and, therefore, reformation is due. Altman (2015) points out that the development of a framework that can articulate and specify the conditions under which different types of agricultural cooperatives can be sustainable in the economic realm, at the same time offering smallholder farmer's independence, is vital. Danda and Bamanyisa (2011) agree that self-reliance has been a missing ingredient in cooperatives. Self-reliance brings freedom from external controls and directions in cooperatives. Ideally cooperatives are supposed to be operated in a standard manner

depicted in ICA principles (Zhao, 2012a). The importance of independence cannot, therefore, be overlooked in cooperatives though as a self-help and people-centered organisation, conflicts are inevitable. Cooperatives that are not independent, however, have stirred up debates. They have been criticised and associated with failure. Though cooperatives experienced difficulty in becoming independent, their role cannot be overlooked.

After independence, most African countries, governments have accorded a vital role to cooperatives, particularly in poverty reduction and rural development discourses. The initiative led to injections of large funding to cooperatives from the government. The initiative was successful as many cooperatives were formed. It is against this background that Benson (2014) argues that the manner in which cooperatives are formed will affect the performance of the cooperatives. Problems will always arise when these cooperatives are not formed voluntarily to respond to members' needs but as a response to inducements from the public or non-governmental organisations to establish local services (Alemu et al., 2010). When cooperatives are not products of the community in which they were formed, but rather products of external actors, the performance will be poor. Altman (2015) argues that the predicted advantages of cooperatives are a function of whether or not and extent to which cooperative principles are employed to underpin co-operative governance. Borda-Rodriguez and Vicari (2014) insist that cooperatives should fulfil the rights and obligations that serve members' interests as, by default, it is the purpose of cooperatives to do so. This can be established by strong efforts of capacity strengthening to members so they can be independent. There is need for such institutional strengthening of self-help, self–responsibility, democracy and autonomy to

be communicated to governments as well (Herbal et al., 2015), for there is a tendency of government agencies to control cooperatives. Unfortunately, autonomy and independence are key factors if cooperatives are to succeed in poverty reduction. This was evident during the 1970s when state-controlled co-operatives did not fulfil their intended purpose of helping the poor (Munkner, 2012). As a result, state control resulted in a huge loss of public funds and it further strengthened existing inequalities. Xu (2012) calls these cooperative creation scenarios as a 'task' (i.e. yardstick for government achievements to be seen) and a 'trick' (i.e. initiators' way of getting funding). For cooperatives to be autonomous government and agencies must withdraw control as was the case in India and Sri Lanka (Fischer et al., 1999) and (Rajagopalan, 2003). The creation of misaligned cooperatives is working against practical solutions that could be employed at local level (Zhao & Yuan, 2014). The exercise in itself is a waste of resources. The purpose of the existence of these cooperative should lie within the cooperative itself and the strength to progress should come from within. Herbal, et al. (2015) discourages governments from using cooperatives as implementation tools for their rural policies.

It is clear that, in one way or the other, that stakeholder's interference in cooperatives governance is an issue that can cripple the performance of cooperatives. It threatens the very foundation of what cooperatives stand for. It is observable that the foundation of cooperatives is not only shaken by external interference, but also by members who form these cooperatives; sometimes these members do not have proper grounds to do so. This is supported by Wanyama, et al. (2009) who observed that in some instances cooperatives are created for support-lobbying purposes by poor people who are aware of

the donor or government preference for cooperative types of organisations. Howard and Klosher (cited in Tursinbek & Karin, 2011) also found out that farmers are motivated to form or join cooperatives by various reasons, such as the need for infrastructure, marketing services, as well as risk diversification. Access to governments' grants was also identified as a motive for joining a cooperative. This is one of the areas creating autonomy problems. Develtere, et al. (2008) is of the opinion that donors and state government play a role in the poor performance of cooperatives. The hijacking of control, as a result of funding by government makes it difficult for these cooperatives to survive. It is important, however, to note that the failures of cooperative in Sub-Saharan Africa have also been attributed to internal weaknesses and management problems. The major cause may be the non-viability of some activities imposed by the government (Hussi et al., 1993a). There has been an emergence of third generation African cooperatives which appear to be authentic self-help organisations embracing the self-help attitude among members, leaders and managers level (Getnet & Anullo, 2012). The approach has aided members to improve their services and products (Wanyama, 2013). This culture of emerging cooperatives is what Africa needs and more support should be given to such cooperatives.

Wanyama, et al. (2009) echoed that some of the issues that hinder cooperatives, especially in most African countries, include reliance on often dysfunctional and outdated or obsolete legal frameworks. South Africa's Act no.14 of 2005 is an exception. The Act was even amended and is now known as the Cooperative Management Act no. 6 of 2013 (DTI, 2014). With Africa still facing policy and legislative problems, it is vital for cooperatives to participate in issues of policy and legislation (Chambo, 2007). Failure to

participate in policy matters will eventually hinder cooperatives to attract the required investors and qualified management for growth (Department for International Development (DFID), 2008). It is clear that autonomy holds the success of a cooperative and these are the issues that will also be investigated in this study. It is also important to note that cooperatives are likely to trade their autonomy and independence when there is money exchanged. This is dicey; hence cooperatives need outside financial support.

The dominance of the state in the establishment of cooperatives has been observed in many countries. A study by Bijman and Hu (2011) confirmed that some cooperatives (37%) were state initiated in China. Bijman and Hu found that more than half (56%) of the cooperatives were initiated with influence from external sources (brokers, traders, farmers cooperatives and processors). It is not surprising, therefore, that, in their study, Hussi, et al. (1993) observed high failure rates of state and NGO cooperative ventures. As noted by Bijman and Hu (2011), state intervention is mostly aimed at increasing access to foreign markets and increasing the supply chain development.

In South Africa, Theron (2008) argues that the increased prevalence of cooperatives in Limpopo Province and the Eastern Cape strongly suggests that the formation of cooperatives was a response to poverty. For the purpose of this study, it is therefore critical to assess the circumstances around the formation of cooperatives. It will be of interest for the study to investigate the legitimacy of these cooperatives and observe how these circumstances affect the performance of cooperatives. In indicator for legitimacy in this study will be the level of cooperative knowledge that members have because the assumption is that if members understand the act then they know how a cooperative should operate and the principles embraced.

2.2 Development of operational models

Nebojsa, et al. (2014) outlined good agricultural models that currently exist, but which do not provide ideal solutions for small farm cooperatives. These models as shown by Vorley, et al. (2009), include producer (farmer controlled), buyer (processors, exporters and retailers) and intermediary-driven (government-driven) models. Sjauw-Koem (2012) observed some differences in his model findings, thus, the producer-driven model is similar to Vorley, et al's. (2009) buyer- driven (wholesalers, retailers as buyers, facilitator-driven (government) and integrated-model (firms, companies) were observed by Sjauw-Koem (2012). Below is a table outlining organizational models observations.

Table 2. 1: Organisational models for agriculture production

Vorley et al (2009)	**Organization driver**	**Sjauw-Koem (2012)**
Producer driven	Smallholder farmers, coops, farmer organization	Producer driven
	Large scale farmers	
Buyer driven	Processors	Buyer driven
	Exporters	
	Retailers	
Intermediary driven	Local traders ,wholesalers	
	NGOs, other support agencies	Facilitator driven
	National & local governments	
	Lead firms	Integrated
	Supermarkets chains	
	Multinational companies	

Source: Adapted from Vorley at al. (2009) and Sjauw-Koem (2012).

2.3 Social capital influence on small-scale agricultural cooperatives

Social capital increasingly shows that social cohesion is critical for societies to progress (Melece, 2013). Though social capital, as a concept, is new in economics, it is gaining more interest (Pugno & Verme, 2012). The analysis of social capital differs by discipline and it has generally improved economic, public and social performance (Paraskevopoulos, 2010). Bhuiyan (2011) argues that social capital can be used as a resource to attain sustainable community development. There are various definitions of social capital. Jones and Woolcock (2007) have come up with six dimensions of social capital. The dimensions include: groups and networks, trust and solidarity, collective action and cooperation, information and communication, social cohesion and inclusion, empowerment and political action.

An understanding of how people access resources from the *groups and networks* they belong to is an integral concept of social capital. Koutsou, et al. (2014) argues that the establishment of a trustworthy relationship is an advantage that cultivates success of local producer groups. Similarly, Gutierrez, et al. (2011) posits that the combination of resources and attributes of different individuals enables achievement. Mutual assistance in the community, as well as efforts to cooperate, coordinate, exchange information and resources are reflected in the groups and network dimension. Hartmann and Arata (2011) noted that social capital, through networks have been found to also promote innovation in poor agricultural communities. The dimension is connected by relationships that are shaped by environmental factors, kinship, friendship and the markets (Dudwick et al., 2006).

The *dimension of trust and solidarity* examines the extent to which people can rely on their neighbor, co-worker, colleagues, acquaintances, service providers and even strangers, in order to assist them or to do them no harm. Guillen, et al. (2011) confirms that trust is an important component of social capital. Kasabov (2015) adds that decreased trust is one of the traits that have been associated with cooperatives facing challenges and failures. Societies with high levels of trust have been found to require lighter legal systems (Aghion et al., 2010). Trust reflects the level of dependency based on contacts or familiar networks. This dimension reflects social relationships and the ability of that relationship to endure through a difficult or rapidly changing environment (Dudwick et al., 2006).

Collective action and cooperation dimension reflects the greater depth of how well people work with each other in their communities when there is a crisis or a joint problem. The assumption is that collaborative action forms part of social capital, which has a snowballing effect on the development of collective governance (Emerson et al., 2012). Conflicts and power inequalities have been identified as the main rudiments that prohibit collaboration. Purdy (2012) also argues that senses of powerlessness in members can demoralise collaboration. This dimension also reflects the consequences of violating community expectations in the community. For better in- depth interviews are normally held with formal and informal community leaders or in focus group discussions (Dudwick et al., 2006). Bennett and Segerberg (2013) argue that collective action should not only be measured by people coming together, but by how people connect amongst themselves.

Information and communication dimension is reflected in the level of access to information that a community has as it strengthens the voice of the community in issues that affect their wellbeing. Pulfer and Lips (2010) identified some aspects that are crucial in communication. The amount of time spent on communication and the quality of communication play an important role in the success of farmer groups. For decades, traditional forms of information and communication technologies (ICTs) have involved the use of Radio and TV mostly, featuring weather and agricultural information in developing countries (Goyal, 2010). Aker (2011) showed that the rapid spread of ICTs in recent years has offered knowledge transfer opportunities. This means that cooperatives do not necessarily have to rely on traditional forms of communication, but they can take advantage of ICT products like mobile phones. Initially, the wealthier, more educated and urban residents had adopted the use of mobile phones, but recently, there is evidence that rural and urban populations, in the poorest countries, use mobile phones (Aker & Mbiti, 2010). In the context of this study, this dimension will be explored by checking the way and manner in which community members receive and share information and the quality extent of the communication infrastructure (Dudwick et al., 2006).

Social cohesion and inclusion dimension focuses on the tenacity of social bonds and their dual potential to include and exclude community members. Social capital is sometimes viewed as seen synonymous with social cohesion (Lawrance, 2011). While some understand social cohesion as a process directed at social inclusion (Vergolini, 2011). There are many arguments about what social cohesion is and what its measurements are (Dickes et al., 2010). Dudwick, et al. (2006) pointed out that social cohesion can also be assessed through community events such as weddings and funerals or through activities

that strengthen social cohesion, increase solidarity, improve communication, and provide learning for coordinated activities. When there is a sense of belonging, people tend to attach themselves to their communities and fight corruption and unruly behaviors together. This is in line with Garip's (2012) findings, who discovered that communities with high levels of social capital are more effective in exercising social control over uncivil behaviors. The expectation from the study is that the level of unity amongst members will contribute to social capital stock. Other benefits of a cohesive community or neighborhood are mutual aid and risk coping strategies (Attanasio, et al., 2012; Dihn, et al., 2012).

Empowerment and political action dimension is the extent to which individuals have a measure of control over institutions or processes that directly affect their wellbeing in a community. Barraud-Didiera, et al. (2012) asserts that the annual general meetings (AGMs) are one way in which members can express their choice. During AGMs members participate by ensuring that the cooperative is run democratically and board and management members are elected according to the principle of one man one vote. A member can also be directly empowered by forming part of the cooperative management team (Siebert & Park, 2010). This dimension also considers social cleavages, whether related to gender, ethnicity, religion, regionalism, or other factors. An insight to this dimension can be acquired through interviews with member of the judicial system, media, labor and political leaders (Dudwick et al., 2006).

Social capital, as a concept, means many things to different people (Narayan & Pritchett, 1999) and, as such, the multiplicity of meanings of this concept and operations create problems when measuring the concept (Devine & Roberts, 2003). The topic attracts

considerable interest due to its focus on individual and community wellbeing (Melece, 2013). The table below shows different concepts of social capital.

Table 2. 2 Other Perspectives of the social capital concept

Reference	Social capital concept
(Woolcock and Narayan 2000)	Norms and networks that enable people to act collectively. Types: Bonding (among heterogeneous groups),Bridging (across heterogeneous groups) & Linking (between heterogeneous groups) social capital
(Davis, 2005)	resources available within communities in networks of mutual support ,reciprocity and trust
(Finsveen and Van Oorschot, 2008)	Social structure which expresses the ability of members of a given society to combine their strengths working together to common goals aiming at development
(Stiglitz et al., 2010)	Social networks and the associated norms of reciprocity and trustworthiness
(Gannon and Roberts, 2012)	Social capital generates positive externalities for group members through shared trust, norms and values.

Literature indicates that members are more loyal to decisions that they have actively participated in as opposed to those forced on them. Participation becomes an important indicator in developing farmers understanding and appreciation of the cooperative organisation. The problem of free-riding can be solved when members are satisfied (Munkner, 2012; Birchall, 2012). Osterberg and Nilsson (2009) concur that there is a high level of disloyalty when members are of the view that management is not representing them well. Eventually, high levels of heterogeneity contributes to the breakdown of the cooperative (Cook, 1995). This is consistent with the views of Cook and Burress (2009), Fulton (1999) and Fulton and Giannakas (2001) who argue that member heterogeneity

affects decision-making since it is difficult to represent the different interests of members, especially when the cooperative becomes bigger in size.

Koutsou, et al. (2014) argues that building of trustworthy relationships between producer groups is an essential advantage towards success among local producer groups. Cooperatives stand to gain more if this advantage is embraced. Osterberg, et al. (2007) and Hansen, et al. (2002) indicated that there is a particular landscape in which group performance and cohesion can be determined. Aspects such as economic background, years of experience in the cooperative and age of the cooperative will determine the level of trust that can be built in the cooperative. Communication amongst cooperative members is also a critical component of a successful cooperative (Burt, 2004).

Farmer's participation in small-scale agricultural cooperatives is closely related to human and social capital (Hellin et al., 2009). A study conducted by Brown, et al. (2013), on factors contributing to effective U.S. cooperative member-owner communications revealed that small-scale agricultural cooperatives are much slower in adopting communication strategies. The study also revealed that tapping into communication technology will actually attract younger producers and non-members by issuing critical information on patronage funds. Rural people, in particular depend on informal and non-institutional sources of information for their daily activities (Yu, 2010). Information and knowledge transfer through NGOs in agriculture, environment and health plays a major role (Hasnain, 2013).

Ahsanullah (2011) argues that there is a need for robust information service if economic growth in rural areas is to be ensured. With most of the cooperatives operating in rural

areas, access to information is limited to radio, extension officers and Television. As a result, Russel and Huang (2012) advocate for the building of social capital and library services which are tailor made for the rural communities.

In Brown et al's. (2013) study, it was revealed that it is effective for cooperatives to communicate their benefits and responsibilities through meetings and newsletters. However, the general public information dissemination for industry-related news and the marketing of cooperatives should be disseminated through direct emailing. Forgacs (2008) conducted a study to assess the leadership and importance of social capital in cooperatives during transition using a case study of two cooperatives. Results showed that a high level of trust was effectively reduced transaction costs in cooperatives. The level of leadership trust indicated the importance of leaders in both cooperatives. The study also showed that the level of communication in cooperatives will affect the level of cooperation within the cooperative.

2.4 Human capital in agricultural cooperatives

Human capital is the resource in a form of formal education or direct experience for co-creation and knowledge building (Banerjee, 2013 & De Jong, 2015). The development of human capital through the schooling system creates a base for social capital. Thus, educated individuals are interested in dialogue, conversation and the development of the environment in which people can work and trust each other (Dinda, 2014). Informed managers can easily coordinate resources in the business (Sirmon et al., 2011). Education and training in emerging agricultural cooperatives still influences successful performance of cooperatives movements in Africa to date (Chambo, 2009). When there

is no serious effort of cooperative education, challenges emerge as activities in the cooperative and organisational structures are heavily regulated by laws that are too detailed to be understood by the average member (Braverman, 1991). Most leadership roles would require a person to have managerial, innovation and entrepreneurship skills such as technical, conceptual and interpersonal skills, in order to run the cooperatives (Tang et al., 2012).

Mason, et al. (2004) defined the entrepreneurship process as the ability to take a business idea and translate it into tangible results. Since the management of a cooperative relies heavily on expertise, it is, therefore, vital for leadership to have skills and knowledge of cooperative enterprises (Stringfellow et al., 1997). This is due to the ability of managerial ties that can easily recognize information, business and entrepreneurial opportunities (Li & Zhou, 2010; George & Bock, 2011). Manderson and Kneller (2012) added that organisations with greater intensity of human capital have greater opportunities for technological advancement.

Nyoro and Ngugi (2007) also argued that successful cooperatives have staff and management committees with more qualifications than unsuccessful cooperatives. Nkhoma (2011) concurs that skilled management will be able to strategise on business activities. The presence of human capital is critical in cooperative success (Fernandez, 2014). Consequently individuals who are better trained and well educated are likely to secure more productivity and benefits for the organisation (Mahmood & Azhar, 2015). The expectation in cooperatives will be that, the better educated and trained members are, the more productive the cooperative. Table 2.3 below shows Human Capital concepts by other authors.

Table 2. 3 Perspectives on Human capital concept

Reference	Human capital concept
(Falk, 2000)	Human capital includes the skill and the knowledge which has gathered in formal and informal learning
(Po-Yang and Hsuing, 2006)	Includes competencies such as skills ,experiences, knowledge ,ability and motivation

2.5 Household characteristics of Agricultural cooperative members

Most cooperatives are started, composed and run by men. Even if there is a mixed composition of members, male members tend to occupy leadership positions and dominate the cooperative. Agbo (2000) discovered that in Nigeria cooperatives which applied for funding were inclined to the age of the cooperative, no of members, gender of members, and number of years of schooling of members. The higher education levels of members influence the probability of positive participation in the cooperative and this is attributed to the fact that farmers can easily adapt to new technologies, interpret and understand price and market related information and, eventually, have more access to credit and capital (Norton, 2006).

In most cooperatives, gender issues are still not balanced. For example Kenya's cooperative membership is composed of 75% of male members. The composition structure is attributed to traditional male ownership of agricultural assets such as land and livestock (Wanyama, 2008). However, in cooperatives such as consumer cooperatives women tend to occupy important positions; this is reflected in both the membership and board of directors. Women participation in cooperatives leadership roles is crucial as this builds their confidence in society (Baden & Pionetti, 2011).

South Africa is the only country where gender composition is reversed. Two thirds of the members in the registered emerging cooperatives (i.e. black-owned, as opposed to the established white-owned cooperatives) are women. This is probably due to the role women played during and after the struggle against apartheid (Develtere, et al., 2008). The study will adopt household characteristics which were adopted in a study that was conducted in KwaZulu Natal. The characteristic variables were: age of household coop member, marital status of the household coop member, gender of household coop member, household size (number) of coop member, dependency ratio (ratio of non-workers and workers in each household), household remittances/ grants/ pension of coop member and primary occupation of coop member. The choice to assess these variables on the study is based on the notion that the variables will best explain the characteristics of the agricultural cooperative households (Baiyegunhi, 2014).

2.6 Contribution of cooperatives to livelihoods

Emerging agricultural cooperatives enable people to improve their economic conditions by enabling them to work collectively to achieve results that individuals cannot attain (Gertler, 2001). In cooperatives, farmers can collectively bargain for better prices (Cakir & Balagtas, 2012) and increase their profit margins (Uematsu & Mishra, 2011). Cooperatives can transform farmers into industrial agricultural farmers by enabling them to access liberalised markets (Birchall, 2004). Mason, et al. (2004) offer a useful list of twelve elements to assess the effectiveness of agricultural organisations, namely Leadership; Vision and goals; Partnerships; Socio-economic objectives; Culture and values; Entrepreneurship and business development; Global economic context; Business

management capacity; Human resource capacity; Financial capacity; Land and rights capacity and organisational capacity.

The successful performance of cooperatives is also measured in terms of financial performance, for example net margin, member commodity prices, return on equity, and sales growth. Banaszak (2008) identified four elements, namely leadership strength, group size, business relationship among members, and a member selection process during group formation. Cooperatives are crucial in the development of the agricultural sector (ICA, 2015 & United Nations (UN), 2015). The most important role is that of mitigating small holder farmers' weaknesses such as lack of information, high transaction costs, small volumes, low capital and insufficient credit (Bernard, et al., 2010).

2.6.1 Roles of Cooperatives in Africa and Globally

The United Nations (UN), the International Labour Organization, the International Cooperative Alliance (ICA) and the European Union (EU) have total confidence in cooperatives as tools to address the economic and social development worldwide (World Bank, 2007). In Africa, cooperatives have been creating employment opportunities. An estimated 250 million farmers in developing nations belong to a cooperative. An ILO study estimated that the cooperative sector in 15 African countries was responsible for 158,640 direct jobs (Schewttmann,1997). Cooperatives were reportedly employing a staggering 77,400 staff in Kenya (Wanyama, 2007), in Ghana, 3,130 (Tsekpo, 2008), in Uganda, 2,823 (Mrema, 2008), in Rwanda, 800, in Egypt, 9,500 (Aal, 2008), in Ethiopia, 28,000 (Lemma, 2008). Wanyama and Lemma's findings suggest that, for Kenya and Ethiopia respectively, employment might even be higher than the official figures.

According to ILO (2012a), in Kenya, cooperatives employ 300,000 people and create indirect work for 2 million people through finance and opportunities they created in 2012. Cooperatives in the 10 biggest world economies make up an average of almost 5% of the GDP, which amounts, approximately, to the GDP of Italy, the world's 7th largest economy (Roelants, et al., 2012 & Bajo & Roelants, 2011). According to ICA (2012) the largest 300 cooperatives of the world had a combined annual turn-over of $2 trillion. In a study that they conducted in Sri Lanka and Tanzania Birchall and Simmons (2009) found out that cooperatives reduce poverty. It was also found that cooperatives make positive contributions in non-income areas such as skill development, education and gender equality. In China, cooperatives provide 91% of microcredit. Clearly, cooperatives have a huge potential of changing poverty situations for many. This is in line with the empirical evidence of studies on poverty from eleven African countries, which showed that cooperatives significantly contributed to poverty alleviation (Wanyama et al., 2008). Government should facilitate the growth of cooperatives into a modern value chain system and show forth such benefits to small scale and emerging farmers (Birthal and Joshi, 2007).

2.6.2 Role of Cooperatives in South Africa

In 2009, the Minister of Rural Development and Land Reform approved the Comprehensive Rural Development Program (CRDP) as one of the key strategic priority areas of government as outlined in the Medium Term Strategic Framework (MTSF). The drive towards cooperative development occupies an important place in the CRDP within the context of the government's rural development strategy. According to the CRDP, the drive to agrarian reform will focus on, among others, the establishment of rural business

initiatives, agro-industries and cooperatives in villages and small, rural towns. The Department of Agriculture, Forestry and Fisheries has an Information Management System for cooperatives called CODAS (Cooperative Data Analysis System) and its objectives are: (i) To store, collate and analyze data in a more accessible format and ensure accuracy, reliability and currency of data; (Tuominen et al.) To establish the actual status, performance and extent of existing cooperatives in the agriculture, forestry and fisheries sector in South Africa; (iii) To establish the growth trends of the cooperatives in the sector; (Zambia Ministry of Agriculture and Cooperatives. et al.) To perform comparisons in terms of the cooperative activities by province, district and local municipality; (v) To facilitate planning and implementation of intervention strategies and programs for cooperatives in the sector; and (vi) To assist in the compilation of annual reports on the status of cooperatives in the sector (DAFF, 2011).

