AN ASSESSMENT OF THE FINANCIAL SUSTAINABILITY OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN KENYA

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Abstract

Savings and Credit Cooperative Societies (SACCOs) are voluntary associations of people with the common goal of encouraging savings and granting credit to members as a means to their economic improvement. For a long period of time, SACCOs have been seen as a way of ensuring savings and investments, especially by the middle and lower economic classes. In Kenya, these institutions have managed to accumulate funds running into billions of shillings, and many members have benefited from them. However, in the last few years, many of these institutions have experienced serious financial challenges that have led to some of them winding up or becoming dormant, resulting in a loss of funds for members.

The primary objective of this study was to determine the factors that influence the financial sustainability of SACCOs in Kenya. The study explored the influence of financial outreach, financial regulation, corporate governance, size and age on financial sustainability. A sample of 166 SACCOs was drawn for the study, and generalised least square technique was used to analyse the data. Empirical findings of the study reveal that financial outreach, as measured by the number of members, exerts a significant influence on financial sustainability. Similarly, financial regulation, SACCOs' governance, SACCOs' size and SACCOs' age were found to exert a significant influence on the financial sustainability of SACCOs.

The study has contributed to theory by applying both monetary and non-monetary measures to profitability theory of financial sustainability. While contributing to empirics, the study has delineated the relationship between the study factors and their financial sustainability status (FSS), as well as documenting the FSS of SACCOs in Kenya. In terms of methodology, the study applied the GLS analysis technique. Finally, the study provides useful information to SACCO policy makers and opens avenues for future research, thus contributing to practice. The recommendations of the study provide insights into how to rescue ailing SACCOs in Kenya and ameliorate the existing situation.

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Many thanks to the Ministry of Industrialization and Enterprise Development, which granted me permission to undertake this research. The Ministry under which SACCOSs fall has an interest in the findings of the research, thus the findings will be presented orally and in writing to the Ministry upon completion and graduation of the author.

I also wish to thank my wife Lucy, my sons Alex and Michael, and daughter Immaculate, for their endurance, patience and encouragement during the time I was away from home pursuing this degree.

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I dedicate this research work to my dad, Joseph Karuga, my mother Hellen Muthoni, my lovely wife Lucy Nyambura, children Alex Karuga, Immaculate Muthoni and Michael Kamau, and all my brothers and sisters.

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List of Acronyms

AGC	Australian Government Council
AGM	Annual General Meeting
AGPC	Australian Government Productivity Commission
ASE	Amman Stock Exchange
BOD	Board of Directors
CEO	Chief Executive Officer
CUs	Credit Unions
EP	Expense Preference
FOSA	Front office service activity
FSS	Financial self-sufficiency
GCG	Good corporate governance

ICS	Internal control systems
ICT	Information and communication technology
IMF	International Monetary Fund
KES	Kenya Shillings
KUSCO	Kenya Union of Savings and Credit Cooperative Societies
MFI	Micro Finance Institution
MIED	Ministry of Industrialization and Enterprise Development
NSE	Nairobi Securities Exchange
OER	Operational efficiency ratio
POR	Pay-out ratio
ROA	Return on assets

SACCOs	Savings and Credit Cooperative Societies
SASRA	SACCO Society Regulatory Authority
SME	Small and medium enterprises
UK	United Kingdom
UN	United Nations
USA	United States of America

Chapter 1: Introduction

1.1 Research area

Savings and Credit Cooperative Societies (SACCOs) are voluntary associations of people who have come together with the common goal of encouraging savings and granting credit to members in order to improve their livelihoods (Bwana & Mwakujonga, 2013; Cheruiyot, Kimeli, & Ogendo, 2012; Okibo & Chepkwei, 2013). SACCOs are owned and democratically controlled by their members (Matumo, Maina, & Njoroge, 2013; Moturi & Mbiwa, 2015). SACCOs are referred to by different names around the world; in Kenya and Tanzania, SACCOs are known as Micro Finance Institutions (MFIs) (Muriuki, Nganga, & Kyalo, 2014), in South Africa they are referred to as Stokvels (Cornelius, 2009; Lukhele, 1990), and in Europe and the Americas they are known as Credit Unions (CUs) or Thrift Institutions (Muriuki et al., 2014; Otieno, Mugo, Njeje, & Kimathi, 2015; Qin & Ndiege, 2013). In this thesis, the different names are used interchangeably.

The two main functions of SACCOs are financial intermediation and investment (Bezboruah & Pillai, 2014; Moturi & Mbiwa, 2015; Nwankwo, Ewuim, & Asoya, 2013; Tache, 2006). Financial intermediation entails encouraging and promoting a thrift culture of saving among members; educating members on how to create assets, acquire collateral for loan access and create an enabling environment for the flow of funds in the community; and making finance available to members (Bezboruah & Pillai, 2014; Moturi & Mbiwa, 2015; Nwankwo et al., 2013; Tache, 2006). The investment function involves encouraging members to develop formal businesses, advising members to buy SACCO shares, and paying dividends to members out of the surplus at the end of the financial year (Bezboruah & Pillai, 2014; Moturi & Mbiwa, 2015; Nwankwo et al., 2013; Tache, 2006).

The main objectives of the SACCOs are thus to promote resource mobilisation and to lend funds to their members (Bwana & Mwakujonga, 2013; Cheruiyot, et al., 2012; Matumo et al., 2013; Moturi & Mbiwa, 2015; Okibo & Chepkwei, 2013). To achieve these objectives, SACCOs accept deposits from their members and encourage them

to borrow from the SACCO, which then makes a profit (Bwana & Mwakujonga, 2013; Okibo & Chepkwei, 2013). Through the deposits, the SACCOs have solved the problem of lack of financial access among people who are not serviced by the formal banking system, especially in the rural areas (Magali, 2013). They have also catered for the fundamental human needs of saving and borrowing (Muriuki et al., 2014). These savings have, in turn, led to the financial sustainability and growth of the Kenyan financial sector (Cheruiyot et al., 2012). Loan access is made easy for members, and the cost of borrowing is lower compared to that of commercial banks and other financial institutions (Bwana & Mwakujonga, 2013; Cheruiyot et al., 2012; Matumo et al., 2013; Moturi & Mbiwa, 2015; Okibo & Chepkwei, 2013; Qin & Ndiege, 2013). Further, the provision of easily accessible low cost loans has increased membership numbers, thus reducing financial exclusion (Matumo et al., 2013; Moturi & Mbiwa, 2015; Nyamsogoro, 2010).

SACCOs are registered and regulated under the Kenyan SACCO Act of 2008. SACCOs form a subsector of the cooperative movement, with specific objectives of resource mobilisation and lending to members who in most cases are financially excluded (Cheruiyot et al., 2012). Other subsectors of the cooperative movement include *inter alia* agricultural cooperative societies that aim at promoting agricultural activities in Kenya (Cooperative Bank, 2008). The cooperative movement in Kenya, under which SACCOs fall, is an important player in the socio-economic development of the country (Cheruiyot et al., 2012; Cooperative Bank, 2008). Cooperatives cut across all sectors of the economy and provide an important framework for the mobilisation of both human and capital resources (Bwana & Mwakujonga, 2013; Cheruiyot et al., 2012; Matumo et al., 2013; Moturi & Mbiwa, 2015; Okibo & Chepkwei, 2013). More importantly, according to the World Council of Credit Unions (WOCCU), the Kenyan SACCO sub-sector has a total membership of over five million people. The total loans to members have accumulated to over US$4.2 billion, with total assets of over US$5.069 billion, making it one of the largest sub-sectors in Africa (WOCCU, 2014).

The SACCO movement is independent and autonomous, however, through the Ministry of Industrialization and Enterprise Development (MIED), the government has

continued to play a key facilitative role in the activities of the movement (Cooperative Bank, 2008). The Ministry has been working on enabling the sector to become vibrant, effective and globally competitive by forging close links between the cooperative movement and government ministries. As a result, cooperatives are now playing an important role in the achievement of Kenya's Vision 2030 and the United Nations Millennium Development Goals (Bezboruah & Pillai, 2014; Cooperative Bank, 2008).

1.2 Research context

This research study is based on SACCOs in Kenya, thus a deeper analysis of the history and operation of SACCOs is provided in this section.

The first SACCO in Africa was created in Jipara, Ghana (Olando, Mbewa, & Jagongo, 2012), by a Roman Catholic priest, Father John McNulty, who was from Ireland (Bwana & Mwakujonga, 2013). Father McNulty started the SACCO with the intention of financially empowering the local community, and began by training 60 people, most of whom were teachers, on SACCO operations (Bwana & Mwakujonga, 2013). After the first SACCO was established, other English speaking African countries, including Uganda, Tanzania and Kenya (Olando et al., 2012), followed suit and started more SACCOs. These countries included *inter alia* Uganda, Tanzania and Kenya (Olando et al., 2012). Most of the non-English speaking countries in Africa established SACCOs in the 1970s (Bwana & Mwakujonga, 2013).

In the Kenyan context, the first cooperative society was established in 1908 in Lumbwa by European farmers (Bwana & Mwakujonga, 2013). Before 1930, the colonial government denied Africans the right to form cooperatives, arguing that Africans could not be trusted to run them or even keep books of accounts (Ongore, 2001; Oyoo, 2002). As a result of this discouragement, the development of cooperatives in Kenya was very slow (Ongore, 2001; Oyoo, 2002). In 1931, the first cooperative law was enacted by the colonial government to govern all cooperative societies (Bwana & Mwakujonga, 2013). This change in policy by the colonial

government was the turning point of the cooperative movement in Kenya (Bwana & Mwakujonga, 2013).

At independence in 1963, the Kenyan government continued to promote the cooperative movement, with the first post-independence SACCO being formed the following year; SACCOs were seen by the government as a means of involving the masses in economic development within a short period of time. In 1969, the government required that all SACCOs embrace the common bond principle, such that SACCO members were employees or members of a marketing organisation to allow for check-offs system (Owen, 2007). This system was set up to ensure a sustainable flow of cash to the SACCOs, making them financially sustainable (Bwana & Mwakujonga, 2013).

In 1973, the government established the Kenya Union of Savings and Credit Cooperative Societies (KUSCO) to be the umbrella body of all SACCOs in Kenya. The government's interest in the SACCO movement continued thereafter, and the SACCO Act of 1997 was enacted to enhance governance of SACCOs to protect the interests of stakeholders (Owen, 2007). This was followed by the enactment of the SACCO Act of 2008 and further SACCO regulations in 2010 (Cheruiyot et al., 2012).

The SACCO Act of 2008 established the SACCO Society Regulatory Authority (SASRA) in 2010. SASRA is a statutory state corporation established under the Sacco Societies Act (Chapter 490B) of the Laws of Kenya 2010 (Cheruiyot et al., 2012). The corporation came into full operation upon the gazettement of the Sacco Societies Regulations of 2010 on 18th June 2010. The functions of SASRA include licensing SACCOs to carry out deposit taking business, regulating and supervising SACCOs, managing the SACCO fund, and performing such other functions as conferred on it by the SACCO Act of 2008 (Bwana & Mwakujonga, 2013; Cheruiyot et al., 2012).

SACCOS in Kenya play a number of roles in the economy, the most critical being funds mobilisation and lending of these funds to members (Bwana & Mwakujonga, 2013; Cheruiyot, et al., 2012; Matumo et al., 2013; Moturi & Mbiwa, 2015; Okibo &

Chepkwei, 2013). SACCOs receive deposits from their members, which promotes a culture of saving, and then lend these funds to members at a lower interest rate compared to that charged by banks (Bezboruah & Pillai, 2014; Moturi & Mbiwa, 2015; Nwankwo et al., 2013; Tache, 2006). Through taking of deposits, SACCOs have managed to solve the problem of financial inadequacy (Magali, 2013). Lending of funds on the other hand helps in reducing financial exclusion (Bwana & Mwakujonga, 2013; Cheruiyot, et al., 2012; Matumo et al., 2013; Moturi & Mbiwa, 2015; Okibo & Chepkwei, 2013). Secondly, SACCOs play a major role in poverty eradication (Bwana & Mwakujonga, 2013). This is achieved by providing finances to members in the form of loans that can be used to start businesses as well as other development projects (Bwana & Mwakujonga, 2013). Members are encouraged to develop formal businesses that are funded by loans procured from the SACCOs (; Matumo et al., 2013; Moturi & Mbiwa, 2015). Members' incomes are also improved through the payment of dividends, which enjoy a lower withholding tax rate of 5% compared to dividends from other sources which are charged a withholding tax of 10% (Bwana & Mwakujonga, 2013; Waweru, Mbogo & Shano, 2013).

SACCOs have been earmarked as one of the tools to ensure that Kenya achieves its Vision 2030 and the United Nations' Millennium Development Goals by helping eradicate poverty (Bezboruah & Pillai, 2014; Cooperative Bank, 2008). SACCOs are expected to mobilise savings from their members for investment purposes and to provide financial access for the many Kenyans who are considered to be financially excluded (Bwana & Mwakujonga, 2013; Matumo et al., 2013; Moturi & Mbiwa, 2015). This responsibility and expectation underpins the important role that SACCOs play (Bwana & Mwakujonga, 2013; Matumo et al., 2013; Moturi & Mbiwa, 2015).

To perform the above roles, SACCOs in Kenya receive deposits from members and issue loans (Bwana & Mwakujonga, 2013; Matumo et al., 2013; Moturi & Mbiwa, 2015). There are two categories of deposits in SACCOs: non-withdrawable and withdrawable deposits (Bwana & Mwakujonga, 2013). The former category represents share capital, also called equity capital, and can be used as collateral to secure a loan. This form of deposit can only be refunded when a member quits the SACCO (Bwana & Mwakujonga, 2013; Matumo et al., 2013; Moturi & Mbiwa, 2015).

The latter category can be withdrawn any time by a member, but can only be done at a SACCO that offers front office service activity (FOSA) (Bwana & Mwakujonga, 2013; Matumo et al., 2013; Moturi & Mbiwa, 2015). SACCOs have different loan products that include development loans, school fees loans, emergency loans, and salary advance loans, among others (Bwana & Mwakujonga, 2013; Matumo et al., 2013; Moturi & Mbiwa, 2015). To acquire such loans, a borrower requires two to three guarantors who are liable in case of default. A member's equity capital is also used as collateral (Bwana & Mwakujonga, 2013; Matumo et al., 2013; Moturi & Mbiwa, 2015).

The importance of SACCOs in the Kenyan economy cannot be overemphasised; the SACCO subsector contributes approximately 45% of Gross Domestic Product (GDP) in Kenya (Bwana & Mwakujonga, 2013), and it is estimated that at least one out of every two Kenyans directly or indirectly derives their livelihood from cooperative organisations (Gweyi, Ndwiga & Karagu, 2013). In addition, SACCOs are recognised as the easiest capital accumulation avenues, which provide financial education across social demographic stratification. The Cooperatives Act provides for an education committee in every SACCO so as to facilitate the financial education of members on a regular basis. Since the government of Kenya recognised the enormous potential of SACCOs to contribute to economic growth, additional legislation in 2008 and 2010 were made to protect the sector and provide necessary support for its growth (Bwana & Mwakujonga, 2013). Kenya has thus become the leading African country in the SACCO movement (SASRA, 2012).

Despite the fact that SACCOs play a pivotal role in the Kenyan economy, their financial health has been called into question. Of all the SACCOs in Kenya, 28% are not operational (Cooperative Bank, 2008), which is a high percentage in relation to the massive contribution of SACCOs to the economy.

SACCOs in Kenya operate under 10 different principles, i.e. the SACCO principles (SASRA, 2015), which are the foundation of the SACCO management model in Kenya (Bwana & Mwakungoja, 2013; Chenuos, Mohamed & Bitok, 2014; Muriuki & Ragui, 2013). These principles are: voluntary and open membership, democratic

member control; members' economic participation; autonomy and independence; education, training and information for the members; cooperation among cooperatives; non-discrimination; service to members; concern for community; and building a financially sustainable institution (SASRA, 2015). The above principles lay the foundation of the SACCO management model in Kenya (Bwana & Mwakungoja, 2013; Chenuos, Mohamed & Bitok, 2014; Muriuki & Ragui, 2013). SACCOs in Kenya are governed by a board of directors (BOD), which is elected to office by the members (Chenuos et al., 2014; Muriuki & Ragui, 2013; Otieno, Oluoch, & Wen, 2010; Wanjau, 2007). The supreme authority of a SACCO is exercised at the annual general meetings (AGMs), and it is the responsibility of the members to ensure that appropriate and credible individuals are elected to the BOD (Chenuos, et al., 2014; Muriuki & Ragui, 2013; 2010; Wanjau, 2007). The boards are comprised of both executive and non-executive directors who are not on the payroll, however a member can be reimbursed for any expenses incurred in discharging their official duties (Mudibo, 2005). Board members are held responsible for any losses associated with their actions (Nur'ainy, Nurcahyo & Sugiharti, 2013), and they are not allowed to meet more than 12 times in a year (SASRA, 2012).

The BODs are subdivided into a number of subcommittees, including the finance and administration committee, credit committee, education/marketing committee and audit committee (Chenuos, et al., 2014; Muriuki and Ragui, 2013; Otieno, et al., 2010; Wanjau, 2007). A supervisory committee is also established to play the role of independent or non-executive directors. Below the BOD there is a chief executive officer (CEO), who is in charge of the day-to-day operations of the SACCO. There are also other SACCO staffs, but the number depends on the size of the SACCO (Chenuos, et al., 2014; Muriuki & Ragui, 2013; Otieno, et al., 2010; Wanjau, 2007).

The board ensures that their SACCO maintains a good image, and is also responsible for the appointment and removal of the CEO (Muriuki & Ragui, 2013). Other duties of the board include the establishment of internal control systems, the appointment of external auditors, the submission of audited accounts to SASRA before their publication, and holding the AGM within four months after the end of the financial year (Otieno, et al., 2010; Wanjau, 2007). Good corporate governance in

SACCOS aims at protecting the members, who are the SACCO owners. In this way, transparency, efficiency, accountability, and the financial sustainability of SACCOs are ensured (Muriuki & Ragui, 2013). Proper governance practices ensure the correct utilisation of SACCO resources, resulting in wealth creation for the members and creating financial sustainability (Otieno, et al., 2010; Wanjau, 2007).

SACCOs in Kenya operate under a peculiar environment compared to other participants in the Kenyan financial system. First, Kenya operates a bank-based financial system with a high integration between banking and commerce; banks offer both banking and non-banking services, such as the sale of other companies' shares to the public on a commission basis (Allen & Rai, 1996). While the SACCO sector has mobilised over 3.2 billion US dollars as savings or deposits (WOCCU, 2014), which account for approximately 31% of the national savings, over 60% of the national savings are attributable to the banking sector (Wambua, 2017). Commercial banks and SACCOs compete for the same customers (Alecia et al., 2013; Miriti, 2014; Mumanyi, 2014), thus commercial banks have adopted a liberal lending policy in order to entice customers who would otherwise turn to SACCOs for their financial needs. Commercial banks are also financially stronger and therefore outmanoeuvre the weaker SACCOs (Mumanyi, 2014).

Second, SACCOs in Kenya operate in a capital rationing environment (Wambua, 2017), which is defined as the placing of financial restrictions on the amount of money that can be invested in projects with positive net present value (Mai & Li, 2016; Osmundsen, Løvås, & Emhjellen, 2017). As SACCOs are not able to mobilise enough deposits that can be used to issue loans to members and invest other funds in projects with positive net present value, this has led to the erosion of the capital base of SACCOs (Wambua, 2017). The limited access of SACCOs to the capital market has further fuelled the problem of capital rationing, as a result of which most SACCOs are unable to honour loan applications from members apart from investing in SACCO assets (Kimoi, Ayuma & Kirui, 2016).

Third, as stated earlier, the government has enacted several legislations to control and regulate the operations of SACCOs, the latest of which are the SACCO Act of

2008 and the SACCO regulations of 2010. These regulations have established a bureaucratic administrative framework that inhibits SACCO growth (Bwana & Mwakujonga, 2013). Furthermore, some SACCOs are still practising the common bond principle where membership is restricted, however SACCOS offering FOSA have moved away from this concept (Bwana & Mwakujonga, 2013). Some SACCOs are run by volunteers who are responsible for making technical decisions including loan disbursements. The role of BOD subcommittees sometimes conflict, which further complicates the administrative framework of SACCOs (Alecia et al., 2013; Miriti, 2014; Mumanyi, 2014).

Fourth, the SACCO movement in Kenya is one of the largest in Africa (Wambua, 2017), with over five million members (WOCCU, 2014) and over US$4.2 billion in outstanding loans (WOCCU, 2014). Total savings are over 3.2 billion, which translates to about 31% of the national savings (Wambua, 2017). This shows that SACCOs are yet to reach many of those who are financially excluded by the formal financial system in Kenya (Bwana & Mwakujonga, 2013; Johnson & Nino-Zarazua, 2011; Kereta, 2007; Plyler, Haas, & Ngarajan, 2010; Turtiainen, 2008; Wanyama, Delvetere & Pollet, 2009).

Fifth, a number of social, economic and political factors have soured the operational environment for SACCOs in Kenya, such as the financial crisis contagion, which refers to a situation where shocks in one economy affect other economies as well (Allen, 2012; Baur, 2012). The US financial crises of 2007, for example, resulted in the vulnerability of economies in sub-Saharan countries including Kenya, negatively affecting business (Berman & Martin, 2012).