Cooperatives are regarded as having a potential to impact on development and poverty reduction. Cooperatives have a wide-reaching direct and indirect impact on socio-economic development. Agricultural cooperatives play an important role in food production and distribution, and in supporting long-term food security. Cooperatives can create productive employment, raise incomes, and help to reduce poverty. Some agricultural co-operatives improve farm productivity by obtaining inputs at low costs, encourage sustainable farming techniques, and develop member's management and organisational skills. Small-scale agricultural cooperatives also promote the participation of women in economic production, which, in turn, helps in food production and rural development (DAFF, 2011).

Through co-operatives, women mostly in African countries are able to unite in solidarity and provide a network of mutual support to overcome cultural restrictions to pursue economic or commercial activities. Smallholder and emerging farmers are able to increase their productivity and incomes by collectively negotiating through cooperatives for better prices for inputs like fertilizer, seeds, transport and storage. They can also help farmers expand market access and capture more of the value chain, for example, by getting involved in value adding or agro-processing activities (DAFF, 2011).

The 2010/11 report on cooperatives (DAFF, 2011) in the agriculture, forestry and fisheries reveals the status of cooperatives in South Africa. The analysis done on the cooperatives sector shows that there were 836 small-scale agricultural cooperatives in the Cooperative Data Analysis System (CODAS) in South Africa during the time of analysis in 2010/2011 period. Of the 836 cooperatives on CODAS, 306 were found in the province of KwaZulu-Natal, which made up 36% of the total cooperatives. In funding, Limpopo Province surpassed all the provinces with 42 cooperatives funded with R36m, followed by KwaZulu-Natal with R22m worth of support to 51 cooperatives. A total of 2 389 job opportunities were created by the cooperatives sector in the country, with 65% of this (1 858) being permanent jobs, while 33% (981), were temporary jobs. At the time of the report agricultural co-operatives in the Limpopo province were 127, which translated into 15% of the total cooperatives which were on CODAS in 2010/2011. Of the jobs that were created in Limpopo Province from the 127 cooperatives, it was reported that 377 jobs were full time jobs and 141 jobs were part-time.

2.7 Summary of reviewed literature

General perspectives of cooperatives were reviewed. Literature also indicated that cooperatives were used as tools during colonisation for the effective collection of commodities. When independence came, most African countries gave cooperatives central roles in rural development. Funding was directed to these cooperatives both from private donors and from government. The chapter also discussed that today's cooperatives are not so different from the cooperatives of old. Cooperatives in developing countries are still given preferential treatment, especially in terms of funding. Many cooperatives are started because of funding incentives and, as such many do not perform well. This is attributed to the fact that, in the process of receiving some of these funding privileges, autonomy and control are also traded too.

In most African countries cooperatives are still relying on outdated legislation, which makes it even harder for these cooperatives to grow into competitive enterprises. Cooperatives find it very hard to attract investors due to the public image that these cooperatives portray. The review also discussed the influence that government or private donors have on cooperatives. It was also revealed that, even though cooperatives experience some internal weaknesses due to management issues, problems presented by stakeholders, such as government or donors at times can be more damaging than the actual in-house problems. This is normally the case when initiatives encourage members to sit and relax, rather than to work in their own cooperatives. This could sometimes be caused by excessive funding or mismatched agendas or rationale.

The review also discussed the importance of social and human capital in cooperatives. These are important as cooperatives operate in communities driven by the people; Cooperatives are also regulated by laws which are detailed and complex in nature. There is also a need for people to be educated on how cooperatives should be run.

The review also highlighted issues around social capital. These are issues which relate to social relationships in the communities. Six dimensions of social capital, which were used in this study, were discussed in the review. The increase in the level of social capital basically influenced the day to day activities of the cooperatives. Social capital reflects the importance of community relationships, how well the community unites and also how well the community is concerned about its members. The issues around trust of one another in the community become vital in the operation of cooperatives.

Household characteristics that were assessed in the study were highlighted. The contributions of cooperatives were explored and it was evident that cooperatives play a vital role in poverty reduction and rural development. The enterprises have a high potential of changing the lives of many people in poverty. In South Africa, cooperatives play a big role in job creation. But from the literature gaps have been identified. And that is the gap that this study intends to close. The literature acknowledges the failure of cooperatives and various courses thereof but does not provide guidelines on how to make cooperatives operational. This study therefore intends to develop a framework model that will make cooperatives to become operational in Limpopo province.

2.8 Theoretical and Conceptual Framework of the Proposed Study

The framework below in Figure 2 outlined the objectives of the study, namely an investigation of formation of cooperatives. Also determining how social capital, human capital and household characteristics influence the economic operations of cooperatives. Assessing the differences between cooperatives generating monthly income and those which are not generating income. The framework showed issues that could contribute to cooperatives being dysfunctional. The change in variables that result in cooperatives being dysfunctional could transform the cooperatives into functional operational entities.

The idea is that the circumstances of cooperatives formation will either positively or negatively affect the way they perform. As attested by Mayende (2011), South African cooperatives face challenges of a bureaucratic and dominant government. Such controls have created an identity and management crisis for cooperatives (Schewttmann, 2014). Cooperatives are unable to thrive without government control and subsidies. Amongst other challenges faced by cooperatives, Wanyama (2013) noted that legislation which governs cooperatives curtails the way cooperatives function. In some countries, policies and laws pertaining to cooperatives were not conducive for the proper functioning of cooperatives. As shown in the framework below, the inability to be independent or the way cooperatives are formed influences the way cooperatives perform. Kanyane and Ilorah (2015) assert that state interference in cooperatives will shrink motivation and, eventually, members will lose interest and commitment. It is ideal that cooperatives should be formed based on principles of cooperatives.

As noted by Liang, et al. (2015) social capital is hard to measure directly. Therefore indicators of social capital were used to measure social capital. Novkovic (2013) and Nilson, et al. (2012) argue that social capital is an important resource in cooperatives. In this study indicators were identified from the six dimensions of social capital. The study hypothesized that the presence of networks between members of the cooperative produces better economic performance for the cooperatives. Gijselinckx (2012) notes that human capital in small-scale agricultural cooperatives includes knowledge and technical skills related to production, processing, marketing, production, process quality and innovation. Management and entrepreneurship skills are in demand as they form an essential part of the cooperatives. This is in line with Bijman and Oijen (2013) findings which show that the new generation of cooperatives are adopting professional management. The presence of these features will have a positive impact on the economic performance of small-scale agricultural cooperatives. Household characteristics in the study gave a snapshot of the profile of cooperatives and an insight into areas of intervention in the model. The following chapter covered methodology.

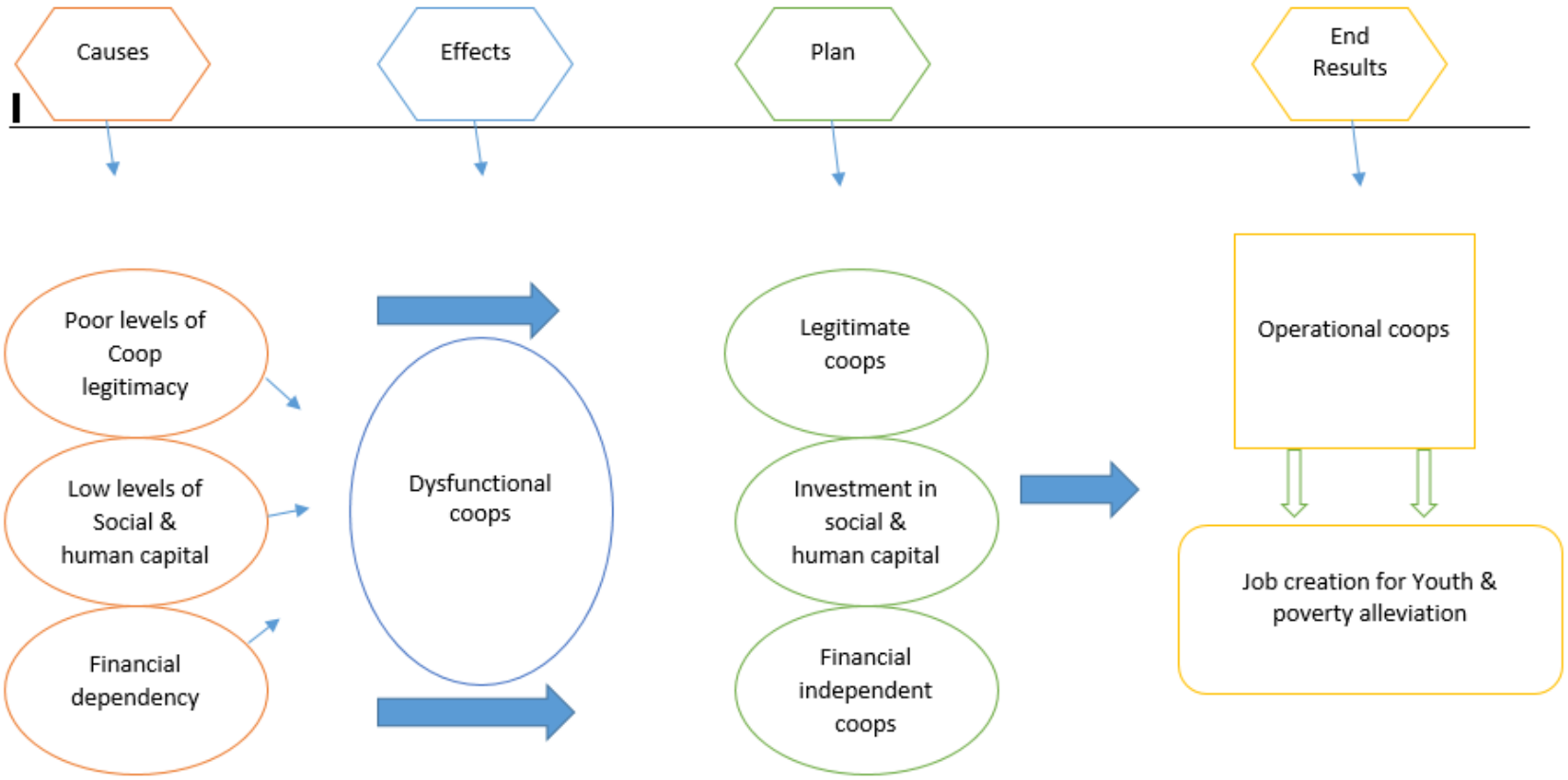


Figure 2. Conceptual Framework

CHAPTER 3

METHODOLOGY

3.1 Introduction

The main purpose of this chapter was to consolidate all the study objectives, analysis techniques that were used in the study. The chapter covered the location of the study, socio-economic characteristics of the study area, population and sampling, objectives and data analysis techniques per objective. The objectives results will be further discussed in separate chapters to follow.

3.1.1 Location of the study area

Limpopo Province has a total land area of 125 754 km² making it the 5th biggest in the country. The total land area represents about 10% of total surface area of South Africa. The Province has five district municipalities and 25 Local Municipalities. Polokwane is the capital city of the Province. Communal land an important aspect of development in Limpopo since 74.4% of local dwellings was located in a traditional area, compared to a national average of 27.1% in 2011 (LDP 2015/2019). Below is a map of South Africa in Figure 3.

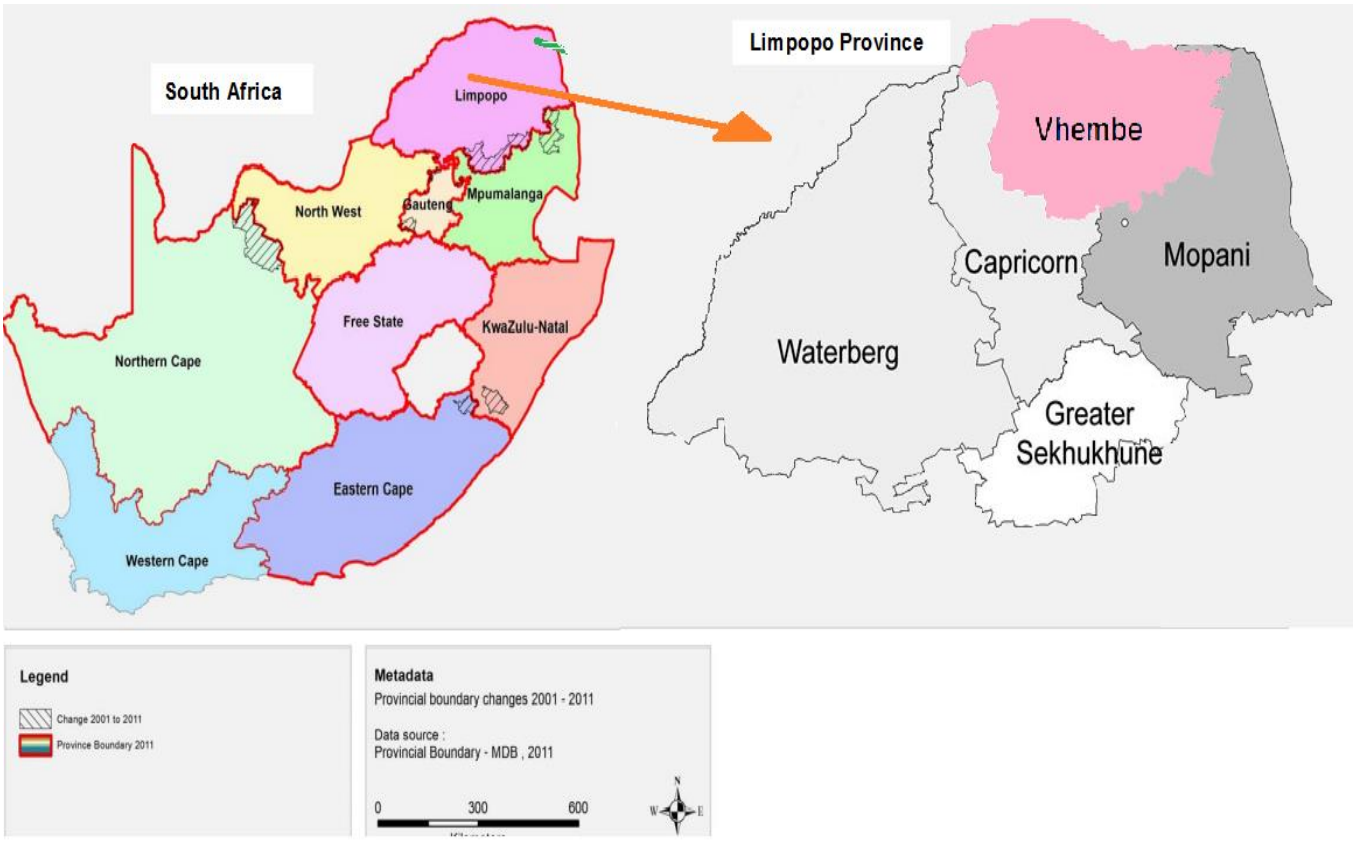


Figure 3. A map of Limpopo Province source: www.googlemaps

3.1.2 Socio economic characteristics of the study area

The population of Limpopo province consists of the following ethnic groups distinguished by culture, language and race. The population size of Limpopo Province has increased from 4.99 million to 5.4 million in 2011 hosting 10.44% of the national population (LDP 2015/2019). The province is categorized by high out-migration of young people to Gauteng province in search for jobs creating population pyramids with bigger proportion for older age groups in the province. People migration out of Limpopo to Gauteng is due to the fact that economic activity and job opportunities are highest in the country. Limpopo is ranked the third highest province with out-migration compared to the other provinces in the country. The trend suggests low levels of economic activity in the province due to vast

rural expanses. Literacy levels have improved in the province as 20.1% of people were without formal education in 2002 as compared to only 11.6% in 2012.

Most dominant ethnic group in the province is the Northern Sotho (Sepedi) (57%). The second dominant ethnic group is the Tsonga (Shangaan) (23%). The third ethnic group is Venda (12%). While the Afrikaners ethnic group (2.6%) and the English ethnic group (0.5%) is less dominant (Limpopo provincial government, 2016). According to STATSSA (2016) there are about 164 000 people employed in the Limpopo province. About 120 000 people are working in the agriculture workforce.

Limpopo province is basically a rural area without large cities except for the capital city Polokwane. Approximately 12% of the population is situated in urban areas while 88% is situated in rural towns and villages in former homelands areas. About 4860 farms in excess of 4 million hectares have been redistributed to black people and communities. There are four main land tenure types in Limpopo Province that could be divided into commercial land (owned by banks), privately owned land, state land and communal land (under the leadership of Traditional Authorities) (LDP 2015/2019).

The Limpopo Province is situated in the North Eastern corner of South Africa and shares borders with Botswana, Zimbabwe and Mozambique. It forms a link between South Africa and countries in sub-Saharan Africa. The Limpopo offers a mixture of exceptional scenic landscape, an attractive cultural heritage, an abundance of wildlife species and many nature-based tourism opportunities. The Limpopo Province is the bread and fruit basket of South Africa, producing up to 60% of all fruits, vegetables, maize meal, wheat and cotton in the country. Limpopo is also one of South Africa's richest agricultural areas. The

fact that Limpopo province is the bread and fruit basket positions cooperatives for success.

More than 45% of the R2-billion annual turnover of the Johannesburg Fresh Produce Market comes from the Limpopo Province. The province is endowed with abundant agricultural resources. It is one of the country's prime agricultural regions noted for the production of livestock, fruits, vegetables, cereals and tea. The province produces about 75% of South Africa's mangoes, 65% of its papayas, 36% of its tea, 25% of its citrus, bananas and litchis, 60% of its avocados, 60% of its tomatoes, 285.000 tons of potatoes and 35% of its oranges. One of the major players is ZZ2 (Pty) Ltd which is the largest privately-owned producer of tomatoes in the world. The company supplies 40% of South Africa’s tomatoes (The Limpopo Tourism Agency (LTA), 2014). It is evident that abundance of agricultural activities in the province creates economic opportunities for agricultural cooperatives.

3.1.3 Spread of agricultural cooperatives in the study area

As of date there are 479 agricultural cooperatives on the CODAS system (CODAS, 2016). This is the latest number of agricultural cooperatives in the province as of June 2016.The number of cooperatives does not necessarily reflect the number of cooperatives existing on the ground but only those registered with Companies and intellectual Property Commission (CIPC).

3.1.4 Description of the study area

Limpopo as a province creates agribusiness opportunities for cooperatives due to its favorable climate and vegetation. Limpopo was in the third place of the provinces engaged in agriculture in South Africa (16, 6%) in 2016. Within the provinces, Limpopo was amongst the province with the highest proportion of households that were engaged in agriculture in 2016 by 24, 1% while in 2011 it was by 33, 0% (STATSSA, 2016). There has been a clear decline on household engagement in agriculture over the past five years. However, household engagement in agriculture is crucial as Limpopo has been reported to be more vulnerable than other provinces in the country when food prices rise. The poverty headcount in Limpopo has increased from 10, 1% in 2011 to 11, 5% in 2016. At the same time agriculture, forestry and fishing industry has been in decline for eight consecutive quarters in South Africa (STATSSA, 2016). The need for functional cooperatives is more important than ever hence the study advocates for functional cooperatives in order to rural development by reducing poverty and unemployment. The following section explains the research design.

3.2 Research Design

Denzin and Lincoln (2011) indicated two types of inquiries in research as qualitative and quantitative method while the combination of the two forms mixed methods. Mixed methods can be used in order to integrate qualitative (open-ended without pre-determined responses) and quantitative (usually close-ended responses) research data (Johnson and Onwuegbuzie, 2004). The essence of mixed methods resides in the fact that all methods are biased and have weaknesses. The collection of both data neutralizes the

weaknesses of the other methods (Creswell, 2014). Thomas and Hodges (2010) stated that there is no single correct or best research design to use rather there are various approaches that people can choose from and mix together in order to create their own unique approach. Mixed Method was used in this study to investigate the determinants of cooperative formation and to explore the social, human and household characteristics on economic operation of cooperatives. The study used survey questionnaires, face to face interviews and one focus group. The Mixed Method approach was adopted because of its ability to collect rich information of the phenomenon being studied (Hanson et al., 2005).The quantitative methods in this study measured the relationships of variables while qualitative methods explored experiences and perception of respondents.

3.3.1 Unit of analysis

Unit of analysis is a basic element of research which may be used to generalize the results. In this study agricultural cooperatives in Limpopo Province constituted the unit of analysis. The agricultural cooperatives were cash crops farmers.

3.3.2 Sampling procedure

Kumar (1996) classified sampling design into three types, that it, probability, non-probability and mixed sampling method. Krosnick (1999) indicated that in probability sampling the entire population is included (or at least every agent is given an equal opportunity to participate) while in non-probability and mixed sampling the inclusion of the whole population is difficult. Mixed sampling incorporates both probability and non-probability sampling methods which are multistage in nature (Leedy and Ormrod, 2001). In this study mixed method sampling method was adopted. The overall purpose of mixed

sampling method was to generate a sample that will answer the quantitative and qualitative research questions in the study. The selection of the sample was made through expert judgement (Teddlie and Yu, 2007). Concurrent mixed method sampling technique was used.

The technique involves both probability and purposive sampling procedure at the same time (Teddlie and Tashakkori, 2003). It is a procedure where a single sample generated through probability and purposive sampling is used to generate qualitative and quantitative data at the same time. The questions in the questionnaire had open-ended and closed-ended questions. The probability aspect in this study was the fact that initially the study intended to interview all 268 agricultural cooperatives in the province which constituted the population. This meant that all cooperatives were given an equal chance of participating in the study.

The purposive aspect of the study came in when it was discovered that amongst the 268 agricultural cooperatives some never started operating but were merely registered. This development meant that such cooperatives were not going to yield any data for the research since they never started at all. The researcher then decided to purposively select cooperatives which were known to have been operating and accessible by the local extension officers. The sample was drawn from the five district of the Limpopo Province namely, Vhembe, Mopani, Capricorn, Waterberg and Sekhukhune. From the district, sample was purposively drawn from 21 municipalities. The figure 4 below illustrates how mixed sampling method was used in the study.

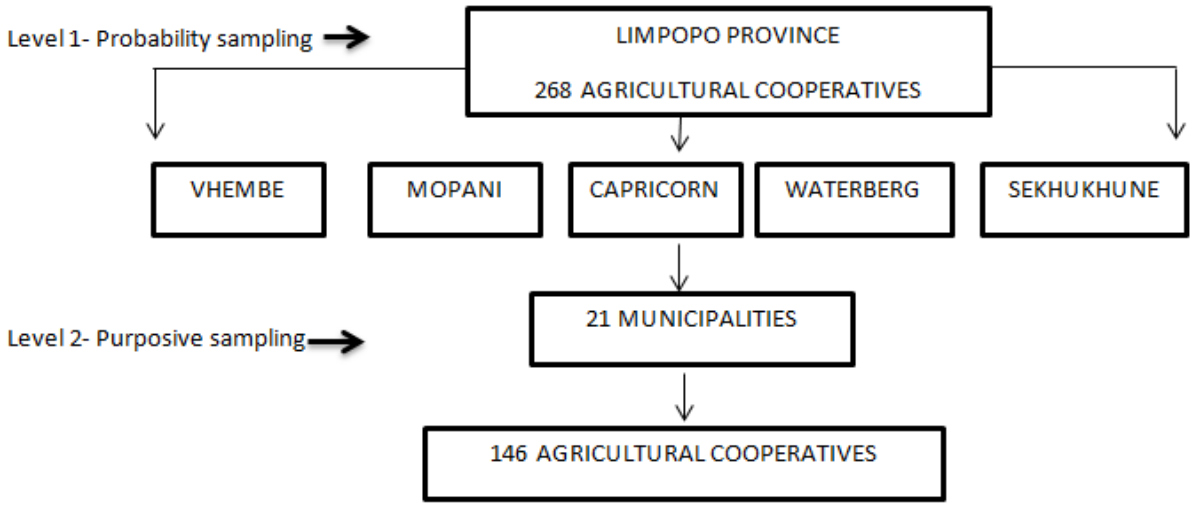


Figure 4 Sampling procedure

3.3.3 Sample size

Bless and Smith (2000) alludes that there are various advantages of using the whole population as a sample when conducting research. The main advantage is that data from the whole population is a true reflection of the population. It is also a more reliable form of data when compared to sample data. The use of the whole population in this study was the main intention, however it was later found not to be feasible. This emanated from the fact that the 268 agricultural cooperatives on the population database were not a true reflection of operational or existing cooperatives in the province but a statistics of cooperatives registered with the Department of Trade and Industry (DTI). The implication was that most cooperatives only had a paper (certificate) as a proof of existence. The study therefore sampled 146 agricultural cooperatives with the help of extension officers from Limpopo Department of Agriculture and Rural Development (LDARD) from 21 municipalities. The procedure was purposive as the sample was drawn based on the

existence and accessibility of the cooperative within the municipalities. This was crucial as the researcher had to go to the cooperatives locations with the extension officers. Purposive sampling is employed when a specific group of cases is a major focus of the investigation (Teddlie & Yu, 2007). Figure 5 shows the distribution of respondents per districts and municipalities.