Socio-political instability in Kenya during the period under study also negatively affected SACCOs, when the impact of the post-election violence in 2008 was felt across the entire economy. During the violence, tribes turned against other tribes, while neighbours turned against each other (Mueller, 2011). The violence led to over 1,000 people being killed, mass displacement and the wanton destruction of property. During this period, all businesses were affected adversely, including SACCOs (Mueller, 2011). The terrorist attacks on Kenyan soil, instigated by the Al-

Shabaab terror group, further compounded the level of instability in Kenya (Lind et al., 2015; Vilkko, 2011). Kenya's military action in Somalia in 2011 was meant to create a buffer between Kenya and Somalia (Muhammad et al. 2013; Vilkko, 2011), but instead led to a number of attacks, including one on the Nairobi Westgate Shopping Mall in 2013, and most recently the Garissa University College attack in 2015 (Lind et al., 2015; Vilkko, 2011). These attacks have instilled fear in investors, adversely affecting SACCOs (Lind et al., 2015; Vilkko, 2011).

The banking "revolution", which was led by Equity Bank, the fastest growing bank in East Africa, is yet another factor that makes the current study unique. The bank targeted low income earners and began giving loans with relaxed collateral requirements, including accepting farm livestock and matrimonial beds as collateral. In its expansion programme, the bank has opened more branches across East Africa, including in Uganda, Rwanda, Tanzania and Southern Sudan, and has cross-listed its shares (Equity Bank, 2015). The exponential growth of Equity Bank has increased competition for SACCOs, particularly as other banks have followed suit, making it even harder for SACCOs to survive (Mumanyi, 2014). In this period there was also high volatility in interest rates and exchange rates (Kiganda, 2014; Ouma & Muriu, 2014).

Although the above factors affected all businesses adversely, SACCOs were most affected, especially by the post-election violence, because most are established at the local level where much of the political hostility was felt (Mumanyi, 2014).

For SACCOs to be in a position to carry out their mandate effectively, they need to be financially sustainable (Filene Research Institute, 2011; Paraveen, 2009; Pradhan, 2012). Financial sustainability is the ability of a financial institution to continuously provide financial services to their clientele (Abraham, 2003; Pradhan, 2012). According to Paraveen (2009), for an organisation to be financially sustainable, it needs to have efficient financial operations, make a profit, maintain adequate liquidity levels, and be able to overcome the challenges of bankruptcy.

Analysis of financial sustainability for SACCOs is paramount because it determines the ability of SACCOs to provide financial services in the foreseeable future, as well as make profits (Paraveen, 2009; Pradhan, 2012). This is particularly so as they assist the poor who are not accepted into the formal financial systems (Balkenhol, 2009; Kinde, 2012; Pradhan, 2012; Quayes, 2012), as they are considered to be risky options with low profitability. Furthermore, the costs of monitoring and assessing the credit worthiness of poor clientele is high compared to the profits derived (Balkenhol, 2009; Kinde, 2012; Pradhan, 2012; Quayes, 2012).

In order to analyse SACCOs' financial sustainability, it was important to first differentiate between the two types of financial sustainability: operational/substantial financial sustainability and financial self-sufficiency (Balkenhol, 2009; Kinde, 2012; Quayes, 2012). Operational or substantial financial sustainability is the ability to cover operational expenses from income generated, whether internally or externally, including subsidies, grants and soft loans. It is measured using either the pay-out ratio (POR) or operational efficiency ratio (OER) (Balkenhol, 2009; Bliss, Cheng, & Denis, 2015; Floyd & Skinner, 2014; Kinde, 2012; Nuhu, Musah, & Senyo, 2014; Nyamsogoro, 2010; Ongore & Kusa 2013; Paradi & Zhu 2013; Quayes, 2012; Rehman & Haruto, 2012; Saleemi 2008; McKillop, Ward, & Wilson, 2005; Vento, 2006). The POR indicates an organisation's ability to create wealth for its shareholders, while the OER indicates a firm's ability to continue raising regular income internally, which will be used to sustain future operational costs (McKillop et al., 2005; Ongore & Kusa 2013; Paradi & Zhu, 2013; Saleemi, 2008).

Financial self-sufficiency, on the other hand, indicates a MFI's ability to cover all operational and financial costs from its internally generated income, thus subsidies, grants and other externally generated incomes are excluded (Balkenhol, 2009; Kinde, 2012; Pradhan, 2012; Quayes, 2012). Financial self-sufficiency is measured using the financial self-sufficiency (FSS) ratio, which is a ratio of adjusted revenues (after adjusting for interest) to adjusted expenses (Kinde, 2012; Vento, 2006). A FSS ratio that is greater than one indicates that the organisation is financially sustainable, while a ratio of less than one indicates that the organisation is not financially sustainable (Kinde, 2012; Vento, 2006). A FSS ratio is a good measure of financial

sustainability, because it indicates sustainability of the main revenue sources generated by an organisation and the ability to meet the expenses incurred (Kinde, 2012; Manos & Yaron, 2009; Quayes, 2012; Vento, 2006). Since a FSS ratio excludes externally generated income like grants and subsidies, which are not guaranteed (Cull & Morduch, 2007; Oh, 2001), it was the only measure of financial sustainability considered in this thesis. Kinde (2012), Manos and Yaron (2009), Quayes (2012) and Vento (2006) only considered the FSS ratio in their research for the reason cited. SACCOs in Kenya rely on internally generated incomes, but do get subsidies from the government in the form of tax concessions. Incomes generated from mutual transactions that involve members *inter se* are not taxable, while only 50% of a SACCO's income is subjected to corporation tax of 30% (Saleemi, 2010).

Extant literature shows that the financial sustainability of SACCOs in Kenya is influenced by several factors (Karanja, 2013; Mudibo, 2005; Njuguna, 2012; Warue, 2012), i.e. financial outreach, financial regulation, SACCOs' governance, SACCOs' size and SACCOs' age. Other factors that may have had influence on SACCOs include financial crisis contagions, socio-political instability and macro-economic variables (Allen, 2012; Baur, 2012; Kiganda, 2014; Lind, Mutahi, & Oosterom, 2015; Muhammad, D'Souza, & Amponsah, 2013).

1.3 Research problem

Extant empirical literature reviewed suggests that there are several research gaps regarding the financial sustainability of SACCOs and its determinants. These research gaps relate to the financial sustainability model, the influence of financial outreach, financial regulation, corporate governance, size and age on financial sustainability. Each of these gaps is discussed in turn.

First, according to the SASRA (2012), out of all the SACCOs in Kenya, only about 72% are considered active. There is thus a large number of SACCOs (28%) that, although registered, are not operational. A lack of financial sustainability is the main reason for this trend (SASRA, 2012). Although past studies on individual factors affecting financial sustainability have been documented (Karanja, 2013; Mudibo,

2005; Njuguna, 2012; Warue, 2012), they have concentrated on SACCOs offering front office services activities (FOSA). To the best of the author's knowledge, no studies have been undertaken on individual factors that influence financial sustainability for both back office services activities (BOSA) and FOSA SACCOs, which differ in terms of financial outreach, age and size. It is thus important to consider both categories of SACCOs.

Second, a model that combines such factors to determine their influence on financial sustainability has not been developed, and a generalised least squares (GLS) analysis technique of panel data has not been applied for SACCOs in Kenya. The present study thus determines the financial sustainability factors of SACCOs and combines those factors that determine the financial sustainability status for SACCOs while applying GLS technique.

Third, extant literature on factors that influence the financial sustainability of SACCOs in Kenya show mixed and contradictory results. The relationship between financial outreach, financial regulation, corporate governance, size and age is therefore not conclusive. This is demonstrated in Chapter three where the mixed findings from different studies are documented. This study aimed to fill this research gap by looking at the individual factors that influence the financial sustainability of both BOSA and FOSA SACCOs in Kenya.

Fourth, although corporate governance has attracted much attention in the recent past, the focus has not shifted to SACCOs' corporate governance, despite the fact that how SACCOs are governed is important to achieving financial sustainability (Hassan, 2012; Mudibo, 2005; Spear, 2004). An emphasis on board size, board independence and audit committees as measures of corporate governance has been directed at companies but not SACCOs (Adams & Mehran, 2012; Andreou et al., 2014; Giroud & Mueller, 2010; Mashayekhi & Bazaz, 2008; Reddy, Locke, & Scrimgeour, 2010; Rose & Munch-Madsen, 2013). The present study attempted to bridge the above stated gaps, firstly by focusing on corporate governance amongst SACCOs in Kenya, and secondly, by using board size, independence and audit committees to measure corporate governance.

Fifth, to the best of the author's knowledge, no studies on the determinants of the financial sustainability of SACCOS in Kenya were undertaken for a period of seven years (2008 to 2014). This time period was considered important as it was post the SACCO Act, the financial crisis contagion, the post-election violence in Kenya, the banking revolution period, and the macroeconomic variable changes period. The current study fills the gap by assessing the financial sustainability of SACCOS in Kenya after the occurrence of the issues mentioned above.

Finally, the FSS ratio used in this study was based on the money measurement concept of accounting. In this concept, all items in accounting are measured in monetary terms (Saleemi, 2007; Wood & Sangter, 1999). In the current study, both monetary (financial outreach as measured by total deposits and SACCOs' size) and non-monetary (financial outreach as measured by the number of members, financial regulations, corporate governance and SACCOs' age) variables were incorporated to determine their influence on FSS. The intention here was to try to understand the dynamics of financial sustainability from the two perspectives. This was achieved by combining profitability theory, public interest theory, agency theory, life cycle theory, institutionalist theory and growth of the firm theory in the theoretical model hence contribution to theory of financial sustainability. These theories are expounded on in Chapter Two.

1.4 Research objectives

The general objective of this study was to investigate the factors that influence the financial sustainability of SACCOS in Kenya by establishing the determinants of their financial sustainability.

The study had the following specific objectives:

1) To determine the influence of financial outreach on the financial sustainability of SACCOs.
2) To investigate the influence of financial regulations on the financial sustainability of SACCOs.

3) To investigate the influence of corporate governance on the financial sustainability of SACCOS.
4) To investigate the influence of size on the financial sustainability of SACCOs.
5) To investigate the influence of age on the financial sustainability of SACCOs.
6) To investigate the influence of the combined factors on the financial sustainability of SACCOs.

1.5 Research hypotheses

To achieve the objectives of this study, the following null and alternative hypotheses were formulated:

$H_0$1: Financial outreach exerts no influence on the financial sustainability of SACCOs.

$H_1$1 Financial outreach exerts an influence on the financial sustainability of SACCOs.

$H_0$2: Financial regulations exert no influence on the financial sustainability of SACCOs.

$H_1$2: A financial regulation exerts an influence on the financial sustainability of SACCOs.

$H_0$3: Corporate governance exerts no influence on the financial sustainability of SACCOs.

$H_1$3: Corporate governance exerts an influence on the financial sustainability of SACCOs.

$H_0$4: Size exerts no influence on the financial sustainability of SACCOs.

H_14: Size exerts an influence on the financial sustainability of SACCOs.

H_05: Age exerts no influence on the financial sustainability of SACCOs.

H_15: Age exerts an influence on the financial sustainability of SACCOs.

H_06: The combined factors exert no influence on the financial sustainability of SACCOs.

H_16: The combined factors exert an influence on the financial sustainability of SACCOs.

1.6 Scope of the study

The study focused on registered SACCOs in Kenya in or before 2007. As the policies issued to SACCOs in Kenya are universal, the study area selected was the Mount Kenya region, which has 61% of the total SACCOs in Kenya (SASRA, 2010). Being the post SACCO Act of 2008 period, the influence of financial regulations was studied. Further, since financial sustainability entails the provision of financial services over time, longitudinal data for a period of seven years were collected and analysed using GLS. The time period focus for this study was from 2008 to 2014, which was considered appropriate for the GLS technique.

1.7 Research assumptions

Several assumptions were made in this study, the first of which was that the goal of all SACCOs in Kenya is to achieve financial sustainability, and not just to offer financial services to their members. Secondly, SACCO managers were assumed to be familiar with the provisions of the Cooperative Societies Act of 2004, the SACCO Act of 2008, the SACCO rules and regulations of 2010, as well as the operations of SACCOs, as they played a pivotal role in providing the primary data required for the regulation variable, which to a large extent examined the legal provisions. Third, the

financial crisis contagion, socio-political instability and the macro economic conditions existing in Kenya during the period of the study were assumed to affect the financial sustainability of SACCOs in the same way, and therefore they were not included in the analysis.

1.8 Justification for the study

With approximately 28% of the total registered SACCOs not being operational, the researcher was motivated by the desire to determine the influence of the hypothesised factors, individually and simultaneously, on the financial sustainability of SACCOs. SACCOs have become a major policy tool for promoting financial access, eradicating poverty, and developing the financial system, and they also play a pivotal role in developing efficient markets (Cooperative Bank, 2008). Although SACCOs play a major role in the economy of Kenya, some are facing financial sustainability challenges, while others are excelling (SASRA, 2012).

It is important to analyse the financial sustainability status of SACCOs over time, taking into account the many challenges they face in Kenya, especially after the global financial crisis contagion, post-election violence of 2008, Al-Shabaab terrorist attacks and the banking revolution, which affected SACCOs adversely. This research is therefore timely, as it establishes the long-term influence of some factors on the financial sustainability of the SACCOs post the major economic threats of 2007. To the best of the researcher's knowledge, this is the only study that has utilised a multi-level technique to determine what factors influence the financial sustainability of SACCOs in Kenya. The results of this study will thus provide insights into how to aid some of the ailing SACCOs in Kenya and ameliorate the existing situation.

1.9 Operationalisation of study variables

This section clarifies and operationalises the variables included in the conceptual model in Chapter Three.

1.9.1 Financial sustainability

According to Paraveen (2009), for an organisation to be financially sustainable, it needs to have efficient financial operations, make profits, maintain adequate liquidity levels, and be able to overcome the challenges of bankruptcy. Financial sustainability in this study is measured by a FSS ratio, which is the ability of a SACCO to cover all operational and financial costs from its internally generated income (Balkenhol, 2009; Kinde, 2012; Pradhan, 2012; Quayes, 2012).

1.9.2 Financial outreach

Financial outreach is defined as the provision of financial services to people who are considered to be the poorest of the poor, and who are excluded from the formal banking system (Babandi, 2011; Zaki, Jovanovi & Stamatovi, 2008; Zerai & Rani, 2012). Breadth of outreach, which is considered in this study, refers to the number of people the SACCOs have extended credit to (Quayes, 2012; Zerai & Rani, 2012), and is measured using SACCO deposits which represent the total savings by members and the number of members registered by a SACCO (Nyamsogoro, 2010; Okumu, 2007; Quayes, 2012; Zerai & Rani, 2012).

1.9.3 Financial regulation

Financial regulation refers to the rules and norms adopted in the control and operations of financial institutions (Chiumya, 2006; Hantke-Domas, 2003), which are derived from the constitution, legislation, ministerial policies or referendums (Coglianese, 2012). In this study, financial regulation was measured using the provisions of SACCO Act of 2008 and the SACCO regulations of 2010.

1.9.4 Corporate governance

Corporate governance is defined as a system in which an organisation is directed and controlled in order to make it more accountable to the stakeholders (Hassan, 2012; Mudibo, 2005; Spear, 2004). It represents the way in which the power of an

organisation is exercised in the management of its assets and other resources so as to satisfy the needs of all the stakeholders (Mudibo, 2005). Corporate governance can be measured using three components, namely board size, board independence and audit committee (Adams & Mehran, 2012; Andreou et al., 2014), all of which were used in this study. Board size represents the number of members on a BOD; board independence is measured using the number of independent/non-executive directors of a board, while an audit committee is the number of audit committee members of a SACCO.

1.9.5 Size

Firm size commonly refers to a change in a firm's total assets and incomes, such that an increase in the two measures represents growth in firm size and vice versa (Pagano & Schivardi 2003; Stimpert & Laux, 2011). Total assets and total income are the most commonly used measures of firm size (Almajali et al., 2012; Beck et al., 2008; Ghafoorifard et al., 2014; Goddard et al., 2002; Nur'ainy et al., 2013; Orlitzky, 2001; Pagano & Schivardi 2003; Stimpert & Laux, 2011; Xu & Banchuenvijit, 2012). In this study, total assets were represented by what is owned by a SACCO, either current or non-current, expressed in Kenya shillings, while total income is all the revenue received by a SACCO, expressed in Kenya shillings.

1.9.6 Age

A firm's age is defined as the period a firm has been in operation from the time it was incorporated (Almajali, 2012; Anderson & Eshima, 2013; Coad et al., 2013; Loderer & Waelchli, 2009). A firm's age is measured by counting the number of years the firm has been in existence since its formation (Almajali, 2012; Anderson & Eshima, 2013; Loderer & Waelchli, 2009). In this study, the age of a SACCO was measured by determining the number of years it had been in operation from the date of incorporation.

1.10 Thesis outline

The rest of the thesis is organised as follows: in Chapter Two the theoretical framework of the study is outlined, while in Chapter Three, the existing literature on SACCOs on each of the factors is reviewed and a discussion on how the factors influence financial sustainability, both individually and simultaneously, is included. This is followed by an outline of the research methodology used in Chapter Four. The findings of the study results are presented in Chapter Five, while Chapter Six provides a discussion of the findings. Finally, in Chapter Seven, the conclusions and recommendations from the study are presented.

Chapter 2: Theoretical Framework

2.1 Introduction

In this chapter, a review of theories that guide the dependent variable (financial sustainability) are discussed in depth.

A theory is a set of interrelated concepts, definitions and propositions that represent phenomena by specifying the relationship among variables in order to explain or predict a phenomenon (Walliman, 2009).

2.2 Profitability theory

Profitability theory is one of the theories that underpin the current study. It explains the financial sustainability of SACCOs, as a profitable SACCO is also considered to be financially sustainable (Paraveen, 2009). The FSS ratio adopted for this study was based on profitability theory; a SACCO with a FSS ratio of one or more is considered profitable and therefore financially sustainable (Kinde, 2012; Vento, 2006).

Two perspectives can be used to understand the profitability of an organisation – accounting profit and economic profit. Accounting profit, which was used in this study, is the difference between an organisation's revenue and its expenses (Peasnell, 1982; Saleemi, 2008; Wood & Sangster, 1999), therefore incomes and expenses are the two determinants of accounting profit (Wood & Sangter, 1999). An income is the increase in economic benefits in the form of inflows, an enhancement of assets or a decrease in liabilities, which results in an increase in equity. Contributions made by the owners are excluded from this definition of income, however (Gruening, 2006). According to International Accounting Standard (IAS) 18 (Revenue recognition), revenue is the gross inflow of economic benefits during the period arising in the course of the ordinary activities of an enterprise, when inflows result in an increase in equity other than contributions from equity participants (International Accounting Standard Committee (IASC), 1993).

Income for SACCOs includes interest charged on loans issued to members, registration or membership fees charged to new members, investment income in the form of dividends, and interest and rental income from rental properties (Bhagat & Jefferis, 2002; Saleemi, 2008; Wood & Sangster; 1999). To increase profits, incomes are increased or expenses are reduced (Wood & Sangter, 1999).

According to Greuning (2006), an expense is a decrease in economic benefits in the form of outflows, or an increase in liabilities which results in a decrease in equity. A decrease in equity resulting from distribution to the owners is not considered an expense (Wood & Sangster; 1999). An expense is any cost incurred for the purpose of raising income (Saleemi, 2007). IASC (1993) defined an expense as including losses as well as any other costs incurred in the ordinary activities of an enterprise. Expenses take the form of outflows or the depletion of assets, for example the depreciation of fixed assets (IASC, 1993). SACCO expenses include operating expenses, administration expenses and financial expenses (Gruening, 2006). Operating expenses include management expenses, audit fees, transaction costs by banks and loan write offs. Administration expenses include, among others, wages and salaries paid to staff, transport costs, training of members and AGM expenses (Wood & Sangster; 1999). Financial expenses, on the other hand, are represented by the cost of capital, which is the amount paid to the providers of capital in the form of dividends to shareholders and interest on loans (Wood & Sangster; 1999).

Economic profit represents what the organisation will distribute during a given period, such that it remains with the same amount it had at the beginning of the period. Profit includes unrealised profits or losses on assets and liabilities as determined by market forces. From an economic point of view, the terms profit, income and earnings are considered synonymous. When computing profit, economists include opportunity costs that could either be implicit or explicit; however accountants do not include opportunity costs when computing accounting profits (Fisher & McGowan, 1983; Leitch & Tanner, 1991).

In the current study, accounting profit-related measures were applied to calculate the financial sustainability of SACCOs, as size measurement variables (total assets and

total income) also used accounting related measures. Financial outreach was also measured using accounting-related parameters of total deposits and number of members. Accounting profit is considered to be more appropriate for long-term studies (Saleemi, 2008; Wood & Sangster, 1999), though it is affected by the use of accounting concepts, principles and conventions. For example, the accounting profit of an organisation can be affected by changing the accounting principles, like the method of stock valuation from a first-in first-out basis to a last-in first-out basis, and vice versa (Bhagat & Jefferis, 2002; Saleemi, 2008; Wood & Sangster, 1999).

2.3 Public interest theory

According to the underlying concept of public interest theory, the interests of the public are protected from business failure through government oversight. This is done by reducing the chance of market failure by putting forward a regulatory framework to achieve a set of regulatory objectives that reduce the chances of market failure. The government thus ensures that no unchecked activity within the financial system takes place. This type of regulation ensures efficient capital allocation in all sectors of the economy, with a financial system that encourages saving, and ensures capital accumulation and the monitoring and evaluation of managers (Chiumya, 2006). The theory, therefore, calls for the creation of regulatory bodies for SACCOs, including SASRA. The public interest theory assumes that by correcting market failures, efficiency is achieved and there is no cost of financial regulation (Hantke-Domas, 2003; Parker & Kirkpatrick, 2012). Further, where individuals are not earning acceptable incomes, the government must intervene. For example, socially unacceptable incomes may be derived from healthcare and education, where individuals take advantage of the prevailing situation to make unjustifiable profits. In such situations, the imposition of regulations should be immediate (Parker & Kirkpatrick, 2012).