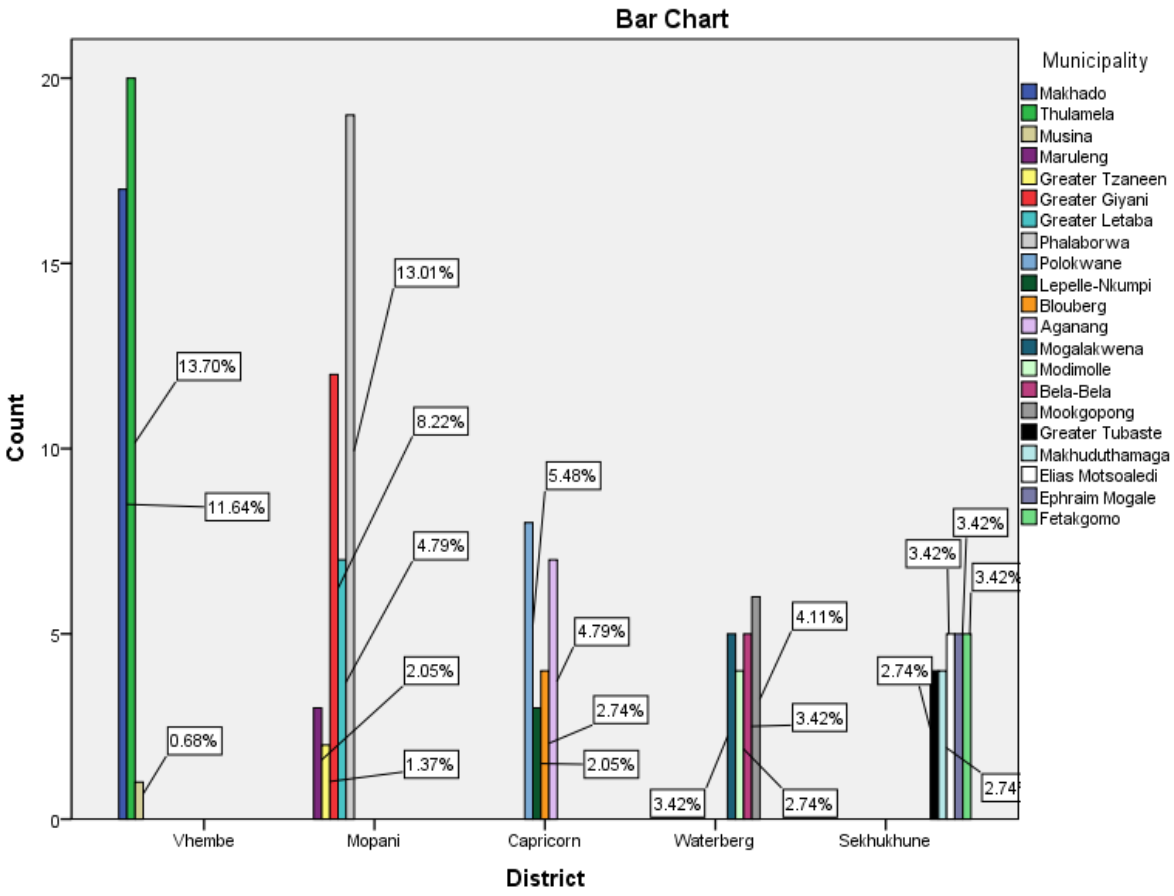


Figure 5 Distribution of respondents from districts and municipalities

3.3.4 Data collection methods

A structured questionnaire was used as a primary data collection tool. Prior to the main survey two questionnaires were pre-tested in Makhado municipality. The pre-testing

informed the additions and amendments of manufactured capital, natural capital and financial capital, extension officer's service and income period. The questionnaire referred to in annexure 2 was designed to capture information on five various categories which were divided into five sections. Section A covered household characteristics and human capital, section B covered cooperative formation background, section C covered social capital, section D the covered contribution of cooperatives to livelihoods and section E covered recommendations.

Data was collected over a three months period during the month of November, December and January with two trained enumerators. The research team was accompanied by the extension officers to the cooperatives locations during data collection. Leaders of the cooperatives were interviewed face to face. In the absence of the leaders, delegated cooperative members were interviewed. Interviews were carried out in the local languages. In Sekhukhune, Waterberg and Capricorn language used was Sepedi. In Mopani district Xitsonga language was used while in Vhembe district both Xitsonga and Tshivenda language was used. As indicated by Bless and Smith (2000) face-to face interviews are good as they minimize errors and misunderstanding.

3.3.4.1 General description of the population and ethics

The study focused on Small-scale agricultural cooperatives in Limpopo Province. As of April 2014, there were 268 registered small-scale agricultural cooperatives in CODAS (Cooperative Data Analysis System) (CODAS, 2014). Small-scale agricultural cooperatives varied according to agricultural commodities, for example, there were cash crops, poultry, livestock, mixed farming, fruit, input supply, herbs and dairy cooperatives.

The population size was 268 as reflected on the 2014/2015 CODAS database. The initial plan was to interview all 268 cooperatives in the province. It was discovered at the district that most cooperatives from the database were not known at the municipal level. Purposive sampling was then used to locate 146 cooperative from 21 municipalities which were known, available and accessible by the municipal officials (See Annexure 6-9). Purposive sampling technique was chosen after a discovery that most cooperatives reflected on the CODAS database were indeed registered but most of them had not yet started while others were unknown. As a result purposive sampling had to be adopted wherein only available and existent cooperatives were picked from the district level. The study targeted cooperatives respondents from the management team. Where members of the management team were not available ordinary members were delegated to represent the cooperative in the study. The variance of capacity amongst the respondents could give broader insight of group cohesion

The study involved 146 cooperative respondents in leadership. The main reason for targeting members in the leadership is to maximise access to information. The cooperatives are spread across twenty two local municipalities found in five districts in the province. Cooperatives that were used in the study were those registered in the CODAS database from the Department of Agriculture and were known by the local agricultural office. This was to ensure accessibility to these cooperatives. The study only focused on small-scale agricultural cooperatives due to the fact that development focus is on small-scale agricultural cooperatives. The study requested permission from the Limpopo Department of Agriculture to facilitate contact with the members of the

cooperatives. Extension officers in the municipalities were used to introduce the research team to the co-operators.

3.3.4.2 Primary and Secondary data

Data was collected from secondary and primary sources. The data that was collected from secondary source was the number of agricultural cooperatives registered in the Limpopo province from the national database for cooperatives called CODAS. The database is open source and permission was open. The primary data was collected from 146 cooperatives representatives. The Limpopo Department of Agriculture and Rural Development (LDRAD) were contacted through email to seek permission to conduct the study in the province. The email was addressed to the office of the Head of the Department. The research services division was handed over the request by the HOD office. The research services sent a message requesting the full research proposal document. The main supervisor was consulted concerning the contents of the proposal before sending it. The Deputy Director called acknowledging the receipt of the proposal and organised a meeting. The meeting was supposed to suggest a date for presentation to the research panel however because the proposal was already approved at the university level and also due to time constraints the director gave a go ahead. Because an official letter for kilometres was not released it was agreed that most officials had to use the research team car to go to the cooperatives. The research team was then linked to all the five district senior managers from head office.

The first district to be visited was Sekhukhune district wherein a meeting was held first at the district. The senior manager introduced the team which was composed of the principal

researcher and two enumerators to the district managers and the district agricultural economist who coordinated municipal agricultural economist to work with the team as these were key officials in the study. The same introduction took place in Waterberg, Mopani, Capricorn and Vhembe district.

The initial design was that cooperatives were to be sampled randomly from the CODAS database. The plan later failed as it was discovered at the district level that most cooperatives appearing on the CODAS were not known at the district level. The implication was it was no longer going to be possible to have random sampling as the population size had reduced drastically from 268 agricultural cooperatives to unknown number. As a result the municipal agricultural economist had to select the cooperatives they knew only from the database as it was going to be possible to visit them. Cooperatives which were known to be existent were chosen and calls were made from the district to the cooperatives to ask for permission to visit the cooperatives. Due to time constraints cooperatives members were contacted by extension officers to delegate 2 members of cooperatives if it was not possible to get all members and in cases wherein the leadership was not available relevant members were to be delegated. Municipal managers allocated officials that were going to accompany the research team to the cooperatives. The research team was accompanied by officials to the cooperatives. Upon arrival officials introduced the team and explained the purpose of the research to the farmers. The principal researcher then asked the participants to sign the consent form after granting the permission to participate in the study as a sign to confirm that they were participating voluntarily and with knowledge of the study.

The principal researcher firstly explained the purpose of the research, explained the rights of the participants and the options they had in the study and also explained that there were no direct benefits after the study. After the participants had agreed questionnaires were used to collect data. The questions were translated into the local languages such as Sepedi, Tsonga and Venda as the principal researcher understands all of them very well. There was no incident were participants changed their mind to participate during the site visits, however some participants did not sign but only provided their names and contacts that could be used for verification. The research team asked for permission to take pictures and pictures of cooperatives were taken. In most areas cooperatives members asked how the study will benefit them and if they will get feedback.

The cooperatives were not promised direct feedback but were assured that the outcome of the study will be used for engagement with the stakeholders in platforms such as conferences and dialogues. The cooperatives were informed that a report will be given to the research services division of LDRAD and publications will be published on LDARAD research services website if granted permission. One focus group was also used to collect data. The reason why only one focus group was used was due to budget constraints as members of cooperatives were in various villages. Assembling members in one place meant a budget for transportation for members. The data was meant to give the researcher an overview of cooperatives member expectations. The main reason for the focus group was mainly to give the researcher an indication of how members perceive their own cooperatives. Understanding of how members identified their own cooperatives was critical when developing the framework. The focus group discussion was based on

the challenges that members were facing and possible solutions. The focus group was formed by a group of Benfarm cooperatives members who were attending a workshop on cooperatives management in Mopani district. About 13 cooperatives members and 1 youth cooperative were present and two officials from the Department of Agriculture district. Focus groups were supposed to be held at every district as per proposal but in reality it was no longer feasible as suggested by the officials because there were financial implications of providing transport to participants which was not budgeted for. It was then agreed that it will be better to target events such as workshops instead. As a result the study only managed to have one focus group in Mopani District. The discussion was recorded on iPad mobile device.

3.3.5 Data analysis

3.3.5.1 Descriptive Analysis

Descriptive analysis is in the discipline of quantitative research and is useful in describing main features of variables used. In this study it was useful in analyzing the cooperative characteristics. Cross tabulations were used to describe and compare cooperatives characteristics within the study for the following parameters age, gender, marital status and education level. It was further used to describe cooperative formation process (whether they were self-initiated or externally initiated).

3.3.5.2 Inferential analysis

Three models were used to measure the relationships between variables, that is, Binary, Discriminant and Multinomial regression models.

3.4 Addressing the study objectives

The following subsections provide how the major and sub-objectives of the study were addressed. The intention is to thoroughly investigate all objectives such that each can be comprehensively handled in clearly demarcated chapters**.**

3.4.1 To investigate the formation of agricultural cooperatives

3.4.1.1 Main sub-objective

The main sub-objective is investigating the legitimacy of the various cooperatives in terms of whether their formation was self-initiated (legitimate) or through external influence (illegitimate).

3.4.1.2 The specific sub-objectives are to assess:

- To assess the impact of selected socio-economic factors on legitimacy of cooperatives

3.4.1.3 Sub-objective hypotheses

- Socio-economic factors will impact on legitimacy of cooperative formation

3.4.1.4 Data analysis

The legitimacy of cooperatives was measured based on their formation, consequently those cooperatives that were formed through owner initiative were considered legitimate while those that were formed through external influence were regarded as being illegitimate. Legitimacy on the bases of the above was considered a dependent variable

for a logistic regression model that had several variables as predictor (independent) variables.

The Binary Logistic Regression Model (BLRM) was used to determine whether socioeconomic factors (See Table 3.1) had an effect on economic operation of cooperative. The main advantage of BLRM is that it allows analysis across two categories. In BLRM, a single outcome variable Y_i *(i =1,..., n)* takes a Bernoulli probability function that takes on the value of 1 with probability P_i and 0 with probability $1\text{-}P_i.P_i/1\text{-}P_1$ and is referred to as the *odds of* an event occurring (Greene, 2003). The model can be expressed as:

$$\pi_i = \frac{e^{z_i}}{1+e^{z_i}} = \frac{1}{1+e^{z_i}} = \frac{1}{1+e^{-z_i}} \quad \text{.....equation 1}$$

or

$$Z_i = \log\left(\frac{\pi_i}{1-\pi_i}\right) \text{.....equation 2}$$

Where: π_i =probability of the i^{th} case; Z_i = value of the independent variable for the i^{th} case. The model assumes that Z is linearly related to the predictors. Thus:

$Z_i = b_o + b_1X_{i1} + b_2X_{i2} + \ldots + b_pX_{ip}$ .....equation 3

Where: X_{ij}= predictor for the j^{th} case;

b_j=j^{th} coefficient and

p=number of predictors.

Since Z is unobservable, the predictors are related to the probability of interest by substituting Z in equation.

$$\pi_i = \frac{e^{z_i}}{1+e^{z_i}} = \frac{1}{1+e^{z_i}} = \frac{1}{1+e^{-(b_0+b_{i1}X+...+b_pX_p)}} \quad \text{.....equation 4}$$

In the regression context, it is assumed that there is a set of predictor variables, $X_1,..., X_k$, that are related to Y and, therefore, provide additional information for predicting Y (Greene, 2003).

Logit (P_i) = ln (P_i / 1-P_i) = α + $\beta_1 X_1$ + …+$\beta_n X_n$ + ^{U}t .....equation 5

Where: ln (P_i / 1-P_i) = Legitimacy of cooperative formation (Legitimate or Illegitimate).

P_i = Cooperatives initiated by members themselves (legitimate).

1 - P_i = Cooperatives initiated through external influence (illegitimate).

β = coefficient;

X_i = covariates;

^{U}t = error term.

When the variables are fitted into the model in equation 5, the model is expressed as:

ln (P_i / 1-P_i) = α + $\beta_1 X_1$ + $\beta_2 X_2$ + $\beta_3 X_3$ + $\beta_4 X_4$…..+ ^{U}t

ln (Legitimate / illegitimate) = α + β_1 GEN + β_2 AGE + β_3 MARS + β_4 NOH+ β_5SEI+ β_6EMS+ β_7KOPA + β_8ME + β_9LED+ β_{10}PF+ β_{11}TR + β_{12}CG + β_{13}MA + β_{14}IA + ...Ut

Table 3. 1 Description of independent variables

Variable name description		*Type of measure*	*Expected sign*
D	Cooperative formation	0 =Externally initiated,1= Self-initiated	
IA	Information access	1=Agree; 0 =Disagree	+
GEN	Gender	0=female, 1=male	+
Age	Age	Numbers	-
MARS	Marital status	0=other,1=married	+
TR	Training	1=None,2=one session,3=multiple session	+
SEI	Source of extra income	0=none ,1=child grant, 2=pension, 3=welfare, 4=remittances	+
EMS	Employment status	0=Unemployed, 1= formerly employed, 2=part time, 3=self-employed, 4= pensioner	+
ME	Member affiliation	0= none, 1= farmer ass. 2=secondary coop, 3= business ass.	+
LED	Educational level	0=none, 1= primary, 2= secondary, 3=matric 4=post matric	+
NOH	Number of workers in household	Numbers	+
CG	Coop grouping	0=diverse,1= family	-
KOPA	Knowledge of coop principles & act	1=before 94,2=94-99,3=2000-2010,4=2006-2010,5=2011-2015	+
MA	Market access	0=no,1=yes	+
PF	Promise of funding	1=none,2=government,3=other	-

Source: Survey Results, 2015

3.4.2 To determine effects of social, human capital variables and household characteristics on economic operation of cooperatives

3.4.2.1 Main sub-objective

The main sub-objective is investigating effects of social, human capital and households on economic operation of cooperatives.

3.3.2.2 The specific sub-objectives are to assess:

- Effect of social, human capital and household characteristics on access to funding

3.3.2.3 Sub-objective hypotheses

- Social, human capital and household characteristics have a positive influence on the economic operations of cooperatives (measured by access to funding)

3.3.2.4 Data analysis

The first sub objective was to assess the effect of social, human capital and household characteristics on economic operation of cooperatives. There are many indicators of economic operation that could have been used. For this specific objective, economic operation was measured on the basis of access to funding by cooperatives in the study area. This was due to the fact that it was crucial to see stakeholder's involvement in funding as well as the income generation ability. The dependent variable was access to funding while independent variables were social, human capital and household characteristics reflected in Table 3.2.

Table 3. 2 Social, human capital and household characteristics variables used in access to funding

Variable name description		*Type of measure*	*Expected sign*
D	Access to funding	1 =Below R40 000, 2=R40 001 to R500 000,3=above R500000	
		Social capital variables	
MSH	Member share information	1=Agree; 0 =Disagree	+
MSU	Member support in time of need	1=Agree; 0 =Disagree	+
MET	Meeting attendance	1=Agree; 0 =Disagree	+
FC	Financial contribution	1=Agree; 0 =Disagree	+
MSE	Member support on social event	1=Agree; 0 =Disagree	+
AGM	Coop host AGMs	1=Yes; 0=No	-
MVM	Method of voting	1=do not vote; 2=hands; 3=ballot	+
IA	Information access	1=Agree; 0 =Disagree	+
RBE	Relatives of members benefited	1=Agree; 0 =Disagree	+
		Human capital variables	
KOPA	Knowledge of coop principles & act	1=none;2=poor;3=fair;4=good;5=very good	+
LED	Educational level	0=none, 1= primary, 2= secondary, 3=matric 4=post matric	+
WCA	Workshop on coop act	1=Yes; 0=No	-
CTR	Training by Coop	1=Yes; 0=No	+
TR	Training	1=None,2=one session,3=multiple session	+
ME	Member affiliation	0= none, 1= farmer ass, 2=secondary coop, 3= business ass.	+
GEN	Gender	0=female, 1=male	+
Age	Age	Numbers	-
SEI	Source of extra income	0=none ,1=child grant, 2=pension, 3=welfare, 4=remittances	+
EMS	Employment status	0=Unemployed, 1= formerly employed, 2=part time, 3=self-employed, 4= pensioner	+
NOH	No. of workers in household	Numbers	+
MA	Market access	0=no,1=yes	+
DSIZ	Dependents size	1=1 to 2,2=3 to 4, 3=5 to 5, 4=7 to 8,5=9	-
CYR	Coop formation year	1=before 94,2=94-99,3=2000-2010,4=2006-2010,5=2011-2015	+
CDE	Coop has debts	0=disagree,1=agree	-
BAC	Coop bank account	0= Disagree, 1= Agree	+
CIG	Coop annual income group	1=less than R10 000; 0=more than R10 000	+

Source: Survey Results, 2015

Multinomial Logit (MNL) model was used to assess how social, human capital and household characteristics affect economic operation of cooperatives. Access to funding as a dependent variable had three categories namely, below R40 000, R40 001 to R500 000, above R500 000 funding. The model is widely used in studies involving multiple choices that define the dependent variable (Gujarati and Porter, 2009). Following Greene (2003), assuming that the probability that the i^{th} cooperative respondent gets the j^{th} of

3 categories is P_{ij} , the probability that a cooperative receives funding from alternative j can be explained by a MNL.

The empirical MNL model was specified as:

$$P_{ij} = \ln(P_j / P_1) = \beta_0 + \beta_1 PX1 + \beta_2 PX2 + \beta_3 Other + \mu_i$$

Where:

β_0.....β_6 = the parameters that were estimated

P_{ij} is the probability of access to funding category $_j$ being received by coop $_i$, and

$_j$ = 1, Below R40 000; $_j$ = 2, R40 001 to R500 000; $_j$ = 3, above R500 000

Fitted model is expressed as:

$Y_{i = 1...J} = \beta_0 + \beta_1 PC1 + \beta_2 PC2 + \beta_3 AGE + \beta_4 MARS + \beta_5 NOH + \beta_6 SEI + \beta_7 EMS + \beta_8 ME + \beta_9 MA + \beta_{10} DSIZ + \beta_{11} GEN + \beta_{12} DST + \beta_{13} DSS + \beta_{14} TR + \beta_{15} CYR + \beta_{16} CG + \ldots\ldots \mu_i$

3.4.3 To assess the determinants of contribution of smallholder agricultural cooperatives to livelihoods in Limpopo Province

3.4.3.1 Main sub-objective

The main sub-objective is to investigate factors that can be used to discriminate between cooperatives which received monthly salary for their members and those that did not.

3.4.3.2 The specific sub-objectives are to assess:

- To assess socio-economic factors discriminating cooperatives receiving salaries and those who are not

- investigate benefits received by members

3.4.3.3 Sub-objective hypotheses

- There are major differences between cooperatives receiving salaries and those not receiving
- There other benefits received by members

3.4.3.4 Data analysis

Descriptive statistics was used to assess socio-economic characteristics through frequencies. Discriminant analysis (DA) method was further used to discriminate between those respondents who had monetary benefits in a form of a monthly salary from those who did not have monetary benefits such as salary. The discriminant analysis was an appropriate technique to use in this study in order to identify any significant differences that can be used to separate the two groups (those earning a salary and those not earning a salary from cooperative).The independent variables are described in Table 3.3.

The model can be expressed as follows:

$$D_{i=}\ \beta_0 + \sum_{k=1}^{\rho} \beta_k\, X_k \qquad (1)$$

$$D_{i=}\ \beta_1\, X_1 + \beta_2 X_2 + \beta_3 X_3 \ldots\ldots \beta_k X_k \qquad (2)$$

Where

$D_{i=}$ The ith score on the discriminant function

$D_{i=}$ Cooperative contribution

$\beta_{k=}$ Coefficients estimated;

$X_{k=}$ Independent variables

The proposed empirical fitted model as follows:

$D_{i=} = X_1 CYR + X_2 CG + X_3 KOPA + X_4 WCA + X_5 EXT + X_6 MA + X_7 CIG + X_8 FC + X_9 IA + X_{10} DMI$

Table 3. 3 Table of dependent and independent variables used in the discriminant Analysis

Variable name description		*Type of measure*	*Expected sign*
D	Coop salary	0= No, 1= Yes	
		Social capital variables	
FC	Financial contribution	1=Agree; 0 =Disagree	+
IA	Information access	1=Agree; 0 =Disagree	+
DMI	Decision making involvement	1=Agree; 0 =Disagree	+
		Human capital variables	
KOPA	Knowledge of coop principles & Act no14. Of 2005	1=none;2=poor;3=fair;4=good;5=very good	+
WCA	Workshop on coop act	1=Yes; 0=No	-
EXT	Extension service satisfaction	0=no,1=yes	-
CG	Coop grouping	0=diverse,1= family	-
MA	Market access	0=no,1=yes	+
CYR	Coop formation year	1=before 94,2=94-99,3=2000-2010,4=2006-2010,5=2011-2015	+
CIG	Coop annual income	0=more than R10 000, 1=less than R10 000	+

Source: Survey Results, 2015

The subsequent chapters presented results from the first, second, third and fourth objective. Followed by the last chapter presenting the developed framework.

CHAPTER 4

FORMATION OF COOPERATIVES

4.1 Introduction

The aim of this chapter is to investigate the legitimacy of small-scale agricultural cooperatives in Limpopo Province based on the manner in which they were formed. For ease of explanation, this study will consider those cooperatives that were formed through self-initiative by members as “legitimate”. Those formed through external influence will be considered as “illegitimate”. The underlining reason for adopting this strategy emanates from the fact that literature is abound with high attrition rates of smallholder agricultural cooperatives, not only in Limpopo Province but also throughout the entire country. In the first instance descriptive analytical techniques will be used to assess the impact of various socio-economic factors on cooperative formation (through cross tabulations). Thereafter logistic regression on modeling will be used to analyze cooperative formation on the basis of the two categories (external formed vs internal influence). Details of how the regression model was formulated appear in Chapter 3. The study is mindful of the fact that cross tabulations is not commonly used as data analytical technique in most of the literature. However, it is a very useful tool in assessing the relationship between categories of two variables, one dependent on the other. The SPSS computer program is quite capable of capture and analysing these relationships, provided the variables are correctly captured into the program (i.e. dependent and independent variable in columns and rows respectively). The researcher is familiar on how to explain the outcome/output emanating therefrom. It is important to emphasize that the variable entering technique is not a haphazard process but one that follows a unique procedure.