The present study relies on the public interest theory because firstly, the financial regulation of SACCOs in Kenya aims to protect the interests of the public in general, as well as the SACCO members, and secondly, financial regulation strives to reduce the chances of SACCO failure by correcting market failure. The public interest theory

best explains financial sustainability (Hantke-Domas, 2003; Parker and Kirkpatrick, 2012), and the current regulatory bodies in Kenya, including SASRA, also motivated the choice of this theory

2.4 Agency theory

This theory is concerned with aligning the interests of the members (principals/shareholders) and managers (agents), and prescribes formal relationships such as the salary scales of managers and the existence of a board of directors (Amess & Howcroft, 2001). SACCO members, who are the owners, delegate the management and the running of the SACCO to managers, who are expected to act and make decisions that are beneficial to the owners (Odera, 2012). However, in some cases, the managers may seek to make decisions which benefit them at the expense of the owners, resulting in agency conflict (Abdullah & Valentine, 2009). To ensure shareholder protection, owners need to incentivise managers and incur agency costs to maximise the firm's value and to better utilise the available resources to make profit (Caprio & Levine, 2002). Where there is no or minimal agency conflict, financial sustainability is likely to be achieved (Amess & Howcroft, 2001; Caprio & Levine, 2002).

2.5 Life cycle theory

The SACCO age variable is supported by the life cycle of the firm theory, as it postulates that firms have a life cycle similar to that of living organisms (Penrose, 1952). The theory classifies firms into the birth or introduction stage, youth or survival, maturity and decline (Aharony, Falk, & Yehuda 2006; Ahmed & Javid, 2009; Frielinghaus, Mostert, & Firer, 2005; Jenkins, Kane, & Velury, 2004; Penrose, 1952; Takhtaei, 2014). In each of the above stages, a firm exhibits different characteristics (Aharony et al., 2006; Ahmed & Javid, 2009; Frielinghaus et al., 2005; Jenkins et al., 2004; Penrose, 1952, Takhtaei, 2014). *Ceteris paribus*, a firm is in a given stage of the life cycle based on its age expressed in years. The life cycle of a firm theory is used in this study to explain financial sustainability. It shows the growth in profits and financial sustainability as a firm ages, and later a reduction in profits and financial

sustainability during the decline stage (Ayayi & Sene, 2010; Barron, West & Hannan, 2015; Coad et al., 2013; Gaur & Gupta, 2011; Hui, Radzi, Jenatabadi, Abu Kasim, & Radu 2013; Huynh & Petrunia, 2010; Rose, Abdullah, & Uli , 2010; Takhtaei, 2014).

2.6 Institutionalist theory

According to this theory, financial sustainability is achieved by enhancing financial deepening, which is the creation of financially sustainable SACCOs that are able to provide financial services to the poor in the long run. SACCOs are encouraged to generate income internally to cover costs incurred, as donor funding and other externally generated funds are not certain (Beck, 2015; Brau & Woller, 2004; Wu, et al., 2012). The theory seeks to create financially self-sufficient SACCOs to offer financial services to those excluded by the formal financial sector (Beck, 2015; Brau & Woller, 2004; Wu et al., 2012).

2.7 The growth of the firm theory

According to the growth of the firm theory, firm growth in size involves matching resources with opportunities for the purpose of value creation (Hite & Hesterly, 2001; Lloyd, 1961; Penrose, 1995; Rajan, Servaes, & Zingales, 2000; Wernerfelt, 1984). The theory describes the manner and speed of the growth of a firm in a given existing environment. Firm growth in size is related to required capacity to respond to the changing opportunities (Hite & Hesterly, 2001; Lloyd, 1961; Penrose, 1995; Rajan et al., 2000; Wernerfelt, 1984). This theory explains why firms grow in size, the type of growth, and the factors contributing to the growth (Rajan et al., 2000). The theory suggests that there are limits to a firm's rate of growth, but there is no optimal firm size. However, at a certain point, big firms will experience a reduction in their rate of growth due to the existence of diseconomies of scale (Penrose, 1995).

The growth of the firm theory links with financial sustainability, as a firm that is growing in size is also taken to be financially sustainable *ceteris paribus* (Hite & Hesterly, 2001; Lloyd, 1961; Penrose, 1995; Rajan et al., 2000; Wernerfelt, 1984).

In summary, the study relied on six theories which underpinned the theoretical framework. The combination of these theories developed the theoretical contribution of the study which is discussed in Chapter seven. These theories were later linked with the findings of the study as discussed in Chapter five.

In the following chapter, a review of empirical literature is presented.

Chapter 3: Empirical Literature

3.1 Introduction

In this chapter, a review of empirical literature is presented. The review is focused on the independent variables under study, and outlines the findings of previous studies on the subject matter.

3.2 Financial outreach

The focus of this section is on financial outreach and how it impacts the financial sustainability of SACCOs. Financial outreach is defined, the ideal conditions for achieving financial outreach are analysed, and a discussion of the factors hindering the financial outreach of SACCOs in Kenya is also presented. The section then looks at the relationship between financial outreach and financial self-sufficiency.

Related studies have been conducted in Kenya on financial outreach, including those of Copestake (2007), Owen (2007), and Woller and Schreiner (2002). Contradictions and biases from these studies and other studies from different parts of the world are discussed here. The actual relationship that exists between financial outreach and financial sustainability is therefore not conclusive. The purpose of this section is to delineate the relationship between financial outreach and the financial sustainability of SACCOs in Kenya.

3.2.1 Definition of financial outreach

Financial outreach was defined by Zaki, Jovanovi and Stamatovi (2008) as the provision of financial services to people who are considered to be the poorest of the poor, and who are excluded from the formal banking system. The goal of financial outreach is to provide high quality financial services to the poor, including receiving deposits, issuing loans, and providing social benefits, with the goal of improving the well-being of the poor (Babandi, 2011; Zerai & Rani, 2012).

Financial outreach is classified into two categories: depth of outreach and breadth of outreach (Mori et al., 2015; Louis et al., 2013; Nurmakhanova et al., 2015; Nyamsogoro 2010; Okumu, 2007; Olivares-Polanco, 2005; Paxton, 2002; Quayes, 2012; Wale, 2009; Zerai & Rani 2012). As discussed in Chapter Two, the focus of this research is on breadth of outreach, which refers to the number of people the MFIs have extended credit to (Quayes, 2012; Zerai & Rani, 2012), and has been measured using SACCO deposits and numbers of members (Nyamsogoro, 2010; Okumu, 2007; Quayes, 2012; Zerai & Rani, 2012).

3.2.2 Breadth of outreach

As stated above, SACCO deposits and numbers of members have been used to measure the breadth of financial outreach. The number of members indicates the popularity of a SACCO, and is also considered a measure of its growth (Bwana & Mwakujonga, 2013; Johnson & Nino-Zarazua, 2011; Kereta, 2007; Plyler, Haas, & Ngarajan, 2010, Turtiainen, 2008; Wanyama, Delvetere & Pollet, 2009). C*eteris paribus,* more members will result in high loan balances, which will translate into more interest income received by the SACCO, thus maintaining financial self-sufficiency. Growth in the capital of a SACCO will also result in more savings being deposited, thus the more members, the higher the level of financial outreach (Bwana & Mwakujonga, 2013; Johnson & Nino-Zarazua, 2011; Kereta, 2007; Plyler et al., 2010; Turtiainen, 2008; Wanyama et al., 2009).

Deposits represent the amount of savings achieved by members of a SACCO (Bwana & Mwakujonga, 2013; Johnson & Nino-Zarazua, 2007; Turtiainen, 2008). According to Lafourcade, Isern, Mwangi and Brown (2005), African cooperatives try to raise as many deposits as possible from their members. This is done in most cases by ensuring that all members make savings on a monthly basis. The more deposits a SACCO is able to receive in a given period, the more it is able to issue loans to its members. This increases income earned from interest, which in turn makes a SACCO more financially sustainable, and also increases its level of financial outreach (Bwana & Mwakujonga, 2013; Johnson & Nino-Zarazua, 2007; Nyamsogoro, 2010; Turtiainen, 2008).

Table 1 shows the growth in the two measures of SACCOs in Kenya over a 10-year period. Both measures increased steadily over this period, with the number of members increasing by 124%, while deposits have increased by 125%. This shows that there has been positive growth in the breadth of financial outreach by Kenyan SACCOs over the last 10 years.

Table 1: Growth in the Measures of Breadth of Financial Outreach of SACCOs in Kenya

Year	Number of Members	Deposits/Savings (US Dollar)
2005	2,708,316	1,295,194,098
2006	3,265,545	1,608,009,012
2007	4,000,000	2,109,896,053
2008	3,682,272	2,669,620,502
2009	3,835,250	2,750,754,034
2010	3,918,490	2,794,431,047
2011	4,183,220	2,534,612,350
2012	4,722,126	2,972,704,029
2013	4,722,127	2,659,761,05
2014	5,103,231	3,266,230,227

Note. Reprinted from World Council of Credit Unions (WOCCU,2014)

3.2.3 Factors hindering the breadth of financial outreach of SACCOs

Past studies have outlined several factors that have hindered growth in financial outreach. The main factors are discussed here.

3.2.3.1 Competition from commercial banks

Commercial banks and SACCOs compete for the same customers (Alecia, Mule, Nyongesa, Aila, Momanyi, Ogutu, & Muchoki, 2013; Miriti, 2014; Mumanyi, 2014), thus commercial banks have adopted a liberal lending policy in order to entice customers who would otherwise turn to SACCOs for their financial needs (Mumanyi, 2014). Shorter loan repayment periods and delays in loan processing have made members seek alternative financing from commercial banks (Miriti, 2014). This

competition has reduced the financial outreach of SACCOs adversely, as they cannot recruit as many members as they would like. However, SACCO members have benefited from the competition since SACCOs have developed new products, reduced loan processing times, and increased loan repayment periods (Alecia et al., 2013; Miriti, 2014; Mumanyi, 2014).

Apart from the competition from commercial banks, SACCOs in Kenya have also faced serious competition from national funds such as the Women's Fund, the Youth Fund, county allocations and the Constituency Development Fund (Alecia et al., 2013; Miriti, 2014; Mumanyi, 2014), which provide credit at lower interest rates than the SACCOs (Mumanyi, 2014).