4.2 Presentation of results

4.2.1 Assessment of the relationship between cooperative formation and socio-economic characteristics of respondents in Limpopo Province

As articulated in the introduction above, the aim of this section is to assess the extent (in percentage terms) of the relationship between the formation of cooperatives and various socio economic characteristics of cooperative leaders (the study focus units).

Table 4. 1 The relationship between cooperation formation and socio-economic characteristics of leaders of cooperative leaders in Limpopo Province

Socio economic characteristics		Manner in which cooperative was formed (%)		Proportion (%)
Variable	Category	externally initiated (Illegitimate)	self-initiated (Legitimate)	
Gender	Female	29.5	23.3	52.7
	Male	19.2	28.1	47.3
Age group	Youth (35 years and below)	6.2	6.8	13.0
	Adults (36-65 years)	30.8	32.9	63.7
	Elderly (66 years and above)	11.6	11.6	23.3
Marital status	Married	31.5	34.9	66.4
	Divorced	0.7	1.4	2.1
	Single	13.7	13.7	27.4
	Widowed	2.1	1.4	3.4
	Living together	0.7	0.0	0.7
Coop grouping	Diverse	43.8	48.6	92.5
	Family	4.8	2.7	7.5
Total		48.6	51.4	100.0

Source: Survey Results, 2015

In Table 4.1 cooperative formation was compared to the gender, age group, and marital status of the leadership of cooperatives in Limpopo province. Specifically the two categories of cooperative formation (external-reflecting illegitimate formation processes) and self-initiated (a proxy for legitimacy in this study) are compared to those of various socio-economic variables. The table shows that in addition to the dominance of female cooperative leaders (52.7%) most illegitimate cooperatives were also ascribed to this

gender (29.5%). The proportions of legitimate cooperatives were formed by males (28.1%). The adult components of the cooperative leaders were the most dominant within the smallholder agricultural cooperative sector in Limpopo Province. Interestingly this is the age group that dominated the legitimately formed smallholder agricultural cooperatives in Limpopo Province. Besides being in the extreme minority (13%) of cooperative leaders, majority of cooperatives led by youth were legitimately formed (i.e. were mostly self-initiated).

Elderly cooperative leaders (those beyond 65 years old) were equally spread in terms of cooperative formation influence (11.6%) each. The table shows dominance of married cooperative leaders (34.9%) in legitimate cooperatives while cooperatives led by singles were equally spread in both illegitimate and legitimate groups. The study was dominated (92.5%) by cooperatives members who were non-related (diverse). The essence of cooperative grouping as a variable in the study was to see if there would be any significance difference in the general operation of cooperatives considering members relations. Most of the diverse cooperatives were legitimate.

4.2.2 Assessment of the relationship between cooperative formation and socio-economic characteristics of respondents in Limpopo Province

In Table 4.2 cooperative formation is compared to the training, knowledge of cooperatives principles and Act No. 14 of 2005, educational level, employment status, number of workers in household, promise of funding and source of the leadership of cooperatives in Limpopo province. Socio-economic variables were compared to the two categories of

cooperative formation (external-reflecting illegitimate formation processes and self-initiated-reflecting legitimacy in this study).

The result shows that the proportion of cooperatives which were legitimate is equal to that of illegitimate. Cooperative leaders who received one session of training were dominant (4.1%) in legitimate cooperatives while those who received multiple trainings were almost equally dispersed in illegitimate (30.8%) and legitimate (30.1%) categories. Results reflect that none of the cooperative leaders who had no formal education were in legitimate cooperatives. Primary education holders were equally proportioned in both legitimate (6.8%) illegitimate and legitimate (6.8%) groups. Members who had attained secondary education dominated the legitimate group. Generally the spread of cooperatives leaders with matric (10.3% for both groups) and post-matric (9.6% for illegitimate and 10.3% in legitimate group respectively) was evenly spread across both cooperatives groups.

The study was dominated (61%) by cooperative leaders without any knowledge on cooperatives principles and act evenly spread across illegitimate (30.1%) and legitimate (30.8%) groups. Interestingly leaders who indicated that they had both good and very good understanding of cooperatives knowledge and Act were dominant in illegitimate groups (6.2%-good and 4.1%-very good respectively). Results reflects that all cooperative leaders with formal employment were in illegitimate cooperative group but the opposite was the case for leaders who were self-employed as all of them were in legitimate cooperative group only. Cooperative leaders who indicated to have been farming full time dominated in the legitimate group.

Households of cooperative leaders without any member of their family working were dominant in illegitimate group. Generally leaders with 1 to 4 working family members dominated the legitimate group except for households with 7 working members which were only found in illegitimate group. In addition to that, households without any source of extra income dominated the illegitimate group. Leaders who depended on grants (child, pension and welfare) for extra income were prevalent in legitimate group with an exception of remittance dependents. Results also reflected that majority (73.3%) of cooperative leaders in the study were not promised funding before commencement of their cooperative ventures many (42.5%) of such leaders were in legitimate group. Leaders promised funding before commencement from government and other private institutions were dominant in illegitimate cooperatives.

Table 4. 2 Cooperative formation and socio-economic characteristics of cooperative leaders in Limpopo Province

Socio economic characteristics		Manner in which cooperative was formed (%)		Proportion (%)
Variable	**Category**	**externally initiated (Illegitimate)**	**self-initiated (Legitimate)**	
Training	None	17.1	17.1	34.2
	Workshop (one session)	0.7	4.1	4.8
	Training (multiple session)	30.8	30.1	61.0
Education level	No formal education	3.4	0.0	3.4
	Primary	6.8	6.8	13.7
	Secondary	18.5	21.2	39.7
	Matric	10.3	13.0	23.3
	Post matric	9.6	10.3	19.9
knowledge of coop principles & act	None	30.1	30.8	61.0
	Poor	2.7	4.8	7.5
	Fair	5.5	8.9	14.4
	Good	6.2	4.8	11.0
	Very good	4.1	2.1	6.2
Employment stats	Formerly employed	0.7	0.0	0.7
	Temporarily employed	2.1	2.1	4.1
	Full time in farming	45.9	48.6	94.5
	Self employed	0.0	0.7	0.7
No. of workers in household	0	18.5	13.7	32.2
	1	15.8	18.5	34.2
	2	8.9	11.0	19.9
	3	2.1	6.2	8.2
	4	2.1	2.1	4.1
	7	1.4	0.0	1.4
Source of extra income support	None	13.7	11.0	24.7
	Child grant	26.0	30.8	56.8
	Pension	6.8	8.2	15.1
	Welfare grant	0.7	1.4	2.1
	Remittances	1.4	0.0	1.4
Promise of funding	None	30.8	42.5	73.3
	Government	16.4	8.2	24.7
	Other	1.4	0.7	2.1
Total		48.6	51.4	100.0

Source: Survey Results, 2015

Table 4. 3 Cooperation formation and socio-economic characteristics of cooperative in Limpopo Province

Socio economic characteristics		Manner in which cooperative was formed (%)		Proportion (%)
Variable	**Category**	**externally initiated (Illegitimate)**	**self-initiated (Legitimate)**	
Membership Affiliation	Farmer association	3.4	0.7	4.1
	Secondary cooperative	11.6	10.3	21.9
	None	33.6	39.7	73.3
	Business Association	0.0	0.7	0.7
Information access	Disagree	4.8	21.2	26.0
	Agree	43.8	30.1	74.0
Market Access	No	40.4	47.9	88.4
	Yes	8.2	3.4	11.6
Total		48.6	51.4	100.0

Source: Survey Results. 2015

Table 4.3 results shows that cooperative leaders who were affiliated to farmer association and secondary cooperatives were mostly in illegitimate cooperatives. When compared to leaders without affiliation who dominated legitimate group. Interestingly so, leaders affiliated to business organization were all in legitimate cooperatives. Majority of cooperative leaders had access to information (74.0%) while market access (88.4%) was a problem from the study. The study reflects that most illegitimate cooperatives were those with access to information while majority of leaders without market access were dominant in legitimate cooperatives.

4.3 Binary logistic regression model results

4.3.1 Introduction

The previous sections presented descriptive analysis from the cooperative respondents. This section covered the regression analysis investigating household characteristics influencing formation of cooperatives. The empirical results sought to provide the basis on which conclusions can be drawn from the study in line with the study's objectives.

4.3.2 Results from the binary logistic regression model

The model describes the relationship between the formation of cooperatives and household characteristics. The dependent variable was the formation of cooperatives and externally initiated cooperatives was the reference category, while self-initiated cooperatives were the baseline group. Cooperative formation defines group category that represents self-initiated cooperatives and externally initiated cooperatives. There were seven independent variables which were significant in the regression.

4.3.3 Significant results of variables in the model

The strength of association between the dependent variables, predictor and expected change is measured by coefficient (*β-value*). The coefficient measures the influence of the variables in the logit. In this study if the value of the coefficient value was positive, the implication was, there was an increase in the likelihood that a cooperative respondent will change to alternative option from the reference group (in this case, externally initiated cooperatives) or the baseline group (in this case, self-initiated cooperatives) (Gujarati, 1992).The negative coefficient value will imply that there would be less likelihood of

changing from externally initiated cooperatives to self–initiated cooperatives. An Exp (β) indicates the odds of change when the odd value is above 1 it implies that an increase in the likelihood of changing from externally initiated cooperatives to self-initiated cooperatives with an increase of one unit on the independent variables. The odd value below 1 indicates that as independent variables increase by one unit the odds of change from illegitimate to legitimate decreases. Results of the regression model are presented in Table 4.4.

Table 4. 4 Binary Logistic Regression Results

Variables	B	S.E.	Wald	Sig.	Exp(β)
GEN	0.807*	0.422	3.646	0.056	2.240
AGE	-0.084	0.374	0.050	0.823	0.920
MARS	-0.080	0.218	0.135	0.713	0.923
TR	0.145	0.228	0.405	0.524	1.156
NOH	0.153	0.167	0.840	0.359	1.165
SEI	-0.164	0.257	0.409	0.522	0.848
CG	-1.091	0.827	1.742	0.187	0.336
KOPA	0.131	0.172	0.575	0.448	1.140
MA	-1.536**	0.755	4.140	0.042	0.215
ME	0.720*	0.390	3.417	0.065	2.055
LED	0.333	0.207	2.589	0.108	1.395
PF	-0.614	0.424	2.098	0.148	0.541
IA	-2.131***	0.540	15.565	0.000	0.119
EMS	0.917	0.873	1.104	0.293	2.503
Constant	-3.755	3.331	1.270	0.260	0.023

R^2=0.25 (Cox & Snell), 0.33 (Nagelkerke), *p < 0.10, **p < 0.05, ***p < 0.01.

Classification results: Externally initiated = 69%

Self-initiated = 64%

Overall = 66.4%

Cut value = 0.50

The classification table predicts how well the model predicts group membership (Field, 2013). The current model classifies 49 cooperative members who are in externally

initiated cooperatives but misclassifies 22 others. At the end, the model correctly classifies 69% of the cases. The model also correctly classifies 48 cooperative members who are in self-initiated cooperatives but misclassifies 27 other members. The model then correctly classifies 64% of the cases with the overall accuracy classification at 66.4%. The overall classification results represent the degree of accuracy for the model and the reliability of the estimated coefficients.

Table 4.4 indicates that four independent variables influence formation of cooperatives significantly. Out of fourteen independent variables used in the model gender, market access, member affiliation and information access were statistically significant. However results indicate that gender and member affiliation variables could cause a shift from illegitimate to legitimate by 2.2 times and 2.0 times more respectively.

The results indicate that the gender of the cooperative respondent significantly predict whether the member belong to self-initiated cooperatives or externally initiated cooperatives. Gender had positive and significant influence on cooperative formation. As gender changes from female (0) to male (1) the change in the odds of belonging to self-initiated cooperatives compared to belonging to externally initiated cooperatives is more likely by 2.2 times. Majurin (2012) and Moyo (2014) asserted women participation in cooperatives is vital. This implies that the presence of more women in cooperatives could encourage the formation of genuine cooperatives. A positive and significant relationship was also observed on member affiliation. The odd value above one (Exp (β) =2.1) implies that it is more likely by 2.1 times for farmers to shift from self-initiated cooperatives if they affiliate to organization.

Opposite is the case for market access and information access, the odds of belonging to self-initiated cooperatives compared to belonging to externally initiated cooperatives with an increase in both variables is less likely. This is because the odds values of the two variables are below the value of 1.

4.3.4 Summary of cooperatives formation determinants

It can be concluded that variables that have a higher probability of shifting cooperative respondents from externally initiated cooperatives to self-initiated cooperatives are gender and member affiliation. The two variables influence cooperative formation implying that cooperative respondents are likely to shift from externally initiated cooperatives to self –initiated cooperatives significantly with an increase in any of the two variables. Market access (MA) and information access (IA) indicated a less likelihood of change from externally to self-initiated cooperatives.

Variables such as training, number of workers in household, knowledge of cooperative principles and Act, level of education, number of household workers and employment status had a positive relationship with cooperative formation but there was no statistically significance evidence to support the influence. Age, marital status, source of extra income, cooperative grouping and promise of funding had a negative relationship with cooperative formation and statistically significant evidence was not enough to support the negative influence.

4.4 Discussion of the results

4.4.1 Discussion of the descriptive results

The results showed that the majority of the sampled cooperatives respondents in Limpopo province were adults (35 to 65 years) and elderly. Youth participation was substantially low in the cooperatives. The findings regarding the high participation of the adults (36 to 65 years) corresponds to the trend similar to that of Fischer and Qaim (2011) in Kenya central highlands banana farmer's study. In the study it was observed that the younger generation participation in agriculture was low. A study by Mahazril, Hafizah and Zuraini (2012) on Malaysians cooperatives also confirmed the dominance of the elderly (above 36 years) as younger generation members were also not interested in forming part of the leadership in cooperatives.

Lack of youth participation has been generally associated with several factors. As much as smallholder farmers face challenges in accessing credit it has been found to be more prevalent amongst youth group (Ahaibwe *et al.* 2013). According to Leavy and Hossain (2014) another reason discouraging youth in agriculture is the problem of links to markets. The absence of the younger generation participation was also credited to the fact that youth members are more inclined to seeking jobs outside agriculture. Mainly due to the fact that poor returns to agriculture has also been pointed out as the major contributor to lack of interest in youth (Kristensen & Birch-Thomsen 2013). Access to land has also been seen as a major constraints limiting youth participation as most customary tenure regimes of accessing land do not favor youth as opposed to their lack of interest in agriculture (Amanor, 2010: Ampadu, 2012 & Leavy & Hossain 2014).

The results also showed that majority of cooperative members were married. This observation is not new in agriculture, the dominance of married participants supports the findings of Ahmadu and Ojogho (2012) in a snail production study which revealed similar trends (73% married). Toluwase and Apata (2011) had also observed similar trends of married farmer's dominance. According to societal standards being married is associated with being responsible (Onaiwu, 2011). Onubuogu and Onyeneke (2012) and Onubuogu et al. (2013) alludes that married farmers could enjoy benefits of accessing resources such as land and labor as opposed to single farmers. Afolami et al., (2012) study on rice farmers also showed similar trends of married farmer's dominance. It is then advantages for these farmers to be married in the African context as accessing resources such as land could be easy.

Most members had received multiple training sessions. Training had a positive correlation on cooperative formation. Due to lack of statistically significant evidence; having received multiple trainings did not guarantee that cooperative members would shift from externally initiating cooperatives to self-initiating cooperatives. Members had received multiple trainings in general business management focusing on bookkeeping, costing, pricing and management. The trainings were offered after joining the cooperatives. The positive relationship could be supported by the observation made by Borda-Rodriguez and Vicari (2014) that informed and skilled members are likely to understand and be committed to cooperatives.

The results also revealed that majority of cooperative members had only one person working in their households. Number of workers in household was positively correlated to

cooperative formation. The fact that unemployment is a huge problem is South Africa is not surprising that most families had fewer people working in their households.

The results also showed that majority of farmers were depending on social grant as a means of extra income. In Neves and Toit (2013) study, evidence of grant income providing seed and operating capital for retail and small-scale agrarian production was observed. This is suggestive of the fact that when farmers have access to social grants they indirectly activate trade by having buying power. This claim supports the early empirical evidence presented by Samson et al. (2004) that social grants did not encourage dependence as criticized but it improved lives and labor force because people could have money for job search in cities. In this study source of extra income was negatively correlated with cooperative formation but statistically insignificant.

The fact that majority (61%) of farmers from the descriptive results did not know the international cooperative principles and the Act governing cooperatives was a cause for concern. The expectation is that members of the cooperatives should be knowledgeable about the principles and the Act as it encompasses all issues pertaining cooperatives governance from initiation, operation and management. The question is how do they operate within these cooperatives if they do not know the principles and the Act? Knowledge of cooperatives principles and Act had a positive correlation with cooperative formation though it was not statistically significant. Problem created by lack of knowledge of cooperatives principles in South Africa creates unrealistic expectation about real benefits of belonging to a cooperative and as such when such benefits are not met cooperatives are not sustainable (Kanyane & Koma, 2014 & Kanyane & Ilorah, 2015). As supported by Altman (2015) benefits of cooperatives will be determined by the level of

understanding of cooperatives principles that underpin cooperative governance. The results reflect a situation wherein members of the cooperatives themselves do not understand what cooperatives stand for and therefore investing in this kind of an environment might be dangerous. This is supported by an observation in South Africa where there are instances in which cooperatives are not formed by people themselves but imposed on the people wherein owners of the cooperatives do not understand what cooperatives are to start with (Kwapong & Hanisch, 2013).

Yuan (2013b) also indicated that formation of cooperatives could also be initiated by village leaders for securing potential votes from the community. International agencies and Non-Governmental Organization have been identified as other civil society actors in formation of cooperatives (Zhao & Yuan, 2014). Hairong and Yiyuan (2013) alludes that most cooperatives developed thus far in China are deemed fake. Cooperatives in South Africa are also highly deemed state owned enterprises, semipublic and government controlled cooperatives (Kanyane & Ilorah, 2015).

Majority of members resorted to full time farming as a form of employment. Employment status had a positive correlation with cooperative formation though not significant. Cooperatives are believed to be instruments that can create sustainable and stable employment (Burdín, 2014). It is clear that outside cooperative activities majority of members are unemployed. The situation at hand demands cooperatives to be operational in order to support cooperative member's families. Cooperatives are regarded as one of the important tools in economic development and political stability (Liang & Hendrikse, 2013).

4.4.2 Discussion of the significant variables in Binary logistic results

The results showed that there were more women in cooperatives in the sample of the study compared to men. This means that in general women had more cooperatives opportunities. The odd of being in a legitimate cooperative was 2.2 more times if women were present. Considering that women empowerment is a priority in developmental ventures, this implies that women could easily access support if provided. The involvement of more women is then relevant in the context of women empowerment. The dominance of females reflected in the study was however encouraging. Women involvement in self-help ventures is in line with the plans of the South African government in the area of creating an inclusive environment for women empowerment (Moyo, 2014).

Women empowerment is not necessarily manifested through participation in mass politics but is also associated with participation in civil societies at local level were women voices can be heard (Nazneen et al., 2011). The nature of cooperatives governance allows woman to voice out their views through democratic control principle. Sraboni et al. (2014) affirms that the rationale for paying attention to women in agriculture is due to their ability to improve household agricultural productivity, food and nutrition security. This notion was also supported by Ohen et al. (2014) who concurred that women participation in agriculture increases production, labour and technical efficiency. The dominance of women reflects that women are more interested in opportunities that could generate money that could be used to support their families. The regression results reflect that a cooperative with more women is likely to be legitimate.

Most cooperatives respondents had no membership affiliation at all. The odds of being in a legitimate cooperative were by 2.1 times more if one was affiliated to an organization. Member affiliation represents additional exposure and knowledge about farming. It is plausible that affiliations associations could instill legitimacy of ventures as values or principles. Affiliations could also afford its members trainings that members cannot access on their own which are related to cooperative governance. As supported by Olwande and Mathenge (2012) affiliation membership carries the benefits of accessing critical information related to production and marketing.

Access to information had a negative significant influence on cooperatives formation indicating that farmers with access to information odds to self-initiate cooperatives were by reduced by 0.12 times more. The results could imply that though cooperatives had access to information; the information accessed could have been not related to cooperative operations. Generally, as stressed by Munker (2012) information sharing amongst co-operators themselves and external actors enables cooperatives to cope. Information circulating amongst members enables a learning environment for members to easily learn from each other (Busemeyer & Trampusch, 2012). This is suggestive that the information circulating was not tailor made for cooperative governance but maybe for businesses in general. The type of access referred to here was mainly information emanating from members themselves.

Binomial regression results depicted that.

- It is likely by 2.2 times more to shift from illegitimate to legitimate if there are more women in cooperatives

- Even if market access is improved, it is less likely by 0.22 times that farmers will shift from illegitimate to legitimate cooperatives
- An increase in member affiliation will results in shifting from illegitimate to legitimate cooperatives by 2.1 times more
- It is less likely by 0.12 times for farmers to shift from illegitimate to legitimate cooperatives in the event of having access to information.

The above findings would clearly be linked to the dominance of adults in the cooperatives, lack of cooperative principles and Act knowledge and the need to create an enabling environment for youth participation providing relevant information.

The following chapter covered results from objective two.

CHAPTER 5

EFFECTS OF SOCIAL, HUMAN CAPITAL AND HOUSEHOLDS CHARACTERISTICS ON ECONOMIC OPERATION OF COOPERATIVES

5.1 Introduction

The aim of this chapter was to investigate the influence of social, human capital variables and household characteristics on economic performance of cooperatives; the economic performance was measured by access to funding as a dependent variable. Access to funding refers to the grants that members of the cooperatives managed to secure from the private sector, government and own funding. From the results, the main source of funding was from the government (39%), private sector (companies and NGOs) (6.2%) and own funding (54.8%). Table 5.1 below illustrates the distribution of source of funding.

Table 5. 1 Source of funding distribution

Source of funding		Access to funding			Total
		below R40 000	40 001 to 500 000	above R500 000	
Own funding	Count	80	0	0	80
	% of Total	54.8%	0.0%	0.0%	54.8%
Government	Count	0	39	18	57
	% of Total	0.0%	26.7%	12.3%	39.0%
Other	Count	0	5	4	9
	% of Total	0.0%	3.4%	2.7%	6.2%
Total	Count	80	44	22	146
	% of Total	54.8%	30.1%	15.1%	100.0%

Source: Survey Results, 2015

The amount of money accessed by members who used own funding was below R40 000. Those funded by the government and the private sector were only funded from R40 000 and upwards. The Government sector department's involved in funding were Rural

Development and Land Reform, Social Development, Trade and Industry, Agriculture, Forestry and Fishery, and Health. Parastatals involved were Limpopo Business Support Agency (LIBSA), Small Enterprise Development Agency (SEDA) and Limpopo Development Agribusiness Corporation (LADC). Currently the three agencies have been merged with Trade and Investment Limpopo (TIL) to form the Limpopo Economic Development Agency (LEDA). From the private sector, some cooperatives were funded by South African Micro-Finance Apex Fund (SAMAF), FINSOL, Old Mutual and Rural Women Movement (RWM).

According to the ICA principles (ICA, 2015), a cooperative is supposed to be independent (self-help) at all cost. This implies that a cooperative is supposed to cater for its needs. In addition to that, there is a principle that says cooperative members themselves should economically contribute to the cooperative. This means any cost associated with the cooperative should be settled by members themselves using their own collective funds as this is in line with the cooperatives principles. Therefore a healthy cooperative will be reflected by its financial independence.