3.2.3.2 Politics

National politics have adversely affected the financial outreach of SACCOs in Kenya (Mumanyi, 2014), as SACCO members are divided along political zones in the country, hindering SACCO operations. For example, loan processing for some members is fast-tracked if they are deemed to be from the 'right' political zone, while the same is not done for perceived enemies due to political differences. Such practices discourage would-be members who are perceived to be enemies, which results in low SACCO membership and deposits (Bwana & Mwakujonga, 2013; Mumanyi, 2014; Osotimehin & Jegende, 2011).

3.2.3.3 Information technology

Commercial banks have invested heavily in information technology for efficiency and security of information, including mobile banking and Internet banking. In addition, customers have access to Automatic Teller Machines (Mumanyi, 2014). Most SACCOs are not automated, however, therefore their customers cannot access these services. Makori, Munene and Muturi (2013) found that only 10% of the SACCOs in Kenya have automated their services, and staff members have no formal training in information and communication technology (ICT), further compounding the

problem. Furthermore, some of the SACCO members lack information on SACCO products, interest rates and the requirements for lending (Mumanyi, 2014).

3.2.3.4 Poor management

According to Mumanyi (2014), management of SACCOs is characterised by corruption, nepotism and the employment of unskilled staff, which has led to ineffectiveness and inefficiency in service delivery, impacting negatively on SACCO members (Olando, Mbewa, & Jagongo, 2012). Most SACCOs are not able to retain skilled manpower due to the low salaries they pay, further complicating service delivery to their members (Mumanyi, 2014) and leading to some withdrawing their savings and leaving the SACCO (Olando et al., 2012). Olando et al. (2012) proposed that SACCOs should develop staff recruitment policies to solve these staffing problems.

Most SACCOs also have weak internal control systems (ICS), which results in a loss of funds, which worsens the already existing management problems (Mumanyi, 2014). Makori et al. (2013) stated that there is no distinction between the responsibilities of top SACCO management and their boards of directors, resulting in management conflict. Further, most SACCOs do not keep proper books of accounts and do not prepare the financial statements required by commercial banks for the disbursement of loans, thus discouraging potential members.

3.2.3.5 Bad debts and non-performing loans

SACCOs lack risk mitigation strategies to counter growing bad debts and non-performing loans, resulting in huge losses (Mumanyi, 2014). The improvement of credit policies by introducing stringent lending rules and enlisting credit reference bureaus would mitigate these losses, however (Olando et al., 2012). Non-remittance of funds by employers deducted from employees to SACCOs reduces SACCO membership and deposits further, negatively affecting financial outreach (Mumanyi, 2014). Bad and non-performing loans were found to adversely affect SACCO profits and by extension their financial sustainability (Makori et al., 2013). To mitigate losses

arising from bad debts, SACCOs should create sufficient provisions, and member deposits should be insured to protect them against a major loss in case of SACCO insolvency (Makori et al., 2013).

3.2.3.6 Operational costs

Increase in operational costs, which have been attributed to poor management (Mumanyi, 2014), hinder financial outreach for SACCOs. These increases also fuel decreases in deposits and the number of members, as financial sustainability is already threatened (Conning 1999; Hermes, Lensink, & Meesters, 2008; Navajas, Schreiner, Meyer, Gonzalez-Vega, & Rodriguez-Meza, 2000; Quayes, 2012; Woller & Schreiner, 2002; Zaigham & Asghar, 2011). Financial sustainability was affected adversely as a result (Hermes et al., 2008).

3.2.4 Empirical evidence on effect of financial outreach on financial sustainability

The impact of the breadth of financial outreach on financial sustainability shows contradictory results obtained from previous studies, which are discussed in this section.

3.2.4.1 Positive correlation

A positive correlation between financial outreach and financial sustainability means that SACCOs are able to provide financial services to the poor and at the same time remain financially sustainable. Various measures of financial outreach from previous studies have supported this concept, as demonstrated below.

3.2.4.1.1 Numbers of members

The number of SACCO members was found to be positively related to the financial sustainability of SACCOs in Kenya. This was observed in research by Cheruiyot et

al. (2012), who studied 30 SACCOs in Nairobi and used multiple linear regressions for analysis, as well as Cracknell (2012), who analysed 108 SACCOs offering FOSA in Kenya and applied the t-test technique for data analysis. An increase in the number of members led to an increase in financial sustainability since more income was collected, hence a positive relationship between financial outreach and financial sustainability was observed (Cheruiyot et al., 2012; Cracknell, 2012).

Similar findings were reported by Azar and Webster (2009) in a study of SACCOs in Mexico, Peru and the Philippines, Babandi (2011) who did a study on Islamic MFIs in Nigeria, Ouattara, Gonzalez-Vega and Graham (1999) who studied MFIs in West Africa, Hermes et al. (2008) on MFIs in 73 countries, Nyamsogoro (2010) in a study on SACCOs in Tanzania, Sebhatu (2011) who studied MFIs in Ethiopia, and Zerai and Rani (2012) who studied MFIs in India.

3.2.4.1.2 Deposits

Deposits were found to have a positive relationship on financial sustainability for SACCOS in Kenya, as per Akoten, Sawada and Otsuka (2006), who studied 167 micro and small enterprises including SACCOs in Kenya and applied multivariate probit analysis. Cheruiyot et al. (2012) found the same in their study of 30 SACCOs in Nairobi which used multiple linear regressions for analysis, as did Cracknell (2012) who analysed 108 SACCOs offering FOSA in Kenya and applied the t-test technique for data analysis. As deposits increase, more money is available for lending, hence there is an increase in income collected (Akoten et al. 2006; Cheruiyot et al., 2012; Cracknell, 2012). Other studies have yielded the same results on the relationship between members' deposits and financial sustainability (Azar & Webster, 2009; Babandi, 2011; Nyamsogoro, 2010; Ouattara et al., 1999; Sebhatu, 2011; Gonzalez-Vega & Graham, 1999).

3.2.4.2 Negative correlation

A negative correlation between financial outreach and financial sustainability indicates that SACCOs are able to offer financial services to the poor, but they

remain financially unsustainable. This is because the people targeted are poor and obtain loans only in small sizes since they have insufficient income to repay larger loans (Conning, 1999; Gatimu & Frederick, 2014; Hermes et al., 2008; Magali, 2013; Navajas et al., 2000; Quayes, 2012; Woller & Schreiner, 2002; Zaigham & Asghar, 2011). As a result, SACCOs are not able to generate sufficient funds to meet their ever-growing costs.

3.2.4.2.1 Number of members

The number of members was found to negatively correlate with the financial sustainability of SACCOs in Kenya (Gatimu & Frederick, 2014). Similar findings were reported by Conning (1999), Hermes et al. (2008), Magali (2013), Navajas et al. (2000), Quayes (2012), Woller and Schreiner (2002), and Zaigham and Asghar (2011), i.e. growth in the number of members did not result in financial sustainability. This was due to the fact that the costs of giving services to the increased number of members, i.e. operational costs, including administration costs and bad debts, resulted in a reduction in profits (Conning, 1999; Gatimu & Frederick, 2014; Hermes et al., 2008; Magali, 2013; Navajas et al., 2000; Quayes, 2012; Woller & Schreiner, 2002; Zaigham & Asghar, 2011).

3.2.4.2.2 Deposits

Findings from previous studies showed a negative relationship between SACCO deposits and financial self-sufficiency. An increase in deposits was mainly attributed to an increase in the number of members, which in turn resulted in an increase in operational costs and hence a reduction in profits. A drop in profits thus resulted in SACCOs not being financially self-sufficient (Hermes et al., 2008; Navajas et al., 2000; Zaigham & Asghar, 2011(Navajas et al., 2000).

3.2.5 Conclusion

From the above studies, financial outreach can be seen as a factor that can affect financial sustainability, although contradictions and biases in previous studies are

evident. Since the results from these studies are not conclusive, this study aims at delineating the relationship between SACCO financial outreach and financial sustainability, thereby determining the influence of financial outreach on the financial sustainability of SACCOs in Kenya.

3.3 Financial regulation

The purpose of the section is to delineate the relationship between financial regulation and the financial sustainability of the SACCOs in Kenya. Studies on SACCOs in Kenya by Kilonzi (2012), Makori et al. (2013), Nair and Kloeppinger-Todd (2007), Olando et al. (2012), Onchangwa, Ongoncho, Onchonga, and Njeri, (2013), Otieno, Okengo, Ojera, and Mamati (2013) and Wanyoike (2013), among others, showed contradictions and biases in the relationship between financial regulation and financial sustainability. The actual relationship between financial regulation and financial sustainability is therefore not conclusive. In this chapter, financial regulation is defined and forms of financial regulation are discussed. The relationship between financial regulation and financial sustainability is also examined.

3.3.1 Overview of financial regulation

Financial regulation refers to the rules and norms adopted in the control and operations of financial institutions (Chiumya, 2006; Hantke-Domas, 2003), which are derived from the constitution, legislation, ministerial policies or from the masses through referendums (Coglianese, 2012). Regulation involves the formation of a central body to come up with the best practices, rules of conduct and ethical standards for institutions to adhere to (Forker & Ward, 2012; Lattimore, Baskin, & Suzette, 2012; Llewellyn, 1999; Ndambu, 2011). The purpose of regulation is to ensure that financial activities are conducted as per the law, for the purpose of protecting all stakeholders (Llewellyn, 1999). Failure to comply with the set rules leads to penalties being imposed (Coglianese, 2012).

There are three forms of financial regulation: direct supervision, selective supervision and delegated supervision (Ademba 2010; Makori et al., 2013; Mudibo, 2005). Under

direct supervision, the government controls SACCOs. This form of supervision is advantageous because there is uniformity in control and any chance of regulatory arbitrage is eliminated, hence the method promotes member confidence. However, this form of supervision results in high costs being incurred by SACCOs as they endeavour to comply with the set rules (Ademba, 2010; Makori et al., 2013; Mudibo, 2005).

Selective supervision is normally applied to larger SACCOs, where a regulatory body, for example the Central Bank, imposes the regulation. The method is advantageous since the Central Bank's expertise is passed on to the SACCOs and fewer resources are required, however it is disadvantageous as it may result in regulation arbitrage, and is also discriminatory since different rules apply to different SACCOs. SACCO discrimination creates confusion when clients are deciding on which SACCO to join (Ademba, 2010; Makori et al., 2013; Mudibo, 2005).

In delegated supervision, supervisory powers are assigned to a regulatory body, which is normally a SACCO umbrella body. This form of supervision is advantageous as there is closer feedback between the SACCO and the regulator, the cost of the supervision is limited, and the regulator earns income for services provided. However, this form of regulation results in conflict since the supervisor also advocates for the SACCO, and a strong technical capacity is required. Both selective and delegated supervision are applied in Kenya, where large SACCOs offering front office service activity (FOSA) are supervised by SASRA, while the small ones mainly offering back office service activity are supervised by the Ministry of Industrialization (Ademba, 2010; Makori et al., 2013; Mudibo, 2005).