In order to draw conclusions that cooperatives in Limpopo province are financially sound, it is expected that most cooperatives should be using their own funding. Members are also expected to accrue income benefits as salaries. When cooperatives depend on own funding (self-help) it is a sign of a sound financial position in line with the ICA principles (ICA, 2015) in which South African cooperatives legal frame holds. It is important to note that funding other than own funding is also essential in cooperatives especially at a stage where the cooperative has to expand its operations. However the absence of such help should not derail the operations of the cooperatives as expected by the ICA principles

(ICA, 2015). This is to say under normal circumstances cooperatives should be able to kick start using own funds. As the cooperative intends to extend its operations sourcing external funds become necessary. The preference of using access to funding as a dependent variable was due to the fact that it was a good indication of the operations of the cooperative. The variable is able to give an indication of the extent of own funding. The indication of the financial support of cooperatives was crucial in the study. This enabled the study to draw informed conclusions about the cooperative economic operations.

Descriptive analytical techniques were used to assess the relationship between household characteristics and access to funding through cross tabulations using SPSS. In the crosstabs analysis, dependent variable (access to funding) was inputted in the column. Independent variables (social, human and household characteristics) were inputted in rows. Furthermore multinomial logistic regression modeling was used to further determine the extent of the relationship. Access to funding as a dependent variable had three categories (1= Below R40 000, 2= R40 001 to R500 000, 3= Above R500 000). Funding below R40 000 was referred to as lower funding or own funding, funding between R40 001 to R500 00 was referred to as middle funding and funding above R500 000 was referred to as higher funding in the study. Both the middle and higher funding were from government and other. Respondents under the category of below R40 000 were members who used own funding. Details of how the regression model was formulated appear in Chapter 3.

5.2 Presentation of results

The aim of this section was to assess the extent (in percentage terms) of the relationship between access to funding and household characteristics of cooperative respondents. Information was collected from cooperatives leaders. Access to funding was set as a categorical dependent variable (1= Below R40 000, 2= R40 001 to R500 000, 3= Above R500 000) which were compared to household characteristics such as gender, age group, cooperative formation year, cooperative grouping, number of workers in household, source of extra income, dependents size and employment status of the leadership of cooperatives in Limpopo province.

Table 5. 2 Household characteristics of cooperatives

Household characteristics		Access to funding (%)			Proportion (%)
Variable	**Category**	**Below R40 000**	**R40 001 to R500 000**	**Above R500 000**	
Gender	Female	26.7	19.9	6.2	52.7
	Male	28.1	10.3	8.9	47.3
Age group	Youth (35 years and below)	8.9	3.4	0.7	13.0
	Adults (36-65 years)	33.6	19.2	11.0	63.7
	Elderly (66 years and above)	12.3	7.5	3.4	23.3
Coop formation year	Before 1994	0.7	0.0	0.0	0.7
	1994-1999	0.7	0.7	0.7	2.1
	2000-2005	6.8	6.8	4.1	17.8
	2006-2010	15.1	15.1	8.2	38.4
	2011-2015	31.5	7.5	2.1	41.1
Coop grouping	Diverse	50.0	28.8	13.7	92.5
	Family	4.8	1.4	1.4	7.5
No. of workers in household	0	17.1	10.3	4.8	32.2
	1	18.5	9.6	6.2	34.2
	2	11.0	6.2	2.7	19.9
	3	6.8	0.7	0.7	8.2
	4	1.4	2.7	0.0	4.1
	7	0.0	0.7	0.7	1.4
Source of extra income	None	13.0	7.5	4.1	24.7
	Child grant	29.5	17.8	9.6	56.8
	Pension	10.3	4.8	0.0	15.1
	Welfare grant	0.7	0.0	1.4	2.1
	Remittances	1.4	0.0	0.0	1.4
Dependents size	1-2 dependents	6.2	3.4	0.0	9.6
	3-4 dependents	19.9	6.2	2.7	28.8
	5-6 dependents	17.1	7.5	2.7	27.4
	7-8 dependents	8.9	9.6	5.5	24.0
	9 dependents	2.7	3.4	4.1	10.3
Employment status	Formally employed	0.0	0.0	0.7	0.7
	Temporarily employed	2.1	2.1	0.0	4.1
	Full time in farming	52.1	28.1	14.4	94.5
	Self-employed (business)	0.7	0.0	0.0	0.7
Total		54.8	30.1	15.1	100.0

Source: Survey Results, 2015

5.2.1 Relationship between access to funding and household characteristics of cooperative in Limpopo Province

Results in Table 5.2 above reflected that there were more (52.7%) women than man (47.3%) who relied on own funding. Both women (26.7%) and man (28.1%) had no access to funding from R40 001 to R500 000 and funding from above R500 000 which is precisely

from government and other. The picture given by the results is that most cooperatives were not relying on funding from government and other which is a good trait as far as cooperatives operation is concerned. However the level of own funding rather depicted a picture of low economic participation (below R40 000) in the cooperative from the members side.

In funding from government and other, females were mostly (19.9%) funded in the middle category (from R40 001 to R500 000) when compared to males. In the higher funded category (Above R500 000) males dominated (8.9%). The fact that males were dominating in accessing higher funds shows that males are more exposed to financing opportunities when compared to women. This trend is not surprising as it has also been observed that worldwide the proportion of women in top management in the workforce is still low (Périlleux & Szafarz, 2015). The trend could also be an indication that men could be more interested in access in funds from government and other institutions than own funding when compared to women. The implication is, in the long run if women strive to fund cooperatives on their own; this could mean that cooperatives dominated by women could operate better. This is based on the principle of self-help implying that financial independent cooperatives will survive.

Youth proportion was very small (13%) in the study when compared to the adults (63.7%) and the elderly (23.3%). Cooperatives led by the elderly (66 years and above) mostly received funding from the middle (R40 001 to R500 000) and higher (above R500 000) funded category. The proportion of such cooperatives were almost half (7.5% and 3.4%) of the elderly population. The low participation of youth in cooperatives reflects a global problem of lack of youth participation. Although unemployment rate of youth is double

than that of adults in most African countries with sixty percent of youth unemployed (African Economic Outlook, 2015). The farming population is ageing worldwide which poses a serious concern for agriculture stakeholders. The main concern is the perceived low production of food in the future which will cascade to high food prices.

The main contributor to this problem emanates from the fact that youth perceives farming as an unattractive, labor intensive, less profitable and traditional (Andrea Allen, 2016). The fact that more (8.9%) youth were depending on own funding has advantages for the future as this implies that it is more likely to have independent cooperatives in future. The independence of these cooperatives will be enhanced if members will be generating income at the end. What is encouraging is that these youth are learning to be financially independent.

Results also showed various cooperatives existence expressed in year periods. Cooperatives initiated before 1994 were very few (0.7%) and found to be only relying on own funding as they did not get access from government and other. Considering the age of these cooperatives one would have thought that at this stage such cooperatives will be in a position to access external funds for expansion from the private sector. It is also worthy to note that these cooperatives tried to get funding. Most (41.1%) cooperatives were initiated between the years 2011-2015. Members in cooperatives initiated between the years 2006-2010 mostly received funding in the middle and higher funded category (15.1% and 8.2% respectively). There is also a high probability that cooperatives with more years of existence are likely to be dominated by elderly member's further reducing opportunities of getting funding especially from the private sector. The reason being age factor is used to gauge risk by the financial sector. As explained by Chauke and Anim

(2013) the dominance of the elderly is instigated by reason of perceiving farming as the exit job for retirees.

Cooperatives led by leaders without any member of their family working dominated (10.3%) the middle (R40 001 to R500 000) funded category. Results indicated that cooperatives led by leaders with more than three workers in their households accessed funding in the middle and higher funded category. Cooperatives led by leaders who were dependent on pension grant as source of extra income were not funded in the higher (above R500 000) funded category. Welfare grant dependent leaders were mostly (1.4%) funded in the higher funded category. Interestingly cooperatives led by leaders who were dependent on remittances for extra income were not funded in both middle (R40 001 to R500 000) and higher (above R500 000) funded category. Another crucial observation was that cooperatives led by leaders with more dependents precisely 7-8 dependents and 9 dependents dominated the higher (above R500 000) funded category (5.5% and 4.1% respectively). Results also reflected that cooperatives led by leaders who were formally employed were only funded above R500 000. The results are suggestive of the fact that members with stable income also had better access to higher funding. Cooperatives leaders who were self-employed through ownership of small businesses were not funded in any of the funded category.

5.2.2 Relationship between access to funding and human capital variables, market and information access of cooperatives

Table 5.3 below shows the relationship between the human capital variables and access to funding. As indicated from literature, higher stock of human capital improves the

performance of cooperatives. The expectation is therefore that members who possess stock of human capital, thus those with training, higher education level, better knowledge of the cooperatives principles and Act No.14 of 2005 should be financially independent. That is, less reliant on funding from government and other but more reliant on own funding.

Table 5.3 Human capital variables, market and information access of cooperatives

Human, market and information access characteristics		Access to funding (%)			Proportion (%)
Variable	Category	Below R40 000	R40 001 to R500 000	Above R500 000	
Training	None	21.2	7.5	5.5	34.2
	Training	33.6	22.6	9.6	65.8
Knowledge of coop principles & Act no.14 of 2005 as amended by the Coop Management Act No.6 of 2013	None	39.0	17.1	4.8	61.0
	Poor	2.1	3.4	2.1	7.5
	Fair	7.5	3.4	3.4	14.4
	Good	4.1	4.8	2.1	11.0
	Very good	2.1	1.4	2.7	6.2
Workshop on coop act	No	48.6	20.5	8.9	78.1
	Yes	6.2	9.6	6.2	21.9
Education level	No formal education	0.7	2.7	0.0	3.4
	Primary	5.5	6.2	2.1	13.7
	Secondary	22.6	13.0	4.1	39.7
	Matric	13.7	6.2	3.4	23.3
	Post matric	12.3	2.1	5.5	19.9
Market access	No	52.1	26.0	10.3	88.4
	Yes	2.7	4.1	4.8	11.6
Member affiliation	None	43.2	20.5	9.6	73.3
	Farmer association	2.1	1.4	0.7	4.1
	Secondary cooperative	9.6	8.2	4.1	21.9
	Business association	0.0	0.0	0.7	0.7
Information access	Disagree	21.2	2.7	2.1	26.0
	Agree	33.6	27.4	13.0	74.0
Total		54.8	30.1	15.1	100.0

Source: Survey Results, 2015

The type of training that cooperative members received was generic training focusing on Small, Medium and Micro Enterprises (SMME). The content of the training was on bookkeeping, financial management and business management basics. The training was offered by the Limpopo Development Economic Agency (LEDA). This is an agency that is responsible for registering cooperatives with the Department of Trade and Industry on behalf of these farmers.

The expectation is that members who had no training (34.2%) will be disadvantaged and as a result most of them will be highly dependent on funding from the government and other institutions to be bailed out. Lack of training is associated with lack of business skills which hampers economic performance. If cooperatives are not properly operating,

income generating abilities will not be realized eventually the existence of such cooperative in the first instance is defeated. The results from Table 5.3 reflects the opposite, cooperatives which were actually relying on own funding (21,2%) and the externally funded inclusively (13%) were in both middle and high category. Those who received training almost half (33.2%) received from government and other. The finding is less expected as members who are equipped with training should be the ones who are financially independent. The rationale is that when there is human capital stocks in an organization output should improve. A good output will be a reflection of members funding their own cooperatives with amounts above R40 000 in this instance.

As mentioned by Altman (2015) cooperatives led by trained competent individuals usually stand a chance of surviving. However he further indicated that the individual's condition to survive is that they should be operating in the context of co-operative principles. In this case, the plausible explanation of why training did not seem to affect the cooperative financial dependence could be due to the fact that the trainings received were not tailor made for cooperatives but for small businesses in general. This notion was confirmed by the study results as observed in the study.

Cooperatives are governed by seven ICA principles all over the world (ICA, 2015). In South Africa cooperatives are also governed by the ICA principles together with Cooperative Act no.14 of 2005 now amended to Cooperative Management Act no.6 of 2013. The ICA principles provide a framework of how a cooperative should be while the Act provides administration (including how leadership should be elected) guidelines in South Africa. Understanding of both ICA principles and Cooperative Act No.14 of 2005

as amended by the Cooperative Management Act No.6 of 2013 in South Africa is crucial and will be the foundation of a successful cooperative.

From the results a concerning discovery was that majority (61%) of cooperative members did not have knowledge on cooperatives principles and Act no. 14 of 2005. This then brings a big question on the table, how then were these cooperatives formed? How are they currently operating? For understanding of the principles and Act is what should lead members to eventually form cooperatives in the first place. When people are in cooperatives and without knowledge of the principles and Act it is an error. What is concerning in this case is the big proportion of members without any knowledge of the cooperative principles and Act. In this study knowledge was assessed by measuring the level of cooperative principles and Act amongst cooperative members.

The implication is that these cooperatives will mostly not understand that they have to be financially independent. Mostly they will register cooperatives with great ideas but rely on grants than on their personal funds. What is of great concern is the fact that funders (both government and private sector) granted funding to members without knowledge of cooperatives principles and Act (see annexure 1). Annexure 1 shows that own funding dominated (54.8%) in cooperatives while funding from government and other constituted less (45.2%-from both government and private sector). Looking at the funding from the government and other, some (21.9%) of their funding went to members without knowledge of cooperative principles and Act No.14 of 2005. Funding from the government and other stakeholders was directed to members without knowledge, from that proportion, a bigger (19.2%) portion was from the government while a small (2.7%) proportion from the private sector. However it is expected that members without knowledge will be more

reliant on government and other institution for funding. The problem with the funding criteria if there is creates problems. Implications are, both government and private sector might not realize return on investment in the future. As literature indicates, conditions for cooperatives success are embedded in operating within cooperatives principles (Altman, 2015). Failure to operate within the guidelines of the cooperative principles will hinder success.

The proportion for members from table 5.3 who understood the cooperative Act no. 14 of 2005 very well was small (6.2%) from the study. Some (2.7%) of the members in that category received higher funding when compared to the proportion that received middle (1.4%) and own funding (2.1%) category. Members (48.6%) who did not receive a workshop on the Cooperative Act No.14 of 2005 as amended by the Cooperative Management Act No.6 of 2013 were in the own funding category. Members with post matric education dominated (5.5%) in the higher funded category when compared to matric (3.4%), secondary (4.1%), primary (2.1%) and no formal education group (0%) in the lower funded categories. Generally the results suggested that members with high stock of human capital (i.e. higher education level) were mostly reliant on government and other institutions funding when in actual fact they should be reliant on own funding.

Most members had no market access (88.4%) were in own funding category (52.1%). This indicates that capacity to generate more income for members was hampered. Literature indicates that there is a positive relationship between collective marketing and better prices (Hannan, 2014). If members have access to markets and better prices for their produce automatically their income will be improved which potentially creates resources in the cooperatives. Resources include capital to run day to day activities such

as embarking on business meetings to secure marketing and opportunities. This scenario could create financial independence for cooperatives.

Results reflects that all members who were affiliated to business association received higher funding when compared to those affiliated to secondary cooperative and farmer association. Again this could be reflective of the fact that though business associations are good for cooperatives, the values shared in normal businesses might differ from cooperatives values. For instance in business, the focus is mainly on profit whereas in cooperatives the focus is on consolidated social and economic benefits for all members. In cooperatives all members have equal voices unlike in private business. The fact that members affiliated to business association were found to have been funded above half a million only was good and bad. It was good if the funding was for expansion of the cooperative but bad if the funding was for starting up the cooperative. The bad part is based on the fact that cooperatives in view of their nature should kick start on their own in order to create that sense of ownership. As supported by Okem and Lawrence (2013) development of a vibrant cooperative sector is through collaboration with both cooperative and non-cooperative institutions. This is to say strengthening of cooperatives can be achieved through this kind of financial collaboration.

Majority (74%) of cooperatives members agreed that there was information sharing. However most (33.6%) members with access to information within the group were in the own funding category. Members interviewed were cooperatives leaders.

Table 5.4 Access to funding and social capital variables, cooperative bank account, debts and annual income group of cooperatives

social capital , cooperative bank account, debts and annual income group variables		Access to funding (%)			Proportion (%)
Variable	Category	**Below R40 000**	**R40 001 to R500 000**	**Above R500 000**	
Coop hosts AGM	No	37.7	17.1	5.5	60.3
	Yes	17.1	13.0	9.6	39.7
Method of voting	Do not vote	40.4	17.1	8.2	65.8
	Vote through hands	13.7	11.6	5.5	30.8
	Vote through ballot papers	0.7	1.4	1.4	3.4
Have you received training organised by Coop	No	52.7	28.8	14.4	95.9
	Yes	2.1	1.4	0.7	4.1
Member support in time of need	Disagree	17.1	4.8	0.7	22.6
	Agree	37.7	25.3	14.4	77.4
Financial contribution	Disagree	24.0	6.8	2.7	33.6
	Agree	30.8	23.3	12.3	66.4
Meeting attendance	Disagree	15.8	4.8	0.7	21.2
	Agree	39.0	25.3	14.4	78.8
Member share information	Disagree	19.2	4.1	0.7	24.0
	Agree	35.6	26.0	14.4	76.0
Member support on social event	Disagree	19.2	8.2	3.4	30.8
	Agree	35.6	21.9	11.6	69.2
Relatives of members benefited	Disagree	25.3	7.5	3.4	36.3
	Agree	29.5	22.6	11.6	63.7
Coop has a bank account	Disagree	12.3	3.4	2.1	17.8
	Agree	42.5	26.7	13.0	82.2
Coop has debts	Disagree	52.1	26.0	11.6	89.7
	Agree	2.7	4.1	3.4	10.3
Coop annual income group	More >10 000	18.5	17.8	10.3	46.6
	less < 10 000	36.3	12.3	4.8	53.4
Total		54.8	30.1	15.1	100.0

Source: Survey Results, 2015

Literature asserts that social capital stock improves cooperative performance. It is therefore expected that members with social capital stock will be financially independent. Operational variables such as bank account existence, debts existence and the annual income group of the cooperatives were compared to access to funding. The rationale for including these variables was to see the relationship. One of the social capital indicators is the opportunity of member's voice to be heard. The hosting of annual general meetings in a cooperative provides an opportunity for member's voices to be heard. In the annual

general meeting, members of the cooperative are expected to choose new leadership and decide on the operations of the cooperatives through voting. This benefit is in line with the principle of cooperatives; the principle is called democratic control. The principle makes provision for democracy to be exercised. The democracy benefit is realized when members can vote fair and free through ballot paper voting. The ballot paper voting ensures protection to the member as no one will publicly know the decision of the other member.

The results show that majority (60.3%) of members did not hold annual general meetings with majority (37.7%) in the lower funded category. Hannan (2014) pointed out that when there is an imbalance in the cooperative governance; factions could be created leading to some groups adhering to cooperative governance and some withdrawing membership due to exclusion. Results also depicted that most members were not voting (65.8%) in their cooperatives implying that decision were made solely verbally potentially in a biased environment. The remaining proportions of cooperatives (34.4%) were voting, however only a small proportion was voting through ballot papers. Members voting with ballot papers were equally spread (1.4%) in both middle and high funded category.

As part of cooperative principles, members are supposed to receive training organised by the cooperative. The results show that majority (95.9%) of cooperatives did not organise training for their members. Majority (52.7%) in that category were in own funding or lower funding category. Only few (4.1 %) of the cooperatives members admitted to have organised a training for their cooperative with half (2.1%) of the cooperatives in own funding category. The types of training that could be organised included sessions wherein a knowledgeable person whether formal or informal could be invited to deliver a talk. The

trainings could also include technical and management training in response to the need arising from the cooperative. Jussila, Byrne and Touminem (2012) indicated that commitment in cooperative is affected by whether a cooperative assist members in time of need or not. Majority (77.4%) of members indicated that there was support from cooperative in times of need with majority (37.7%) being in the own funded category. Generally majority of members agreed that people contributed financially, members attended meetings when called, members shared information, members supported each other on social events and relatives of members benefited from the cooperatives in one way or the other. Results are conclusive that members had social capital stock though majority of cooperative members were in the own funded categories.

The findings reflect a good fundamental strength of financial independence as majority of cooperative members were in own funding category. However as indicated before, the weak link remains in the fact that own funding contributions made towards the cooperatives are still less (below R40 000). It is desirable for cooperatives to move to the middle (R40 001 to R500 000) and higher (above half a million) funded category using own funds. Though it was expected that with the presence of social capital stock cooperatives will be financially independent. It was also expected that they will be contributing a little bit more towards their cooperatives (above R40 000). The expectation was not fully met; most cooperatives members were depending on their own contribution. The only problem was that contributions in own funding were still very low. This observation aligns with Majee and Hoyt (2011) findings that even high levels of bonding (intra-community ties) social capital sometimes would not be enough to improve the

quality of life for members. This implies that social capital on its own is not enough to prosper cooperative.

The existence of a bank account variable in the study was added in order to assess if cooperatives had an existing cash flow record in place as this is normally essential for potential investors. Most (82.2%) cooperatives had a bank account with very few (17.8%) cooperatives without. Cooperatives without bank accounts indicated that at some point they decided to close their business accounts as they were expensive to maintain resorting to members' personal accounts. This was a risk that some cooperatives were taking though it could be justified by the level of high social capital present in cooperatives.

Very few (10.3%) cooperatives had debts that they were struggling with. The debts were due to unpaid electricity bill which was beyond cooperative affordability according to members. Majority (53.4%) of cooperative income was less than R10 000 per annum. This could be explained by the fact that most (36.3%) cooperatives with such income were dependent on own funding. It is practical that if a cooperative is self-funded most of the income generated will not be registered as income but as expenses for a certain period of time. This is because the cooperative might decide to recover their investments for that period. On the other hand, if a cooperative received funding from the government and other institutions for its operations it is likely that the first income generated could easily be registered as income.

5.3 Determinants of access to funding

5.3.1 Introduction

The previous sections presented descriptive presentation analysis from the cooperative respondents. This section covered the regression analysis investigating household characteristics influencing access to funding. The empirical findings were the basis at which conclusions were drawn from the study in line with the study's objectives.

5.3.2 Results from the multinomial logistic regression model

The model explained the relationship between access to funding and household characteristics, human and social capital variables. The dependent variable was access to funding with three categories. The reference group for the study was below R40 000 funding or own funding. There are six independent variables which were significant in the regression and they are presented below.

5.3.3 Significant variables in the model

As indicated in Table 5.5 some predictor variables influenced access to funding significantly. Of the 26 independent variables used in the model, 5 variables in middle (R40 001 to R500 000) funded category (cooperative formation year, market access, level of education, information access and relatives benefit) and 3 variables in the high (above R500 000) funded category (number of workers in household, market access and dependents size) were statistically significant.