3.3.2 Financial regulation framework of SACCOs in Kenya

The framework of SACCO regulation in Kenya is entirely based on the public interest theory of financial regulation. As stated above, both direct supervision and delegated supervision methods are applicable in Kenya (Ademba, 2010; Makori et al., 2013; Mudibo, 2005). According to Makori et al. (2013), in Kenya, a SACCO must first be registered, then issues of financial risk management, liquidity and governance of the

SACCO are dealt with, before the establishment of a deposit guarantee system to safeguard the members' funds is put in place. SACCO financial regulation results in many benefits for both the institution and the members (Makori et al., 2013). In accordance with the public theory of financial regulations, several objectives are achieved through SACCO regulation, including protection of the members' funds, ensuring stability of the institutions' financial systems, ensuring solvency, enhancing financial sustainability, and thus providing better financial services to members coupled with the ability to attract new business (Llewellyn, 1999; Makori et al., 2013). Failure to comply with the set rules leads to penalties being imposed (Coglianese, 2012).

The Cooperative Societies Act of 2004 is the main Act that guides the formation and management of cooperatives in Kenya, while the SACCO Act of 2008 is the legislation that provides for the licensing, regulation, supervision and promotion of SACCOs by SASRA. This Act outlines the main steps to be followed in the licensing of a SACCO (Makori et al., 2013). The Republic of Kenya SACCO Act supplement of 2010 further stipulates the regulatory framework of SACCOS in Kenya.

A number of financial regulation provisions are contained in the above-mentioned laws. These provisions are stipulated and cater for: 1) SACCO licensing –SACCOs pay the requisite fees; 2) capital adequacy – every SACCO must have core capital of at least Kenya Shillings (KES) 10 million, which should not be less than 10% of the total assets and at least 8% of the total deposits; 3) liquidity provisions – 15% of the deposits received should be maintained in liquid form (SASRA, 2010); 4) a credit management policy as stipulated by SASRA; 5) the classification of bad debts and non-performing loans; 6) a fund investments policy; and 7) a financial disclosure policy. These provisions are in line with the public interest theory of financial regulation, since they ensure protection of the members' interests and preservation of SACCOs into the foreseeable future. Adherence to these provisions ensures that SACCOs achieve financial sustainability status (Llewellyn, 1999; Makori et al., 2013).

According to Ademba (2010), financial regulation has resulted in the integration of the SACCO industry into the formal financial system, which has enhanced investor

confidence. Through regulation, competition is encouraged while unethical business practices are removed and new business opportunities are created, shifting the focus towards institutional development and away from the development of individual members (Ademba, 2010; Blinder, 2010).

3.3.3 Challenges facing SACCO financial regulation

SACCOs in Kenya are facing various challenges in their endeavour to comply with the financial regulation provisions (Ademba, 2010; Alukwe, Ngugi, Ogollah, & Orwa, 2015; Hannig & Katimbo-Mugwanya, 2000; Mudibo, 2005; Ngugi & Afande, 2015). First, SACCOs are unable to meet regulatory requirements like capital adequacy and liquidity provisions due to a lack of finances. The removal of restrictive requirements by the government may therefore have a positive impact on SACCOs (Makori et al., 2013).

Furthermore, SACCOs are facing compliance challenges involving financial disclosure requirements, fund investments, licensing requirements, savings and deposits provisions, bad debts and non-performing loans provisions and share provisions, due to a lack of necessary capacity (Ademba, 2010; Alukwe et al., 2015; Hannig & Katimbo-Mugwanya, 2000; Mudibo, 2005; Ngugi & Afande, 2015). The suggested solution for this challenge is that the formulation of a regulatory framework should involve all the stakeholders to ensure full adoption of the set regulations. Capacity building in the areas of human resource and financial management for SACCOs could help ease the pressure (Ademba, 2010; Makori et al., 2013).

Political interference is another challenge caused by the segregated political landscape in Kenya, which could be solved by detaching SACCOs from politics (Alukwe et al., 2015; Hannig & Katimbo-Mugwanya, 2000; Mudibo, 2005; Ngugi & Afande, 2015).

SACCOs have also employed low skilled managers and staff who may not interpret and implement the set legal provisions as required (Ademba, 2010; Makori et al., 2013). Unfortunately, the employment of such staff is necessitated by the low

remuneration that characterises this sector (Ademba, 2010; Makori et al., 2013). A possible solution to this challenge is enhancing the profitability of SACCOs by raising more income. As a result, financial sustainability will also be achieved, thereby enabling SACCOs to pay fair salaries and, in turn, attract high calibre staff (Ademba, 2010; Makori et al., 2013).

Finally, SACCOs in Kenya face challenges in trying to comply with the regulatory provisions discussed above (Makori et al., 2013; Kilonzi, 2012; Olando et al., 2012). Most SACCOs lack the capacity to comply in terms of resources and manpower, and the very high cost of compliance and harsh conditions stipulated have hindered new entrants to the industry (Makori et al., 2013; Kilonzi, 2012; Olando et al., 2012).

3.3.4 Empirical evidence on financial regulation

Other studies have found that the impact of financial regulation on financial sustainability has contradictory results. Findings from different studies conducted are discussed below.

3.3.4.1 Positive relationship

A positive relationship between financial regulation and financial sustainability implies that firms are financially sustainable due to the existence of financial regulation. Various studies have supported this view.

A positive influence was reported in research by Onchangwa et al. (2013), who studied SACCOs in Kenya and used descriptive statistics for analysis. In addition, Otieno et al. (2013) conducted a study of 50 SACCOs in Nakuru, Kenya, and used Spearman's rank correlation in analysis, while Wanyoike (2013) studied 34 SACCOs offering FOSA in Kenya and analysed data using multiple linear regression. The positive influence came about due to cohesion in the financial system, adherence to good business practices, minimised unethical practices like money laundering and fraud, and above all, protection of members' interests (Onchangwa et al., 2013; Otieno et al., 2013).

Studies in other parts of the world also reported a positive influence, including a study by Lafourcade et al. (2005), who researched 163 MFIs in sub-Saharan Africa; Baker (2008), Davis and Brockie (2001) and Ryder (2003) who studied CUs in the United Kingdom (UK), and Goddard and Wilson (2005) who studied CUs in the United States of America (USA). Stronger enforcement of the rules and regulations can thus result in better financial performance, and by extension, financial sustainability (Gelauff & Lejour, 2006; Gørgens & Paldam, 2003; Jacobzone, Steiner, Ponton, & Job, 2010; Jalilian, Kirkpatrick, & Parker, 2007; Jazayeri, 2000).

3.3.4.2 Negative relationship

A negative relationship between financial regulation and financial sustainability means that SACCOs are not financially sustainable due to the existence of financial regulation. Various studies have supported this view as discussed below.

The negative influence of financial regulation on the financial sustainability of SACCOs in Kenya was demonstrated in research by Makori et al. (2013) in a study of five SACCOs in Kisii and Nyamira, where descriptive statistics were used; Olando et al. (2012), who studied 44 SACCOs in Meru and used the linear regression technique for data analysis; and Kilonzi (2012), who studied 98 SACCOs offering FOSA and analysed data using linear regression. This negative influence was caused by a lack of capacity to implement the regulations, especially by small SACCOs, the high cost of compliance and the prevention of new entrants due to harsh set conditions (Makori et al., 2013; Olando et al., 2012; Kilonzi, 2012).

Similar findings were reported by Cornelius (2009) and Turner (1996) on a study of CUs in the UK; Glass, McKillop, and Rasaratnam (2010) and Forker and Ward (2012) who studied CUs in Ireland; Parker and Kirkpatrick (2012) who measured regulatory performance in Organisation for Economic Cooperation and Development (OECD) countries; and Goddard and Wilson (2005) and Pathak and Kumar (2008) who studied CUs in the USA. Similarly, financial regulation was found to lower the rate of adopting ICT and other innovations (Djankov & Ramalho, 2006; Loayza et al., 2004; Klapper et al., 2006; AGPC, 2006).

3.3.4.3 No relationship

No relationship between financial regulation and financial sustainability implies that the existence of financial regulation has no significant influence on financial sustainability.

According to Cull et al. (2011), MFIs operating under stringent financial regulations are not less profitable compared to those under less stringent regulations or no regulations. This is despite the fact that there are very high costs associated with financial regulation. Ndambu (2011) studied 192 MFIs and also found that regulation does not have an effect on financial sustainability for SACCOs in sub-Saharan Africa; operational self-sufficiency, return on assets (ROA) and return on equity were found not to be statistically different for regulated and unregulated SACCOs. Further, Hartaska and Nadolnyak (2007) analysed data from 114 MFIs from 62 countries, and found that regulatory frameworks do not affect financial self- sufficiency.

3.3.5 Conclusion

From the above studies, financial regulation can be seen as one of the factors that has an effect on financial self-sufficiency. Contradictions and inconclusive results from previous studies on the effect of financial regulation on financial sustainability have been highlighted. The main goal of the present study is to delineate the relationship between SACCO financial regulation and financial sustainability, and thereby determine the influence of financial regulation on the financial sustainability of SACCOs in Kenya.

3.4 Corporate governance

This section focuses on corporate governance in SACCOs. The purpose of the chapter is to delineate the relationship between SACCO governance and the financial sustainability of SACCOs. Studies on SACCOs in Kenya by Otieno et al. (2015), Muriuki and Ragui (2013), Chenuos, Mohamed, and Bitok (2014), Otieno, Oluoch, and Wen (2010) and Wanjau (2007), among others, showed contradictions

and biases in the relationship between governance in SACCOs and financial self-sufficiency. The relationship that exists between the two is therefore not conclusive. In this section corporate governance is defined and the pillars of corporate governance and governance challenges faced by SACCOs are discussed. Finally, the study examines the empirical evidence on the relationship between SACCOs' governance and financial sustainability of SACCOs in Kenya.

3.4.1 The concept of corporate governance

Corporate governance is defined as a system in which an organisation is directed and controlled in order to make it more accountable to stakeholders (Hassan, 2012; Mudibo, 2005; Spear, 2004); it represents the way in which the power of an organisation is exercised in the management of its assets and other resources so as to satisfy the needs of all the stakeholders (Mudibo, 2005). Corporate governance enhances the efficiency of an organisation, resulting in the shaping of its economic performance and financial sustainability (Caprio & Levine, 2002). According to Nur'ainy, Nurcahyo, and Sugiharti (2013), good corporate governance (GCG) involves putting up mechanisms such as checks and balances to protect stakeholders from the actions of unscrupulous managers who could expropriate the assets of an organisation. The mechanisms are also put in place to reduce and resolve conflicts among the many stakeholders (Daily & Dalton, 2003). For any organisation, the main objective of corporate governance is to assist in achieving its goal(s), which for MFIs are to reach poor clients and achieve financial sustainability (Mersland & Strøm, 2009; Sami, Wang, & Zhou, 2011). Effective checks and balances are often put in place to ensure that managers are restrained from taking advantage of their position at the expense of the stakeholders (Nur et al., 2013).