Table 5. 5 Multinomial logistic regression parameter estimates

40 001 to 500 000	*B*	*SE*	*Wald*	*P-value*	*Exp(B)*
Intercept	6.451	5.174	1.555	0.212	
GEN	-0.277	0.544	0.259	0.611	0.758
AGE	-0.442	0.503	0.774	0.379	0.643
TR	0.135	0.311	0.188	0.665	1.144
NOH	-0.119	0.242	0.240	0.624	0.888
SEI	-0.421	0.358	1.384	0.239	0.656
EMS	-0.817	1.270	0.414	0.520	0.442
CYR	-0.663*	0.387	2.943	0.086	0.515
CG	-1.996	1.247	2.560	0.110	0.136
KOPA	0.045	0.293	0.024	0.876	1.047
WCA	1.208	0.857	1.985	0.159	3.347
MA	2.939**	1.203	5.966	0.015	18.902
AGM	-1.434	0.984	2.124	0.145	0.238
MVM	1.056	0.871	1.470	0.225	2.876
ME	-0.569	0.542	1.100	0.294	0.566
CTR	-1.316	1.829	0.517	0.472	0.268
LED	-0.912***	0.351	6.755	0.009	0.402
CIG	-0.069	0.595	0.013	0.908	0.934
MSU	-0.441	1.408	0.098	0.754	0.643
FC	-0.336	0.797	0.178	0.673	0.714
MET	-2.049	1.298	2.492	0.114	0.129
IA	3.139***	1.088	8.317	0.004	23.081
MSH	1.293	1.496	0.747	0.387	3.644
MSE	0.427	0.847	0.254	0.615	1.532
RBE	1.491**	0.672	4.923	0.026	4.440
BAC	-0.608	0.827	0.540	0.463	0.545
CDE	-0.990	1.003	0.974	0.324	0.372
DSIZ	0.205	0.153	1.802	0.179	1.228
Above R500 000	*B*	*SE*	*Wald*	*P-value*	*Exp(B)*
Intercept	-10.035	7.559	1.762	0.184	
GEN	0.124	0.869	0.020	0.886	1.132
AGE	0.631	0.698	0.817	0.366	1.880
TR	-0.213	0.425	0.251	0.616	0.808
NOH	-0.803**	0.382	4.408	0.036	0.448
SEI	-0.694	0.462	2.261	0.133	0.499
EMS	0.839	1.977	0.180	0.671	2.314
CYR	-0.745	0.552	1.822	0.177	0.475
CG	-0.806	1.311	0.378	0.539	0.447
KOPA	0.444	0.338	1.724	0.189	1.559
WCA	1.105	1.013	1.189	0.275	3.018
MA	2.778***	1.383	4.034	0.045	16.093
AGM	1.033	1.365	0.573	0.449	2.810
MVM	0.216	1.237	0.030	0.861	1.241
ME	0.222	0.680	0.107	0.744	1.249
CTR	-3.163	2.866	1.218	0.270	0.042
LED	0.722	0.454	2.529	0.112	2.058
CIG	0.224	0.817	0.075	0.784	1.251
MSU	-0.821	2.142	0.147	0.701	0.440
FC	-0.633	1.143	0.307	0.580	0.531
MET	1.062	1.829	0.337	0.562	2.891
IA	0.316	1.332	0.056	0.813	1.371
MSH	2.430	1.851	1.725	0.189	11.363
MSE	-0.245	1.148	0.045	0.831	0.783
RBE	0.576	0.990	0.339	0.561	1.779
BAC	-0.082	1.266	0.004	0.949	0.922
CDE	0.408	1.443	0.080	0.777	1.504
DSIZ	0.610***	0.214	8.108	0.004	1.841

-2 Log Likelihood=285.074 (P<0.000), Chi-Square=104.640 (P< 0.000). The reference category= below R40 000; ***p<0.01; **p<0.05; *p<0.10. N=146; Source: Study Results, 2015

As the odds of market access, information access and relatives perceived general benefits from cooperatives increases by one unit, actual access to funding in the middle category (R40 001 to R500 000) increases by 18.9 times more for market access, 23.1 times more for information access and 4.4 times more for relatives perceived general benefits (i.e. these were general benefits which were not quantified which cooperatives members perceived their relatives could be attaining) increase. In the case of cooperative formation year and level of education contrary was the case. The odds value for cooperative formation year and level of education were less than 1, (Exp (β) =0.52) and (Exp (β) =0.40) respectively. This implied that as the odds of cooperative formation year level of education increased by 1 unit, there were progressive decreases in the odds for the actual need to access funding.

In the higher funded category (Above R500 000), the odds values indicated by the Exp (β) for market access (Exp (β) =16.1) and dependents size (Exp (β) =1.8) were above 1. As the odds of market access and dependents size increases by one unit, actual access to funding increased by 16.1 times more for market access and 1.8 times more for dependents size. As indicated by the Exp (β) values, a value less than 1 would indicate the opposite. The odds value for number of workers in household was less than 1 (Exp (β) =0.44) implying that as the odds of number of workers in household increase by 1 unit, there was progressive decreases in the odds for the actual need to access funding.

5.3.4 Variables determining access to funding summarized

It can be concluded that the variables that have a higher probability of shifting cooperative respondents from own funding (below R40 000) to middle (R40 001 to R500 000) funded

cooperatives are market access, information access and perceived relatives benefits. Variables such as dependents size and market access had a higher probability of shifting cooperative respondents from middle to high funded category. Variables with a negative significant influence in the middle and lower funded category were cooperative formation year and level of education. From the middle to higher funded category, variable with negative significant influence was number of workers in household.

There were some variables from the regression which were not significant but positive in the middle (R40 001 to R500 000) funded category. Such variables were training, knowledge of cooperative principles and Act no.14 of 2005, workshop on cooperative Act no.14 of 2005, method of voting, members share information, member support during social events and dependents size. A negative and insignificant relationship was observed between gender, age, number of workers in household, source of extra income, employment status, cooperative grouping, annual general meeting hosting, member affiliation, training organised by cooperative, cooperative annual income, member support in time of need, financial contribution, meeting attendance, bank account existence and cooperative debts.

Variables which had a positive and insignificant relationship in the highly funded category were gender, age, employment status, knowledge of cooperative principles and Act no.14 of 2005, workshop on cooperative Act no.14 of 2005, annual general meeting hosting, method of voting, member affiliation, level of education, cooperative annual income, meeting attendance, information access, members share information, relatives benefit and cooperative debts. Negative and insignificant variables were training, source of extra income, cooperative formation year, cooperative grouping, training organised by

cooperatives, members support in time of need, financial contribution, member support in social events and bank account existence.

5.4 Discussion of the results

5.4.1 Discussion of the descriptive results

The results showed that majority of cooperative respondents were females. From the study, males accessed more in the highly funded category of funds exceeding half a million when compared to women. Women accessed more from the middle funding category. This observation suggested that man seek funding more than women. The implication is because women are dominant in own funding category, women-led cooperatives stands a good chance of being financially independent in the future. Low females' membership in agricultural cooperative is a known problem especially because women typically do not own land (Borda-Rodriguez & Johnson, 2015). However there were more females than men in the study. In the context of South Africa, the dominance of women is essential as this creates empowerment environment and strengthens women farmers' voices (Mudege et al. 2015).

Adults and elderly members dominated in the study. As a concern youth participation was minimal. Generally adults and elderly had more access to funding when compared to youth. The government was the main sponsor in funding. Under normal circumstances most private financing institutions will not be interested in funding the elderly due to the age risk factor but will be interested in funding the youth. The logic is that being youth is associated with strength and innovation and this is what makes private financiers to have an interest in youth. However the fact that most youth were in own funding category could

perhaps be a good sign that in future youth could be targeted for producing financial independent cooperatives.

Most members were not affiliated to any association while those associated to business associations had more access to higher funding. The fact that all the members affiliating to business association managed to acquire funding above a million is a sign of existence of direct or indirect benefits from the business association. It is not surprising that such affiliates had access to such high funds. Businesses are more focused on profit and issues related to information concerning access to funds. This type of information is what small businesses master in.

Majority (94.5%) of members were full time in farming as a form of employment. However, those who had formal jobs were all highly funded (above R500 000). This observation is interesting suggesting that those with reliable source of income had better access to funding than those without. Again this category of formally employed members should form part of members in cooperatives which are financially independent by using own funding. As shown by the results in the study, amongst those working for themselves (small businesses) alongside cooperatives activities none was found in the middle and higher funded group. That is, none was funded they only relied on personal funds below R40 000.

Under normal circumstances one would think that those without proper jobs will have better access to funding but it was not the case in this study. However the possible cause could be lack of exposition to opportunities or understanding of cooperatives values.

Human capital variables such as training, knowledge of cooperative principles and Act no.14 of 2005, workshop on cooperative Act no.14 of 2005, member affiliation and training organised by cooperatives were not significant in the study. Most cooperatives leaders did not receive training on cooperatives principles and Act no.14 of 2005 which could potentially create problems. As alluded by Borda-Rodriguez & Vicari (2014) lack of training challenges resilience of cooperatives which suggest that without training cooperatives can struggle. Munker (2012) indicated that investments in members' education, skills, knowledge are essential for members to be committed to cooperative business while Francesconi and Heenrink (2010) supported that lack of skills negatively affects cooperative performance.

Social capital indicators such as annual general meeting hosting, method of voting, member support in time of need, financial contribution, meeting attendance, member sharing of information and member support in social events were insignificant in the study. Literature shows that social networks are outcomes of functioning cooperatives (Richards & Reed, 2015). Social capital can also be regarded as group marketing and facilitator of markets (Fornoni, Arribas, & Vila, 2012). According to Reed and Hickey (2016) the functioning of cooperatives depends heavily on the existing social capital of cooperative members. Network has been observed to reduce free riding in cooperatives (Birchall, 2012 & Munkner, 2012 & Nilson, Svendsen & Svendsen, 2012). The expectation from the study was social capital would play a significant role in the performance of cooperatives. Liang et al (2015) indicated that social benefit is becoming of a less factor but economic and transactions benefits that pertain to market activities have more value in cooperative members.

However, it is still worthy to note that sustainability of cooperatives depends on the availability of social capital creation and strengthening (Kanyane & Ilorah, 2015). Nilson, Svendsen and Svendsen (2012) also pointed out that large cooperatives are gradually loosing social capital (network resources not visible but having economic impact). The more cooperative members get dissatisfied, the more social capital is lost, and the poorer conditions will the cooperative offer (Nilson, Svendsen & Svendsen, 2012). Lack of social capital has been observed as a major barrier for development of farmer organizations (Ruben & Heras, 2012).

Results showed that cooperatives with low annual income were mostly cooperatives depending on own funding for the operation of their studies. Most cooperatives had bank accounts while cooperatives without a bank account resorted to individual's personal bank account which posed serious threats in the operations of the cooperatives though possibly influenced by the level of social capital available. Few cooperatives had debts primarily emanating from electricity bills. The problems emanating from electricity bills were due to electricity transformers granted to farmers which they indicated to have been expensive.

The interesting part about this debt was that the proportion of members who relied on own funding with electricity debts was low (2.7%) when compared to that of funded cooperatives in the middle (3.4%) and higher (4.1%) category. This could imply that being not financially independent goes beyond just receiving the grant but further failing to settle debts emanating from the grants. What is reflected here is that cooperatives funded were not paying their electricity bill when compared to those not funded. Under normal circumstances one would expect the funded cooperatives to be able to pay their electricity

debt as there is money to cater for operation costs. Cooperative members without funding might find it hard to settle bills, as most finances will come from their pocket. This perhaps is a sign that when cooperatives members are given grants to start, they also expect another grant to settle major bills.

5.4.2 Discussion of the significant variables in Multinomial logistic regression results

Market access for both funding categories was significant. The odds of accessing funding as market access increased were 18.9 and 16.1 times more for both funding categories. The finding reflects that funders considered availability of market access when funding cooperatives. It is worthy to note that farmer groups do not only assist producers in accessing markets but enable them to access high value markets and improve production and marketing (Wollni et al. 2010 and Francesconi & Heerink, 2011). In addition, advantages of alliance and network include access to resources, technology and knowledge (Lee et al. 2012). If farmers are exposed to markets, then they are exposed to generating income opportunities consequently improving their lives. If this was the case then such cooperatives would have been in much better positions to self-fund their cooperatives. Possible contribution to lack of own funding could be attributed to dependence on government assistance.

Information access had a positive significant relationship with access to funding. This is consistent with the findings of Herbal et al. (2015) alluding to the fact that organizing smallholders into collectives (including cooperatives) increases access to knowledge networks essential for the operation of cooperatives. In this study chances of having

access to funding were increased by 23.1 times more as information access was increasing. The finding suggests that funders were drawn to the beneficiaries by the level of information they had. This finding is suggestive of the fact that information access is crucial in cooperatives though dependence on government and other institutions funding is not encouraged. Results also suggests that funders where funding cooperatives at their disposal, that is, the cooperatives members had to know about funders programs. The finding is consistent with Shiferaw et al.(2011) finding that small producers are able to share information, the conditions of the market, and information on quality and fair trade requirements when they are in organised functional support groups. The reality is small producer are normally faced with higher transaction costs in all non-labour transactions (Poulton et al., 2010). However collective action can overcome market failures (Shiferaw et al., 2011). Liang et al. (2015) indicated that even if government had assistance to give they will focus on cooperatives that they are in contact with. Meaning having access to formation does not only provide intra-linked benefits but also inter-linked opportunities from government and other stakeholders.

Other social capital variables were not significant but only one social capital variables such as relative's benefits had a positive significant influence with the middle funded category. The benefits of relatives were not quantified but were based on the perceptions of members themselves, whether they perceived their relatives to be generally benefiting or not. This variable was essential in order to see if they could be some snowball benefit effect taking place. The presence of such effect was expected to influence the performance of cooperatives positively. The results indicated that relatives' benefits had a positive influence on access to funding in the middle category. The results implied that

access to funding had a relationship with whether relatives of cooperatives members were benefiting or not by 4.4 times more. Literature indicates that cooperatives themselves are proxy for social capital (Chloupkova et al., 2003 & Nilsson & Hendrikse, 2011). Social capital influence on cooperatives in general has been documented (Luo & Wang, 2010). As observed by Novkovic (2013) the strength of cooperatives lies in the network within. This means, for cooperatives to develop there should be ties within the organization itself. The ties facilitate information sharing creation and it is in this sharing that opportunistic behaviour is reduced. Shoji et al. (2012) indicated that social capital also plays an essential role in private lending markets. This was further supported by the finding of Kanyane and Ilorah (2015) who observed that the poor can rely on bonding social capital for survival by creating small businesses with capital borrowed from relatives, community groups without collateral. The use of bonding social capital more is desirable for the cooperatives as it enables them to use other source of funding. The truth is when own funds are used there is always an element of responsibility whereas if grants are used an element of negligence could evolve due to lack of individual ownership.

Cooperative formation year had a negative influence with the middle funded group. This implied that the older the cooperative was, the lesser the chance of getting funding in the middle category. The finding in this study is contrary to what Huang et al. (2013) observed in Zhejiang China where the age of a cooperative was found to have positive impact on economic performance of cooperatives which will eventually be of interest to financiers. The results also showed that as level of education was increasing access to middle funding was not increasing. This is suggestive of the fact that general education was not

a determinant of access to funding as expected. Generally people with higher level of education are perceived to have access to various benefits.

Dependents size had a positive influence with highly funded category. As number of dependents increased the odds of being funded above R500 000 also increased by 1.8 times more. Plausible explanation could be as dependents size increased the need to provide for a bigger family created pressure to funding institutions and families themselves. Another explanation could be large families see cooperatives as ventures for income.

It is important to highlight that as much as accessing high grants is good, in the context of cooperatives sustainability it is good to see cooperatives striving on their own without support. When cooperatives want to expand their business operations, it is expected that they seek funding. Funding in such cases is secured, why? Because people who are being funded understand what cooperatives are? How they should operate and also they would be in a position to know that they are their own major funders before anyone.

Multinomial logistic regression results depicted that.

- It is less likely by 0.5 times for cooperatives with more years to get access to funding
- If market access is improved, it is more likely by 19.9 and 16.1 times more to have access to middle and higher funding
- An increase in information access will results in an increase in access to middle funding by 23.1 times more

- It is more likely by 4.4 times for farmers to have access to middle funding as their relatives benefit (perceived benefits)
- Even if numbers of workers in household increase It is less likely by 0.4 times that farmers will have access to funding above R500 000
- An increase in dependents size is more likely by 1.8 times more to cause a farmer to access funding above R500 000

The above findings clearly indicate that cooperatives that should be financially independent, that is, those with market and information access are the ones who are mostly reliant on government and other institution funding. This is a problem that needs to be addressed.

The next chapter provide a presentation of both descriptive and inferential statistics results for objective 3.

CHAPTER 6

FACTORS DETERMINING CONTRIBUTION OF AGRICULTURAL COOPERATIVES TO LIVELIHOODS

6.1 Introduction

The aim of this chapter was to identify factors that can be used to discriminate cooperatives members receiving income and members who do not receive income from the cooperative. The Descriptive analytical technique was used to assess the relationship between cooperative contribution and socio-economic, social and human capital factors. Cooperative contribution was a dependent variable with two categories measured by whether a cooperative received a monthly income (1=Yes) or not (0= No). The income refers to monthly income that members of the cooperative receive from their cooperative in a form of a salary on monthly basis. Details of how the discriminant model was formulated appear in Chapter 3.

6.2 Presentation of results household characteristics

Household characteristics such, cooperative formation year, cooperative grouping, extension service, market access, cooperative annual income group, financial contribution, information access, decision making involvement, knowledge of cooperative principles and Act no.14 of 2005 as amended by the Cooperative Management Act No.6 of 2013 and workshop on cooperative Act of 2005.

Table 6. 1 Descriptive statistics of socio-economic characteristics and human capital variables

Socio-economic characteristics and human capital variables		Do you receive income (%)		Proportion (%)
Variable	Category	No	Yes	
Coop formation year group	Before 1994	0.7	0.0	0.7
	1994-1999	0.7	1.4	2.1
	2000-2005	9.6	8.2	17.8
	2006-2010	25.3	13.0	38.4
	2011-2015	37.0	4.1	41.1
Cooperative grouping	Diverse	70.5	21.9	92.5
	Family	2.7	4.8	7.5
Knowledge of cooperative principles and Act no. 14 of 2005	None	47.9	13.0	61.0
	Poor	4.8	2.7	7.5
	Fair	13.0	1.4	14.4
	Good	5.5	5.5	11.0
	Very Good	2.1	4.1	6.2
Workshop on Cooperative Act No.14 of 2005 as amended by the Cooperative Management Act No.6 of 2013	No	61.6	16.4	78.1
	Yes	11.6	10.3	21.9
Are you satisfied with extension service?	No	60.3	13.0	73.3
	Yes	13.0	13.7	26.7
Market access	No	70.5	17.8	88.4
	Yes	2.7	8.9	11.6
Cooperative annual income group	More >10 000	19.9	26.7	46.6
	less < 10 000	53.4	0.0	53.4
Financial contribution	Disagree	29.5	4.1	33.6
	Agree	43.8	22.6	66.4
Information access	Disagree	23.3	2.7	26.0
	Agree	50.0	24.0	74.0
Decision making involvement	Disagree	14.4	2.1	16.4
	Agree	58.9	24.7	83.6
Total		73.3	26.7	100.0

Source: Survey Results, 2015

Table 6.1 shows that none (0.0%) of the respondents in cooperatives formed before1994 were receiving income. Majority (41.1%) of cooperatives were formed between the year 2011 and 2015 when compared to those formed between the year 2006 and 2010 (38.4%). Results depicted that in 2006-2010 category some (13%) of the cooperatives were receiving income. Generally cooperatives formed between the year 2011 to 2015

(41.1%) had a very small (4.1%) proportion that was receiving income. Majority (92.5%) of cooperatives were constituted by members who were not related while few (7.5%) cooperatives were constituted by members who were close relations. The notion is if a cooperative is constituted by close relations, more benefits are expected as close ties serve as a risk buffer.

The rationale is that close relations business partners can easily resolve problems amongst themselves. As expected more than half (4.8%) of the cooperatives constituted by close relations were receiving monthly income. Almost one third (21.9%) of diverse cooperatives were receiving income.

The expectation is that cooperative members who have a better understanding of knowledge of cooperative principles and Cooperative Act No.14 of 2005 as amended by the Cooperative Management Act No.6 of 2013 will stand a better chance of earning a monthly salary. The benefit of earning a salary is inclined to the fact that members with knowledge of cooperative principles are in a better position to run a cooperative effectively. Results showed that half (5.5%) of members with a good knowledge of cooperative principles and Act were earning a monthly salary. Amongst those who had a very good understanding of cooperative principles and Act understood some (4.1%) of the members were earning a salary.

This is reflective of the fact that knowledge of cooperative principles and Act is essential to cooperative income. Very few (13%) members who had no knowledge of cooperative principles and Act were earning a monthly salary from the cooperative. Only one third (2.7%) of the members with poor knowledge of cooperative principles and Act had

monthly income. Results further reflected that cooperatives members who received workshop (10.3%) on Cooperative Act No.14 of 2005 as amended by the Cooperative Management Act No.6 of 2013 were earning a monthly salary. Few (26.7%) cooperatives members who were satisfied with extension service were earning a monthly salary (13.7%). Most members who were not satisfied (73.3%) by the extension service were not earning a monthly salary (60.3%). Results depicted that majority (8.9%) of members with market access were earning a monthly salary. In cooperatives where annual income was more than R10 000 (46.6%), some (26.7%) of the cooperatives in that category gave salaries to their members.

Few (22.6%) of the cooperatives wherein members contributed financially when need arose where giving salaries to their members. Most (74%) member's agreed that there was information access. Within that category some (24%) of the cooperatives were giving their members monthly salaries. Majority (83.6%) of members agreed that all there was involvement of other cooperative members in decision making process in their cooperatives. However only one third (24.7%) of the cooperatives in that category were giving salaries to their members.

6.3 Benefits received from cooperatives

Table 6.2 below indicates various benefits received by respondents from cooperatives. Majority (73.4%) of respondents indicated that they received benefits from the cooperatives. Most (38.4%) of members indicated that they were receiving produce directly from the cooperatives followed by respondents who mentioned that they received jobs as benefits. Few (2.1%) of respondents indicated that the benefit they received was

access to grants. Very few (1.4%) respondents indicated that they received exposure and capacity building in cooperatives. A small (1.4%) proportion of respondents indicated that they were able to network with other cooperatives.

Table 6. 2 Benefits received by cooperatives members

Source: Survey Results, 2015

Benefits from the coop		**Do you receive income (%)**		**Proportion (%)**
Variable	**Category**	No	Yes	
Benefits received from the coop	None	26.7	0.0	26.7
	Job	11.0	19.9	30.8
	Food security	32.9	5.5	38.4
	Access to grants	1.4	0.7	2.1
	Overseas exposure & capacity building	0.0	0.7	0.7
	Networking	1.4	0.0	1.4
Total		73.3	26.7	100.0

Table 6. 3 Group means of variables employed in the analysis

Variables	*Cooperatives*				*All*		*P-value*
	Income benefit		**No income benefit**				
CYR	3.74	(0.79)	4.33	(0.81)	4.17	(0.84)	0.000
CG	0.18	(0.39)	0.04	(0.19)	0.08	(0.27)	0.004
KOPA	2.44	(1.62)	1.76	(1.16)	1.94	(1.33)	0.006
WCA	0.38	(0.49)	0.16	(0.37)	0.22	(0.42)	0.003
EXT	0.51	(0.51)	0.18	(0.38)	0.27	(0.44)	0.000
MA	0.33	(0.48)	0.04	(0.19)	0.12	(0.32)	0.000
CIG	0.00	(0.00)	0.73	(0.45)	0.53	(0.50)	0.000
FC	0.85	(0.37)	0.60	(0.49)	0.66	(0.47)	0.005
IA	0.90	(0.31)	0.68	(0.47)	0.74	(0.44)	0.009
DMI	0.92	(0.27)	0.80	(0.40)	0.84	(0.37)	0.086
Number of cases (n)	39		107		146		

Standard deviation in ( ); Source: Survey Results, 2015

Table 6. 4 Standardized canonical discriminant function coefficients

Source: Survey Results, 2015

Independent variables	***Coefficient***	***Wilks' Lambda***
CYR	0.198	0.905
CG	-0.211	0.943
KOPA	0.115	0.948
WCA	-0.196	0.942
EXT	-0.243	0.888
MA	-0.392	0.833
CIG	0.818	0.582
FC	0.266	0.946
IA	-0.230	0.953
DMI	0.072	0.980
Statistics:		
Eigen value	1.147	
Canonical correlation	0.731	
Walk's Lambda	0.466	
Chi-square	106.193	
Df	10	
P-value	0.000	
% grouped cases correctly classified	84.9%	

6.4 Discriminant model results

6.4.1 Introduction

The previous sections presented descriptive analysis from the cooperative respondents. This section covered the regression analysis investigating social, human capital and household characteristics influencing contribution of cooperatives to members' livelihoods in order to draw empirical conclusions that will be used to differentiate cooperatives with income benefit from those without.

6.4.2 Results from the Discriminant model

The model identified factors that can be used to discriminate between cooperatives providing income to their members and cooperatives without income. The dependent variable was cooperative contribution (measures by No-income and Yes-income). Cooperative contribution was measured by whether a cooperative was giving its members monthly income or not. There were ten independent variables which had statistically significant differences in the regression.

6.4.3 Significant variables in the model

Table 6.3 presents the group and sampled pooled means used in the analysis. The significance value of the difference levels was indicated by the P-values. The results showed a significant difference at 1 per cent level of cooperative formation year, cooperative grouping, workshop on cooperative Act no.14 of 2005, extension service satisfaction, market access, and cooperative annual income. A significance difference at the 5 per cent level was observed of knowledge in cooperatives principles and Act no.14 of 2005, financial contribution and information access. A significance difference was observed at 10 per cent level of decision making involvement.

Table 6.4 shows discriminant scores results of the analysis. The magnitude of the discriminant model is measured by the Eigen value. The Eigen value from the results was low (1.147), the implication is that the differences were lower between groups than within groups. The accuracy of the discriminant model is measured by Wilk's Lambda. A low (0.466) value indicates high percentage of explained variance of the dependent variable (cooperative contribution). The 0.466 Wilk's Lambda value presents the differences

between two groups of cooperatives which accounts for 84.9% of variance in the predicting variables.

The Chi-square statistics is used to test the null hypothesis that the discriminant model does not have a discriminating ability. The Chi-square value (106.193) with 10 degrees of freedom was significant (P<0.000) at 1 percent level of significance implying that the model had a discriminating ability therefore rejecting the null. The statistics values suggest that the discriminant function was appropriate.

The weight of the standardized canonical discriminant function coefficient shows the variables that maximize the separation of the two groups of cooperatives. Independent variables that maximizes the separation of the two groups were, cooperative annual income (0.81), market access (-0.39), financial contribution (0.27), extension service (-0.24), information access (-0.23), cooperative grouping (-0.21), workshop on Cooperative Act No.14 of 2005 as amended by the Cooperative Management Act No.6 of 2013 (-0.20), cooperative formation year (0.19), knowledge of cooperative principles and Act no.14 of 2005 (0.12) and decision making involvement (0.07) in order of magnitude.

6.4.4 Variables that discriminate between cooperatives with income and those without summarized

Results showed that the variables that accounted for most of the differences in the average scores of the two groups of cooperatives were cooperative annual income, market access, financial contribution, extension service, information access, cooperative grouping and workshop on cooperative Act no.14 of 2005.

6.5 Discussion of the results

6.5.1 Discussion of the descriptive results

None of the cooperatives which were as old as twenty three years were found in cooperatives receiving income. Cooperatives between the ages of ten to fourteen years of existence were mostly generating income for their members. Very few cooperatives with five years and below years of existence were generating income. It is not surprising that members in older cooperative were not receiving income. As income generating activities demand manpower and energy. If the old cooperatives are dominated by the elderly chances of generating income reduces with age. As reflected young cooperatives were also not generating enough income to pay as salaries. This could be attributed to the fact during the initial stage of the business development profits realization is normally not expected.

Generally cooperatives made up of close relations members were dominating in cooperatives that generate income. This could be due to the fact that close relations might easily resolve bottlenecks in business as agreements are more likely compared to diverse combination of members. Hagedorn (2014) indicated that coping with collective problems in cooperatives is central to sustainability of cooperatives.

General finding was that those members with good and very good knowledge of cooperatives principles and Act No.14 of 2005 (as amended by the Cooperative Management Act) together with members who received training on the cooperative Act were mostly receiving monthly income. As attested by Allahdadi (2011) inadequate knowledge of cooperatives hamper cooperative ability to reduce poverty. This reflects that

understanding the principles underpinning cooperative governance contributed to income of cooperatives, the contribution could have been direct or indirect.

From the descriptive results members who were happy with the extension service and those with market access were dominant in cooperatives generating income for their members. This could be explained by the fact that when there is a good flow of information, resources from extension officers to farmers, market access could be easy. That is, farmers are able to sell and realize their profits. As observed members with information access were dominant in cooperatives earning monthly income.

Generally cooperatives with more than R10 000 income per annum were dominant in cooperatives earning monthly income. Almost a quarter of cooperatives involving their members during decision making were amongst cooperatives earning a monthly salary.

6.5.2 Discussion of the significant variables in Discriminant analysis results

Results showed that cooperative formation year could determine a cooperative income contribution. In this case cooperatives which were old were not advantaged as there were the ones not earning a monthly salary. The finding is inconsistent with Ortman and King (2006) who observed that as cooperatives exist for longer period they can function properly. The plausible explanation could be members in these cooperatives were old and mostly passive towards business activities. Cooperatives earning income were dominated by cooperatives constituted by close relations. This could be due to the fact that close relations can easily personalize the business activities and responsibilities. Cooperatives earning monthly income were highly characterized by members who were happy about extension services. According to Ito et al (2012) public extension services

has been found to have a modest effect on the farm income in China. This reflects that extension services are pivotal in cooperatives. It is worthy to note that most cooperative members were not happy with extension services. Generally extension services are always faced with challenges. The South African government has embarked on the National Extension Recovery Programme (ERP) that will address extension service official's challenges (Zwane & Chauke, 2015).

Members with market access, information access were dominant in cooperatives generating income for their members. This could be attributed to the fact that once farmers have access to information it is easy to have access to markets. Once farmers have access to markets they can easily generate income.

It was observed that in cooperatives were a monthly income was not received, members were at least willing to contribute financially when the need arose. Though most cooperatives indicated that member's involvement during decision making was there, very few of such cooperatives were earning a monthly salary. This could be due to the fact that for a cooperative to earn a monthly income it is more than just involving members during decision making but it involves a set of economic activities that must be carried out.

Discriminant analysis results depicted that.

- Cooperatives generating income for their members were characterized by close relations members, knowledge of cooperative principles and Act no.14 of 2005 as amended by the Cooperative Management Act No.6 of 2013, workshop on Act no.

14 of 2005 as amended by the Cooperative Management Act No.6 of 2013, satisfaction with extension service and market access

- Cooperatives without income for members were characterized by more years of existence, less than R10 000 annual income, willingness to contribute financially when need arose, information access and involvement during decision making.

The above findings reflect that despite members cooperating with their money, information sharing, encouraging participation still cooperatives were not able to generating income.

CHAPTER 7

SUMMARY, CONCLUSION AND RECCOMENDATIONS

7.1. Introduction

The aim of this chapter was to summarize, conclude and provide recommendations for the study. Results are briefly discussed with objectives and hypothesis of the study.

7.2. Summary

The study sought to investigate four specific objectives, inclusive of the development of a model for initiating effective (self-sustaining) cooperative as summarized in the next paragraphs.

Many cooperatives in Limpopo Province were legitimate (self-initiated) in terms of their formation, especially in that most were initiated by members themselves rather than through external agents such as being influenced by either public or private sector agencies. While the above outcome is desirable, the study uncovered that most of these self-initiated cooperatives were dominated by the adult category (defined in this study as those individuals and groups aged above 35 years but below 65 years of age) as compared to the youth category (35 years and below). The study outcome also point other challenges related to the own initiated cooperatives, inclusive of lack of exposure to the South African Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013. As efforts were not made to offer training associated with this Act, dominance of members without formal education from externally influenced cooperatives was observed. The proportion of externally initiated cooperatives was also substantial considering that it was almost half the size of the study population. It was observed that

government child grant support played a key role as source of extra income for most households. This finding reflects the need for job creation. Critical finding from the study was that the presence of women in cooperative had an influence in the formation of self-initiated cooperatives. Participation of members in cooperative support association showed to be useful in the formation of self-initiated cooperatives.

Generally most cooperatives displayed to possess social capital stock which is associated with productivity and success of cooperatives. As reflected in the results accessibility of information and markets proved to be influential in funding. It was expected that as cooperatives possess more human capital stock (i.e. knowledge of cooperative principles and Act no.14 of 2005, level of education, workshop on cooperative Act no.14 of 2005, training organised by cooperative and training) their need for financing would increase. However the results reflected the opposite as human capital stock did not influence the financing. As a result it is commendable that most cooperatives relied on own funding even though it was minimal.

The main purpose of fostering cooperative development is to create sustainable jobs for the communities. It was crucial for the study to establish differences that could be used to classify cooperatives in terms of their income generating capacities. The findings would be key in pointing out areas of intervention and areas of strength in cooperatives. It can be concluded that investment in human capital stock showed to contribute to the cooperative income generating ability.

7.3. Conclusion

The conclusion of the study was based on the hypothesis of the research.

7.3.1. Socio-economic factors will impact on legitimacy of cooperative formation

The study accepts the hypothesis as the inferential results showed that the presence of women and member affiliation had a significant effect on the formation of legitimate cooperatives. The fact that descriptive results showed that members without formal education were found in illegitimate cooperatives further confirms the hypothesis.

7.3.2. Social, human capital and household characteristics have a positive influence on the economic operations of cooperatives (measured by access to funding

The results partly accept the hypothesis on the basis of the fact that two social capital indicators (i.e. the presence of perceived benefits of the relatives of members and access to information) increased the need to access funding. Market access as a household characteristics affected the need to access funding.

The results partly rejects the hypothesis on the basis of the fact that none of the human capital indicators (knowledge of cooperative principles and Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013, level of education, workshop on Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013, training organised by cooperative and training) had an impact on the need to access funding.

7.3.3. There are major differences between cooperatives receiving salaries and those not receiving

The study results support the hypothesis as there were major differences between cooperative members receiving monthly income and those without. Those receiving monthly income were characterized by members with knowledge on principles and Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013, having

received workshop on the Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013, they were satisfied with extension services and also had market access. Cooperatives without income were mainly old (years), generated less annual income, had access to information, had collective decision making and also cooperated when there was a need to contribute financially. The results showed no similar characteristics between the income generating cooperatives and those without.

7.4. Recommendations

7.4.1 The results indicated that women play a key role in the formation of legitimate cooperative. Cooperative stakeholders should target women for cooperative development. Cooperatives should be encouraged to affiliate to other organizations. As the findings reflected the positive impact of member affiliation on the formation of legitimate (self-initiated) cooperative, cooperatives stakeholders should be discouraged from initiating cooperatives on behalf of intending cooperative members as it might encourage dependence syndrome.

7.4.2 The study findings suggested that some social capital indicators had an impact on the need for funding. As illustrated in the study, funding is not necessarily bad however cooperatives are encouraged to be financially independent. Results indicated that human capital indicators did not influence the need for funding. This finding is critical in a sense that it implies that more stock of human capital might reduce dependence on external funding and encourage internal (own) funding. The implication is that if cooperatives receive increased stock of human capital (i.e. knowledge of cooperative principles based on the Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013, level of education, skills

transfer, etc.) they will be encouraged to depend on own funding. This is what is more desirable for the cooperative sector in Limpopo Province. It is therefore recommended that cooperative stakeholders should invest in own human capital.

7.4.3 The main purpose of having cooperatives in our society is to improve the livelihoods of the members. The findings revealed that members of the cooperatives who earned an income from their cooperatives were associated with having been trained especially in cooperative principles and Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013. Since cooperatives are expected to reduce poverty, income generating activities should be fostered. It is therefore recommended that stakeholders such as government and the private sector invests in extension services tailor made for cooperatives. The reason being that extension officers are normally orientated towards servicing the farming sector. The challenge with cooperatives is that if extension officers do not understand the cooperative principles and Cooperative Act No.14 of 2005 as amended by the Cooperative Act No.6 of 2013, their chances of being assisted diminish.

7.4.4 The study results revealed that members of the cooperatives were benefiting in various ways such as, jobs, produce from the cooperative, exposure, networking, capacity building and access to grants. It is recommended that cooperative stakeholders in Limpopo Province should continue to target cooperatives as vehicles for development. This should however be done in a manner that does not reduces cooperatives independence.

7.5. Suggestions for future researchers

The following questions require further investigation:

- What is the funding criterion for cooperative stakeholders?
- What is the return on investment for the South African government on the cooperative investments?
- What is the level of knowledge of cooperative principles by external stakeholders such as extension officers?

CHAPTER 8

FRAMEWORK

The main purpose of the study was to develop a framework which could be used to address the problem experienced by the cooperative sector in Limpopo Province, especially the ailing smallholder component as articulated in the problem statement of the study. The study had a conceptualized framework that could contribute to the dysfunctionality of cooperatives in the province.

Poor levels of legitimate cooperatives (externally initiated), low investment in social and human capital and financial dependency were conceptualised as being responsible for the dysfunctionality of cooperatives in Limpopo Province. The study intention was to develop a framework that could render them functional.

The ideal cooperative sector for Limpopo Province could be the one that is comprised of high levels of legitimacy (self-initiated), social and human capital investment and financially independence (dependence on own funding).

Effective social capital indicators identified by the study were, member share of information, support in time of need, attendance to meetings, financial contribution to cooperative management activities by members, member support of social events, hosting of annual general meetings (AGMs), method of voting, information access and beneficiation of members' relatives. Human capital indicators were identified as , knowledge of coop principles and the Cooperative Act No.14 of 2005 as amended by the

Cooperative Management Act No.6 of 2013 (the Act), achieved educational level, workshop on the Act, and general training.

Based on the findings of the study, it was found that most cooperatives were legitimate (self-initiated). However the level of illegitimate cooperatives (externally initiated) was quite high which is a cause for concern. It was found that social capital investments with significant impact was the beneficiation of the relatives of members from the cooperatives and information access. The increased level of the two social capital indicators were found to increase the need for funding. Whereas none of the human capital indicators showed significant influence on the need for external funding of members. The study unearthed that most cooperatives were financially independent (dependence on own funding). Household characteristics such as level of education achieved by the leadership of cooperatives played a key role in the formation of legitimate cooperatives as members without formal education were all found in illegitimate cooperatives.

It can be insinuated from the above that most cooperatives were legitimate even though the proportion of the illegitimate counterparts was also high. Also social capital investments (information access and beneficiation of members' relatives) encouraged members to seek funding (from government and private sector) while human capital investments did not influence the need to seek external funding in members. At the end it becomes apparent that for cooperatives to be financially independent (depend on own funding) human capital development needs to be accelerated. Below is the final framework emanating from the study findings. Furthermore, the findings indicated that cooperatives earning a monthly income were associated with high level of knowledge in

cooperative principles and Act No.14 of 2005 as amended by the Cooperative management Act No. 6 of 2013, workshops and extension services satisfaction.

Cooperatives have been proven to be effective vehicle for poverty alleviation and rural development. Evidence is documented in research work carried out by several authors (Shiferaw et al., 2011, Getnet & Anullo, 2012, Borda-Rodriguez, Johnson, Shaw, & Vicari, 2016).

In Africa problems associated with dysfunctional cooperatives are similar to that of South Africa. In Limpopo province studies assessing problems in cooperatives have been conducted (Thaba et al, 2016).

The study results suggests that cooperatives in general are still preferred vehicles of development in Limpopo province and therefore focus on solutions that could render cooperatives functional is critical.

The key thing in developing functional cooperatives begins with the manner in which they are formed. The study results revealed that there is a relationship between cooperative initiation and the operation of the cooperative. Self-initiated cooperatives are desirable than externally-initiated cooperatives. Self-initiated cooperatives stand a better chance of surviving when compared to externally initiated cooperatives. Cooperatives stakeholders should invest in educating members of the communities about genuine cooperative formation.

The study pointed out that knowledge on cooperative principles and the cooperative governing Act in South Africa was important. Based on this observation, it is advisable that before members of communities form cooperatives there should be evidence of

having some level of knowledge about cooperatives principles. This can be enforced by ensuring that members receive training on cooperative principles and Act before registering the cooperative with the Department of Trade and Industry. The Department responsible for cooperative registration can invest in such pre-registration training short courses or workshops. This is critical for the survival of cooperatives in South Africa as the study results revealed the importance of human capital stock.

Cooperatives located in rural areas are assumed to possesses more social capital stock (Léon, 2005; Milbourne, 2012) especially small cooperatives (Feng, Friis & Nilsson, 2016)

The study results indicated that the presence of social capital influenced the way cooperative members run their economic activities access to information being one of the key factors. It is crucial for cooperative stakeholders to disseminate information about cooperatives in rural areas. The most important time of intervention should be before cooperatives are formed. This will allow members of the communities to make informed decisions with realistic expectations about participating in cooperatives.

The main ultimate goal in cooperatives development is financial independence. Cooperatives are expected to be in a state of self-sufficiency, thus, they should be able to operate using own funds. The problems observed with financial dependence includes discontinuity after external funds from donors cease. Extension services in conjunction with social and human capital investment has been observed to encourage cooperatives to be self –dependent. Investment in cooperative development tailor- made extension programme will be benefit cooperatives in the long run. In South Africa government extension services play a key role in small scale farming sector primarily because farmers

in rural areas access this service for free and most farmers cannot afford private extension services used by the commercial sector.

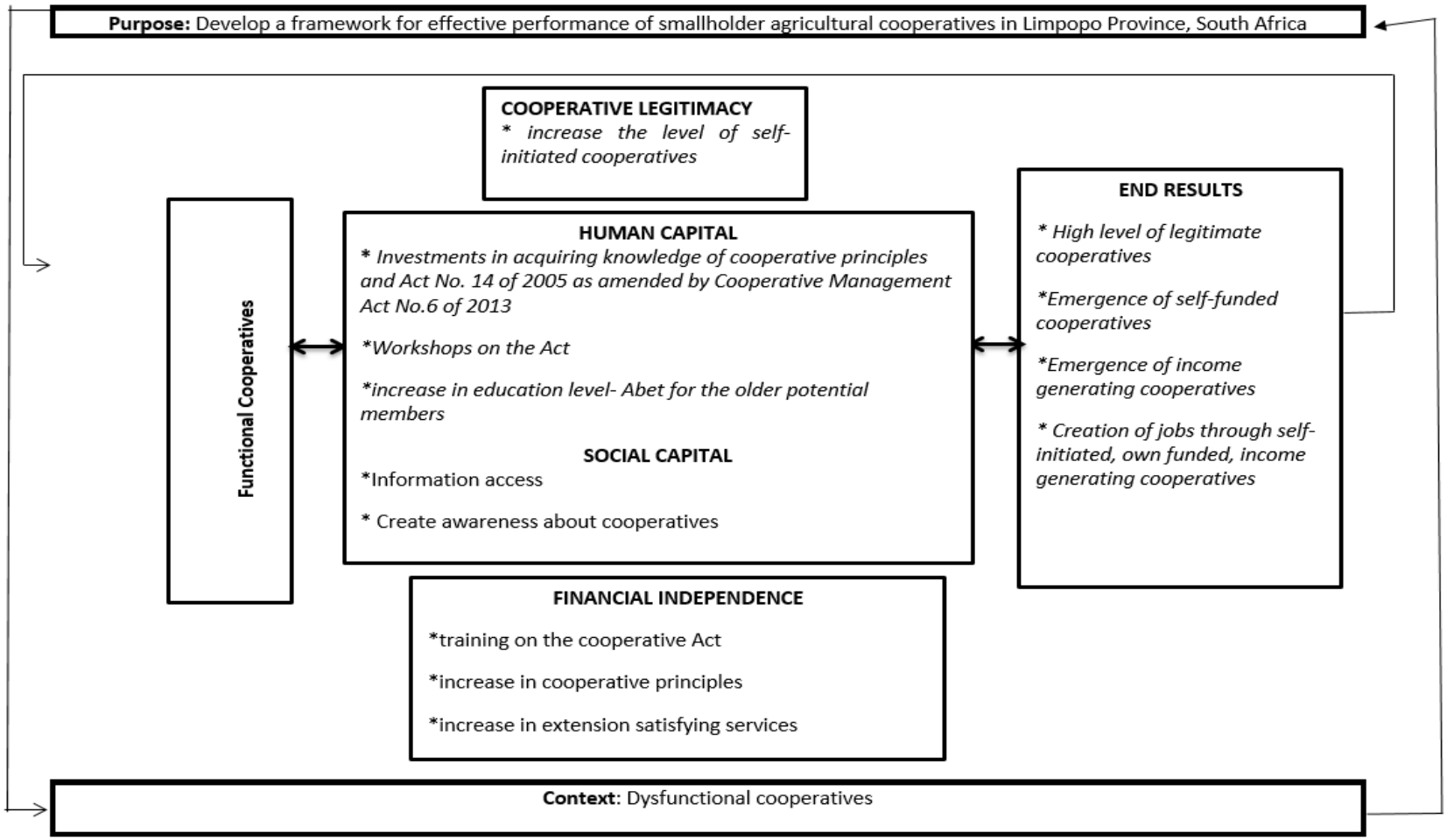


Figure 4. Framework for Sustainable Cooperative performance, Author: 2017

ANNEXURES

Annexure 1 Funding and cooperative principles and Act knowledge comparison

Source of funding		knowledge of coop principles and Act no. 14 of 2005					Total
		None	Poor	Fair	Good	Very good	
Own funding	Count	57	3	11	6	3	80
	% within knowledge of coop principles and act	64.0%	27.3%	52.4%	37.5%	33.3%	54.8%
	% of Total	39.0%	2.1%	7.5%	4.1%	2.1%	54.8%
Government	Count	28	7	9	8	5	57
	% within knowledge of coop principles and act	31.5%	63.6%	42.9%	50.0%	55.6%	39.0%
	% of Total	19.2%	4.8%	6.2%	5.5%	3.4%	39.0%
Other	Count	4	1	1	2	1	9
	% within knowledge of coop principles and act	4.5%	9.1%	4.8%	12.5%	11.1%	6.2%
	% of Total	2.7%	0.7%	0.7%	1.4%	0.7%	6.2%
Total	Count	89	11	21	16	9	146
	% within knowledge of coop principles and act	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	61.0%	7.5%	14.4%	11.0%	6.2%	100.0%

Annexure 2 Questionnaire

University of Venda

LIMPOPO AGRICULTURAL COOPERATIVES STUDY

This information is confidential and the name and address of respondents will not be divulged for any purpose other than for the monitoring and evaluation of the university. Names will not be linked to the information that is gathered and are required only for the purpose of monitoring.

District	Municipality	Tick
Vhembe	Makhado	
	Thulamela	
	Mutale	
	Musina	

District	Municipality	Tick
Waterberg	Mogalakwena	
	Lephalale	
	Modimolle	
	Thabazimbi	
	Bela-Bela	
	Mookgopong	

District	Municipality	Tick
Sekhukhune	Greater Tubatse	
	Makhuduthamaga	
	Elias Motsoaledi	
	Greater Marble	
	Fetakgomo	
	Greater Groblersdal	

District	Municipality	Tick
Mopani	Maruleng	
	Greater Tzaneen	
	Greater Giyani	
	Greater Letaba	
	Phalaborwa	

District	Municipality	Tick
Capricorn	Polokwane	
	Lepele-Nkumpi	
	Blouberg	
	Aganang	
	Molemole	

Questionnaire number:……

VISITATION DATES *1-Completed 2: Not completed					
Day 1		Time		Interview Outcome *	
Day 2		Time		Interview outcome *	

COOPERATIVE DETAILS	
Name of Coop	
Location of coop	
Respondent capacity	
Year of formation	
Contact	
signature	

ENUMERATOR 'S DETAILS	
Name	
Date	

TO BE COMPLETED BY DATA CAPTURER	
Name	
Date captured	
code	
Signature	

INFORMATION SHEET

Good (morning/afternoon/evening),my name is ……I am part of a research team from the university of Venda and we are asking people questions on Agricultural cooperatives.

This study tries to help the researcher to assess the current operations of agricultural cooperatives. The data will also be used to study future trend of agricultural cooperatives operations. We have chosen your cooperative as one of the cooperatives to be interviewed in the province. We would like one person to respond to our questions, if possible the head of the cooperative.

Please understand that you are not being forced to take part in this study and the choice whether to participate or not is yours alone. However we would really appreciate it if you do share your thoughts with us. If you choose not to take part in answering these questions, you will not be affected in any way whatsoever .If you agree to participate you may stop me at any time and tell me that you don't want to go on with the interview, if you do this, there will also be no penalties and you will NOT be prejudiced in ANY way. When it comes to answering questions there are no right or wrong answers.

The study will hold no risk for you or to any other member of your community .Although you will not personally benefit from this study, we will do our best to make sure that people in Limpopo benefit from this study. All information that you give to us will be kept confidential and you will not be identified by name or address in any reports that we plan to write. In a few months or years' time we may visit you again to collect new information so that we can see how things have changed for you .for this reason only do we ask for your cooperative and contact numbers

If you would some more information about this study please feel to contact Univen at 015 962 9002/0726129084

DECLARATION BY FIELD ENUMERATOR

DECLARATION BY FIELD ENUMERATOR

I ……hereby declare that I explained to the respondent that he or she is participating freely in this research also explained to the respondent that he or she may stop this interview at any point and such that a decision would not in any way affect them negatively explained to the respondent that this is a research project whose purpose is not necessarily to benefit him or her personally. I explained to the respondent that the answers he or she will provide during the interview would remain confidential ……..

Signature of field Enumerator Date:…….

SECTION A: HOUSEHOLD CHARACTERESTICS & HUMAN CAPITAL

A01 Member type	A02 Position in the coop (enter code)	A03 Gender Male Female		A04 Year of birth	A05 Marital status (enter code)	A06 No. of years in school (years)	A07 Type of settlement 1-urban 2-rural	A08 Disability 1-No 2-Yes	A09 Years of formal education	A10 Level of cooperative education 1-none 2-workshop 3-training	A11 Household size no	A12 No. of workers in household	A13 1-grants 2-pension 3-remittances	A14 Primary occupation of member
		1	2									Workers=		
		1	2									Non-workers=		

A02 codes	
Chairperson	1
Deputy chairperson	2
Secretary	3
Treasurer	4
member	5
Other……	6

A05 codes	
Married	1
Divorced	2
Single	3
Widowed	4
Living together	5
Other……	6

A06 codes	
None	0
primary	1-7
secondary	8-12
Tertiary	13-16
Post tertiary	17-25

A14 codes					
Formal employment	1	Pensioner	4	Unskilled labourer	7
Temporal employment	2	Self employed	5	Student	8
Unemployed	3	farming	6	Other, specify	9

SECTION B: COOPERATIVES FORMATION BACKGROUND

B01 When was the coop started?.....

B02 How many members are there in the coop?.....

B03 what motivated members to start a coop

Desire to produce collectively	01	Motivation from LIBSA	05
Desire to sell collectively	02	Motivation from LDA	06
Desire to market collectively	03	Motivation from the local municipality	07
Motivation from SEDA	04	Other, specify……	08

B04 Was the coop ever promised funding upon formation from anywhere?

No	Yes	
01	Government	02
	Libsa	03
	Seda	04
	Other, specify……..	05

B05 What were the agreed main activities of the coop initially?

Production	01	Input supply	03	selling	05
marketing	02	Manufacturing	04	other, specify	06

B06 What are the current activities in the coop?

Production	01	Input supply	03	selling	05
marketing	02	Manufacturing	04	other, specify	06

B07 How well do most members understand the coop Act?

Some do not know it at all	01	fairly	03	Very good	05
poor	02	Good	04	other, specify	06

B08 Have members been workshopped before on the Act?

Yes	No
01	02

B09 Has the coop been funded before?

No	**Yes**			year
01	Libsa	R……	02	
	LDA	R…….	03	
	SEDA	R…….	04	
	DAFF	R…….	05	
	DTI	R…….	06	
	Other, specify	R…….	07	

B10 Is the coop currently active?

Yes	No
01	02

B11 If not active, what are the challenges?.....

B12 If active how long has it been active?.....

B13What are the challenges in the coop? .....

B14 Are you happy with extension services? .....

.....
.....
.....

SECTION C: SOCIAL CAPITAL

Please indicate using 4-point scale the extent to which you agree with the following statements in table below. 1-Strongly Agree (SA), 2-Agree-(A), 3-Disagree (D), 4-Strongly Disagree (SD).

		SA Strongly Agree	A Agree	D Disagree	SD Strongly Disagree
C1	Support of members comes from cooperatives in times of need	1	2	3	4
C2	Members participate economically when need arises	1	2	3	4
C3	Members attend meetings regularly when invited	1	2	3	4
C4	Members always have information about cooperatives from media	1	2	3	4
C5	Members share information amongst each other regularly	1	2	3	4
C6	Members attend social events of other members such as weddings, funerals regularly	1	2	3	4
C7	Members form part of decision making in the cooperatives	1	2	3	4
C8	Members vote on general annual meeting	1	2	3	4

C9. Are you affiliated to any formal or informal association? Chose a code below

01	Farmer association	04	Tertiary cooperative
02	Agricultural association	05	Apex
03	Secondary cooperative	06	Other, specify

SECTION D: CONTRIBUTION TO LIVELIHOODS

D1 How much income do you receive monthly/annually from the coop? R……..

D2 list the benefits that you have received from the coop?

……
……

D3 Have you received training or workshops organized by the coop itself?

Yes	No
01	02

Please indicate using 4-point scale the extent to which you agree with the following statements in table below. 1-Strongly Agree (SA), 2-Agree-(A), 3-Disagree (D), 4-Strongly Disagree (SD).

		SA Strongly Agree	A Agree	D Disagree	SD Strongly Disagree
D4	Relatives of the cooperative members have benefitted from the cooperative	1	2	3	4
D5	Permanent jobs have been created by the cooperative	1	2	3	4
D6	Temporary jobs have been created by the cooperative	1	2	3	4
D7	Community has benefited from the cooperative	1	2	3	4
D8	The cooperative's infrastructure has improved over time	1	2	3	4

RECCOMENDATIONTS

How can coops be assisted?

……

……

……

	Manufactured Capital	SA -Strongly Agree	A-Agree	D-Disagree	SD-Strongly Disagree
1a	There is enough buildings in the coop?	1	2	3	4
1b	there are accessible transport networks	1	2	3	4
1c	people use communications tech	1	2	3	4
1d	there is a good waste disposal systems	1	2	3	4
1e	the coop is using tech such computers	1	2	3	4
1f	the coop is using tech such computers production machines	1	2	3	4

	Natural capital (also sometimes referred to as environmental or ecological capital) is the natural resources (energy and matter) and processes needed by organisations to produce their products and deliver their services	SA-Strongly Agree	A-Agree	D-Disagree	SD-Strongly Disagree
2a	the coop has recycle waste	1	2	3	4
2b	coop source of water is municipality	1	2	3	4
2c	Coop has knowledge on climate change	1	2	3	4
2d	Coop has knowledge on bio energy	1	2	3	4

	Those assets of an organisation that exist in a form of currency that can be owned or traded, including (but not limited to) shares, bonds and banknotes.	SA-Strongly Agree	A-Agree	D-Disagree	SD-Strongly Disagree
3a	Coop has shares	1	2	3	4
3b	Coop has bonds	1	2	3	4
3c	Coop has savings in the bank	1	2	3	4
3d	Coop has debts	1	2	3	4
3e	Coops loans money to members	1	2	3	4

Annexure 3 Consent form to be completed by the focus group members.

TOPIC: Towards a framework for effective performance of smallholder agricultural cooperatives in Limpopo Province, South Africa

I have read the Participant Information Sheet describing the nature and purpose of the research project and agree to take part.

I understand the purpose of the research project and the nature of my involvement in it.

I understand that I may withdraw from the research project at any stage and that this will not affect my status within the project, either now or in the future.

I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential.

I understand that I may be audio taped during any interview and that I reserve the right to terminate the recording at any point of time during the interview.

I understand that data will be held confidentially, in a secure place and in a password-protected computer in the form of hard and electronic copies of transcripts and audiotapes. These data will be accessible to the researcher only.

I understand that I may contact the Research Director if I require further information about the research, and that I may contact the Research Ethics Coordinator of the University of Venda if I wish to make a complaint relating to my involvement in the research.

Signed: .....

(Research participant)

Print name: .....

Date: .....

Signed: .....

(Research Director)

Research Director: ..... (Name and contact details)

Research Ethics Coordinator: ..... (Name and contact details

Annexure 4 Consent form to be completed by all the respondents.

CONSENT FORM **University of Venda** Topic: Towards a framework for effective performance of smallholder agricultural cooperatives in Limpopo Province, South Africa The consent form is designed to check that you understand the purposes of the study, that you are aware of your rights as a participant and to confirm that you are willing to take part			
Please tick as appropriate			
		YES	NO
The nature of the study has been described to me.			
I have received sufficient information about the study for me to decide whether to take part.			
I understand that I am free to refuse to take part if I wish			
I understand that I may withdraw from the study at any time without having to provide a reason			
I know that I can ask for further information about the study from the research team.			
I understand that all information arising from the study will be treated as confidential.			
I know that it will not be possible to identify any individual respondent in the study report, including myself.			
I agree to take part in the study			
Signature:	Date:		
Name in block letters, please:			
I confirm that quotations from the interview can be used in the final research report and other publications. I understand that these will be used anonymously and that no individual respondent will be identified in such report.			
Signature:	Date:		
Name in block letters, please:			

Annexure 5 Letter to Department of Agriculture Limpopo (LDA)

P.O. Box 4005

Louis Trichardt

0920

Dear Sir/Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I am a doctoral student at the university of Venda in the School of Agriculture under the Department of Agricultural Economics and Agribusiness presently undertaking a study entitled: Topic: Towards a framework for effective performance of smallholder agricultural cooperatives in Limpopo Province, South Africa

The purpose of the study is to develop a model which can enable cooperatives to be operational in Limpopo province.

The following ethical standards will be followed throughout the research process:

Informed consent

Voluntary participation and freedom to withdraw without any penalty

Names of participants will not be mentioned during discussions

Thank you in advance

Yours Faithfully

Ms. Maiwashe A.

Annexure 6 Population of agricultural cooperatives proportion in Limpopo Province in 2014/2015 CODAS database

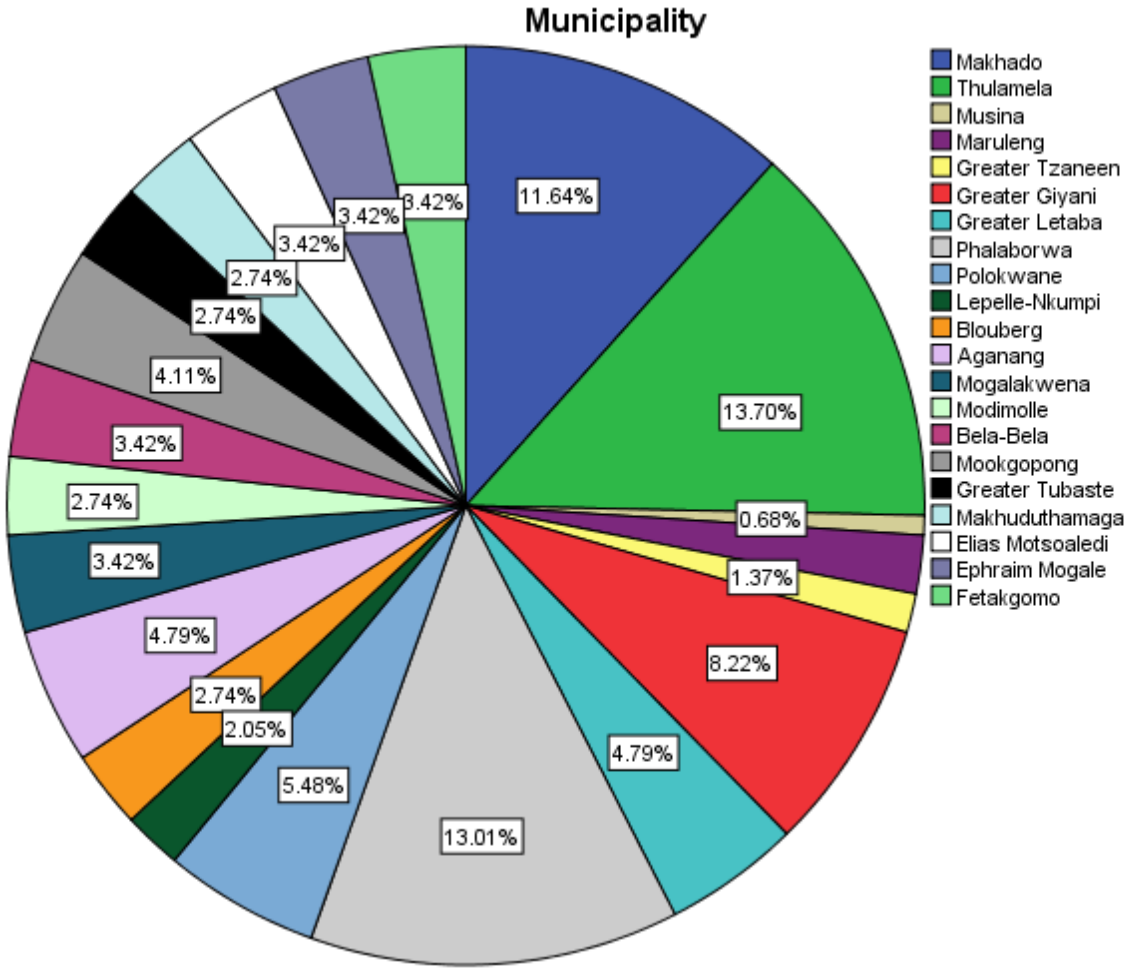
DISTRICT	*MUNICIPALITY*	*NO OF CO-OPs*
VHEMBE (90 Co-op)	Thulamela	56
	Mutale	12
	Musina	5
	Makhado	17
MOPANI (37 Co-op)	Maruleng	4
	Greater Tzaneen	4
	Greater Giyani	16
	Greater Letaba	8
	Phalaborwa	5
CAPRICORN (27 Co-op)	Polokwane	6
	Lepele-Nkumpi	0
	Blouberg	0
	Aganang	20
	Molemole	1
WATERBERG (33 Co-op)	Mogalakwena	2
	Lephalale	4
	Modimolle	3
	Thabazimbi	0
	Bela-Bela	13
	Mookgopong	11
SEKHUKHUNE (81 Co-op)	Greater Tubatse	8
	Makhuduthamaga	18
	Elias Motsoaledi	28
	Greater Marble	25
	Fetakgomo	2

Annexure 7 Purposive sampling proportion within district and municipalities

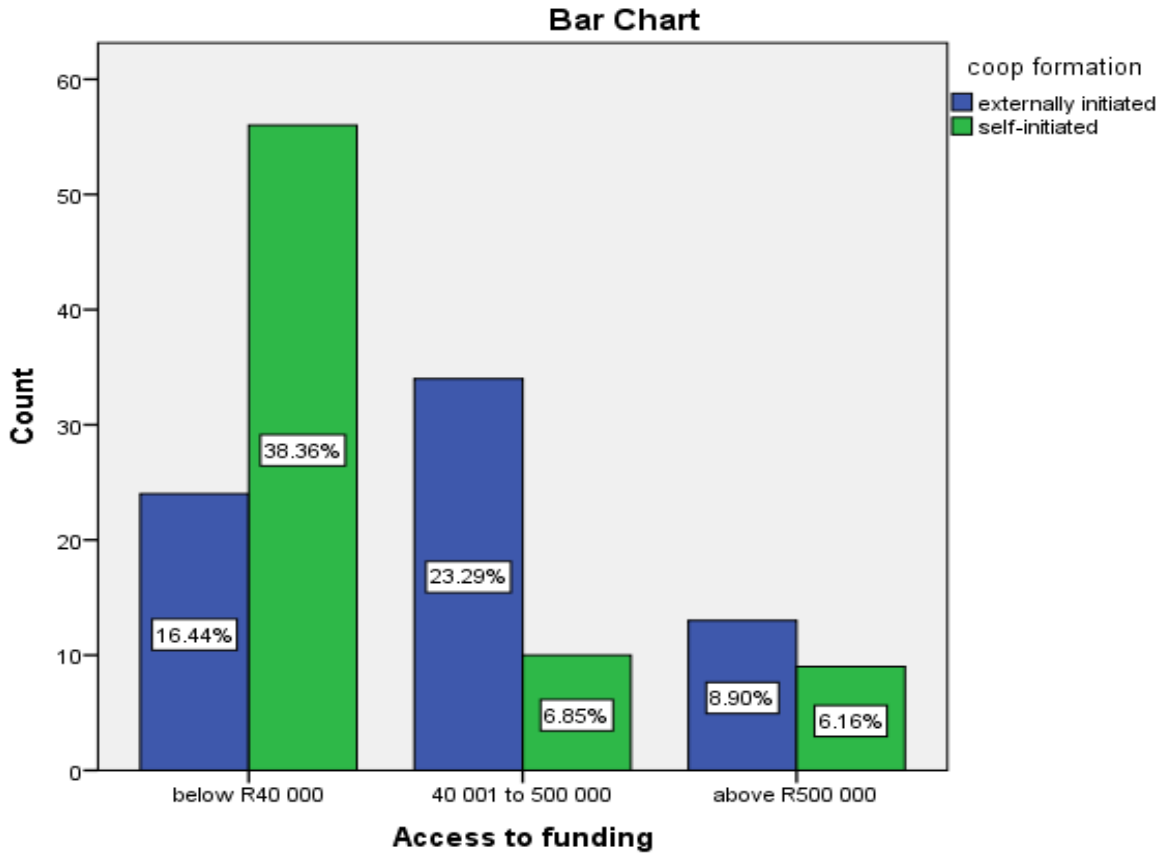
District			
	Frequency	Percent	Valid Percent
Vhembe	38	26.0	26.0
Mopani	43	29.5	29.5
Capricorn	22	15.1	15.1
Waterberg	20	13.7	13.7
Sekhukhune	23	15.8	15.8
Total	146	100.0	100.0

Municipality				
	Frequency	Percent	Valid Percent	Cumulative Percent
Makhado	17	11.6	11.6	11.6
Thulamela	20	13.7	13.7	25.3
Musina	1	.7	.7	26.0
Maruleng	3	2.1	2.1	28.1
Greater Tzaneen	2	1.4	1.4	29.5
Greater Giyani	12	8.2	8.2	37.7
Greater Letaba	7	4.8	4.8	42.5
Phalaborwa	19	13.0	13.0	55.5
Polokwane	8	5.5	5.5	61.0
Lepelle-Nkumpi	3	2.1	2.1	63.0
Blouberg	4	2.7	2.7	65.8
Aganang	7	4.8	4.8	70.5
Mogalakwena	5	3.4	3.4	74.0
Modimolle	4	2.7	2.7	76.7
Bela-Bela	5	3.4	3.4	80.1
Mookgopong	6	4.1	4.1	84.2
Greater Tubaste	4	2.7	2.7	87.0
Makhuduthamaga	4	2.7	2.7	89.7
Elias Motsoaledi	5	3.4	3.4	93.2
Ephraim Mogale	5	3.4	3.4	96.6
Fetakgomo	5	3.4	3.4	100.0
Total	146	100.0	100.0	

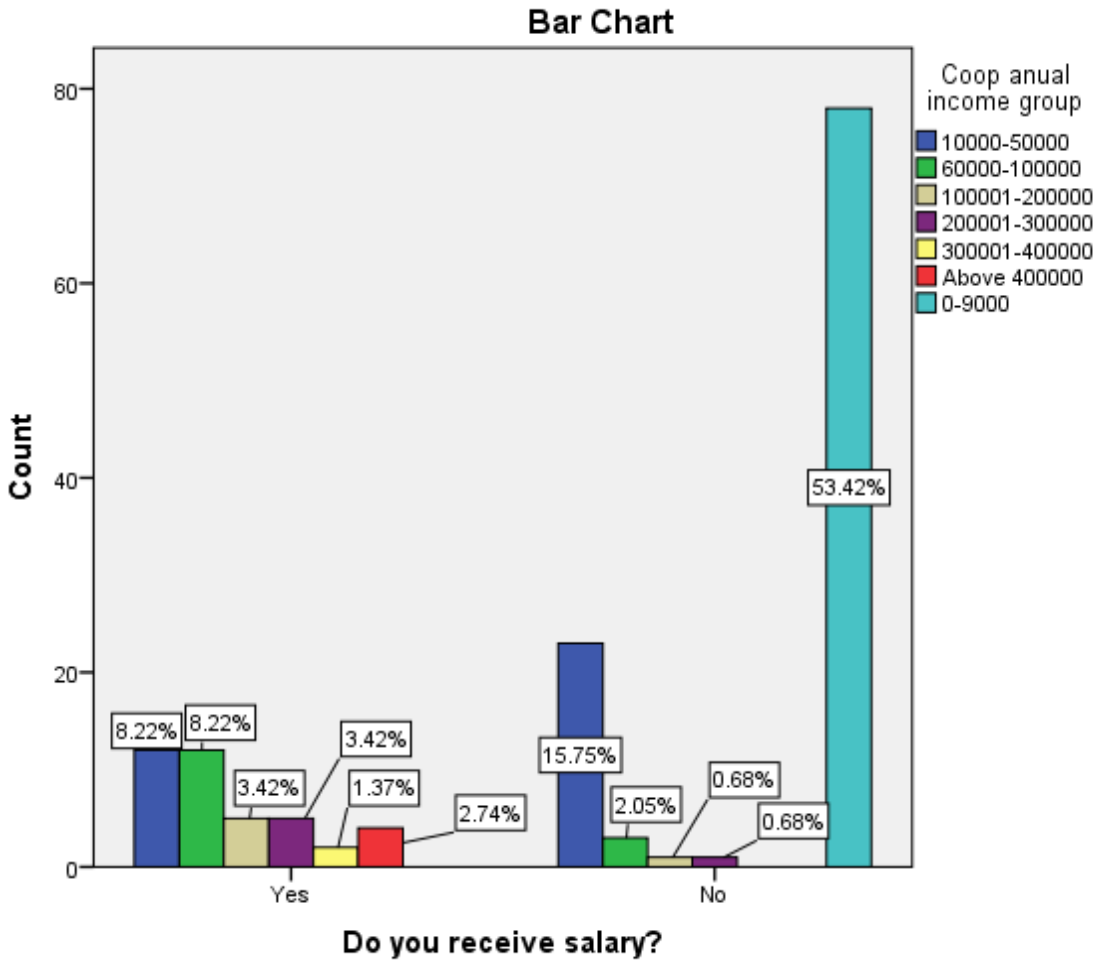
Annexure 8 Sampling proportion for the study within Municipalities



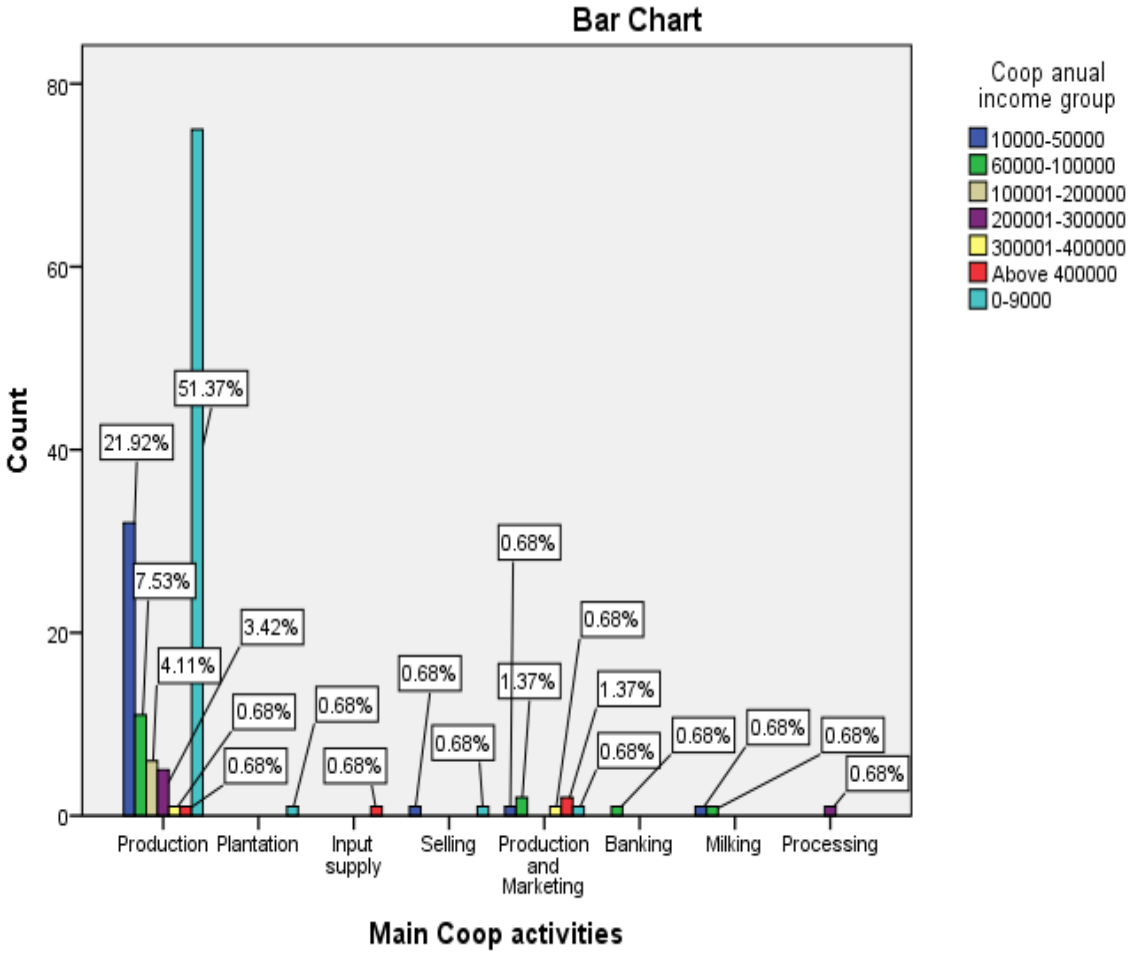
Annexure 9 funding and cooperative formation



Annexure 10 Salary receiving cooperatives and annual income



Annexure 11 Cooperatives activities and income group



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