3.4.2 Corporate governance challenges that face SACCOs

SACCOs in Kenya face a number of corporate governance challenges in their endeavour to remain financially sustainable. One major challenge is the lack of equal representation for borrowers and savers; many SACCOs suffer from borrower dominance at the expense of the savers (Rock, Otero, & Saltzman, 1998). According

to Odera (2012), SACCOs are also uncompetitive when recruiting managers and staff due to the low remuneration paid by the SACCO industry, thus SACCOs are not able to recruit high caliber staff, resulting in management problems. Further, massive corruption when recruiting top SACCO managers and directors has resulted in poor management (Odera, 2012), and SACCO boards also lack the capacity to make fiduciary decisions, further aggravating governance challenges. According to Onsase, Okioga, Okwena, and Ondieki (2012), managers of some SACCOs are commercially oriented and disregard the cooperative philosophy of management. Mudibo (2005) defined cooperative philosophy as the seven principles of cooperatives: voluntary and open membership; democratic member control; member economic participation; autonomy and independence; education of the members; training and information cooperation among cooperatives; and concern for the community at large.

SACCOs have shifted their focus from the cooperative philosophy and are now aiming at making profits as opposed to being of service to all, which results in low-quality services. Although they charge a lower interest rate than banks, member loans are often not approved on time, meaning SACCOs perform poorly on the effective performance management practices in the provision of financial services to their members (Onsase et al., 2012). According to Uluma (2013), most leaders have completely diverted from the SACCO philosophy in Kenya, and instead conduct business with the sole intention of making profits. According to Keating and Keating (2011), SACCO managers find themselves in a catch-22 situation, i.e. they are torn between whether to issue loans to members at low interest rates, or to issue loans elsewhere where the rate of return is high. Institutional structures under which SACCOs operate constrain their operations, for example the common bond principle, which many SACCOs still practice, has negatively affected their performance.

3.4.3 Pillars of corporate governance

In order to achieve financial sustainability status, SACCOs should adopt three main pillars of corporate governance. Adherence to these pillars will result in an increase

in profitability, which is in line with the profitability theory of financial sustainability (Hasselgren, 2010; Nur'ainy et al., 2013).

The first pillar is to determine the objectives of the firm. Successful companies have directors who know where the firm is going and how it will get there, and strong and effective boards lead the firm into making profits and improving on overall financial performance. Board members should know their duties, and directors should be held accountable for their actions (Hasselgren, 2010).

The second pillar is the existence of an effective governance culture; an organisation which observes corporate governance ideals and standards should not have a dominant chief executive officer (CEO) and a weak chairman of the board. Agency problems will also be avoided through clarity of functions for the different organs of the organisation. This involves recognising the rights of all the groups in the organisation. The BOD should avoid unethical behaviour such as insider trading, fraud, corruption and hoarding at all times (Hasselgren, 2010; Nur'ainy et al., 2013).

Transparency and effective compliance is the third pillar. Transparency is the ability to assess the management with ease, i.e. all actions of the BOD and top management should be above board. The BOD should ensure that the organisation remains solvent and is compliant with the rules and regulations as well as the laws of the land, and that the board understands and undertakes risk management, and complies with the recruitment policy of the organisation (Hasselgren, 2010; Nur'ainy et al., 2013). Regulations such as industrial relations, environmental protection, safety and health standards, and tax issues should also be strictly adhered to (Nur et al., 2013).

Implementing the principles of corporate governance can lead to the attainment of these pillars in tandem with the theories of corporate governance, which underpin the study. These theories, which were outlined in Chapter Two, are agency theory, stakeholders' theory, political theory and resource dependency theory. Implementation of the principles of corporate governance by SACCOs is expected to result in profitability and by extension financial sustainability, thus these principles are

in line with the profitability theory of financial sustainability. These principles are discussed in turn.

First, there should be a well-structured management, with no individual in a position to unfairly influence the decisions of the BOD. A well-structured management can help in reducing agency conflict, take care of the interests of all the stakeholders, and at the same time provide the necessary resources for the SACCOs to create wealth for the members BOD (AGC, 2007; Hermes et al., 2007; Tricker, 2015).

The second principle is value addition. Effective BODs should have the required skills and competences, decisions should be made independently without influence, whether internal or external, and they should strive to increase shareholder wealth (A.G.C, 2007; Tricker, 2015; Hermes et al., 2007).

Third, an organisation should ensure compliance with ethical guidelines, i.e. the BOD should adhere to the code of ethics put in place (AGC, 2007; Hermes et al., 2007; Tricker, 2015).

The fourth principle is integrity in financial reporting. A structure for the review and authorisation of financial reports should thus be put in place, and there should be audit committees to review the financial reports (AGC, 2007). These committees should comprise of both executive and non-executive directors, as well as independent directors. An organisation should also appoint an independent auditor to audit the financial reports and give opinions (AGC, 2007; Hermes et al., 2007; Tricker, 2015).

Disclosure of information is the fifth principle. Stakeholders should have equal rights and access to the information of the organisation, and information communicated to the stakeholders should be clear and objective (AGC, 2007; Hermes et al., 2007; Tricker, 2015).

Risk management is the sixth principle, as it is the role of the BOD to assess, monitor and manage risk. Any change, whether internal or external, should be communicated

to the BOD, and the BOD should put in place strong ICS for the purpose of risk minimisation (AGC, 2007; Hermes et al., 2007; Tricker, 2015).

Finally, a remuneration committee should be created by the BOD that is responsible for developing remuneration, and recruitment and dismissal of staff policies. The committee should also be responsible for fixing the packages of the directors and other top officials of the organisation (AGC, 2007; Hermes, Postma, & Zivkov 2007; Tricker, 2015).

3.4.4 Components of corporate governance

In order to comply with the principles of corporate governance, SACCOs should endeavour to maintain three main components of corporate governance (Adams & Mehran, 2012; Andreou et al., 2014): board size, board independence and audit committees, which have been found to impact on the financial sustainability of firms (Adams & Mehran, 2012; Andreou et al., 2014; Giroud & Mueller, 2010; Mashayekhi & Bazaz, 2008; Reddy, Locke, & Scrimgeour, 2010; Rose & Munch-Madsen, 2013). The SACCO Act of 2008 as well as the SACCO regulations of 2010 require that these components be present in every SACCO. The three components were used in the study as measures of SACCO corporate governance.

3.4.4.1 Board size

A BOD is a central institution that is involved in the internal governance of a firm (Guest, 2009). Its role is to monitor the activities of management and ensure protection of the interests of all stakeholders, as outlined by the stakeholders' theory of corporate governance. The BOD should solve any agency problems that arise, which is in line with the agency theory of corporate governance (Franken & Cook, 2013; Lefort & Urzua, 2008). Furthermore, it is the mandate of the BOD to source resources to be utilised in the creation of wealth for the members, which is in line with the resource dependency theory of corporate governance (Franken & Cook, 2013; Lefort & Urzua, 2008). Finally, the BOD should protect the SACCOs from interference from politicians, as outlined in the political theory of corporate

governance. The BOD should avoid nepotism, corruption, mismanagement and financial indiscipline in SACCOs, which are a manifestation of political interference with the management of firms (Abdullah & Valentine, 2009).

SACCOs are required to have a board that is constituted to manage the affairs of the organisation (SASRA, 2010). The number of its members determines the size of a board, which is in turn dependent on the profitability and financial sustainability of the SACCO (Guest, 2009; Chenuos et al., 2014). The optimal size of a board is not clear for any firm, as different scholars have suggested different figures. Andreou et al. (2014) and Guest (2009) suggested a number between seven and nine members; Chenuos et al. (2014) suggested an average of eight members; Horváth and Spirollari (2012) suggested a minimum of five and a maximum of 18 members; Kiel and Nicholson (2003) suggested an average of around six members; while Postma, van Ees, and Sterken (2001) suggested an average board size of three members. *Ceteris paribus*, a SACCO with an average board size should be more financially sustainable (Guest, 2009; Horváth & Spirollari, 2012; Chenuos et al., 2014), because it will benefit from the diverse experience of the members and at the same time will reduce disagreements during the process of decision making (Horváth & Spirollari, 2012).

3.4.4.2 Board independence

Board independence is determined by the number of non-executive directors on a board (Horváth & Spirollari, 2012), as an independent or non-executive director is not an employee of the firm and has no financial or family ties with management (Adams & Mehran, 2012; Franken & Cook, 2013; Horváth & Spirollari, 2012). Board independence for SACCOs enhances the protection of stakeholders' interests, protects the SACCO against political interference, smooths the acquisition of resources for members' wealth creation, and can minimise agency conflict (Abdullah & Valentine, 2009; (Amess & Howcroft, 2001) (Caprio & Levine, 2002) Daily et al., 2003). All these benefits are in line with the four corporate governance theories that underpin the SACCO governance variable outlined in Chapter Two. A minimum of four and a maximum of eight independent directors is recommended for any

organisation depending on its size and operations (Horváth & Spirollari, 2012), although Chenuos et al. (2014) suggested that board independence is achieved when the number of non-executive directors is greater than the number of executive directors to ensure independence of decisions. The existence of an independent board enhances accountability, which will result in financially sustainable operations (Horváth & Spirollari, 2012, Chenuos et al., 2014).

3.4.4.3 Audit committee

An audit committee is a sub-committee of the BOD, which oversees and ensures a firm's corporate governance, corporate responsibility, and promotion of efficacy in audits. The existence of an audit committee will enhance accountability and transparency, thereby exposing transactions that are not *bona fide* to the members of the SACCO (Chau & Leung, 2006; Rezaee, Olibe, & Minmier, 2003). The audit committee will also enhance protection of stakeholders' interests, protect the SACCO against political interference, and ensure proper resource utilisation (Abdullah & Valentine, 2009; Amess & Howcroft, 2001; Caprio & Levine, 2002; Daily et al., 2003). However, the existence of an audit committee may increase competition among the directors, as well as increase bureaucracy, which will curtail the operations of the SACCO. SACCOs with audit committees are expected to be financially sustainable since accountability is enhanced and managers are put in check (Chau & Leung, 2006; Rezaee et al., 2003).

3.4.5 Empirical evidence on SACCOs' corporate governance

The empirical evidence on the components of corporate governance is discussed in this section. The research conducted found contradictory results regarding the impact of corporate governance on financial sustainability, which are discussed below.

3.4.5.1 Positive relationship

A positive correlation means that an improvement in corporate governance will lead to better financial performance and therefore the financial sustainability of a firm.

Various measures of corporate governance from previous studies have supported this argument, and the influence of board size, board independence and audit committees for firms in Kenya was found to be positively correlated to financial sustainability. This was observed in research by Ong'wen (2010), who studied 43 companies quoted on the Nairobi Securities Exchange (NSE) using multiple regression for analysis, and Wanjau (2007), who studied 15 MFIs in Kenya and analysed data using descriptive statistics. Studies from other parts of the world also reported a positive influence.

3.4.5.1.1 Board size

The size of a board positively affects its decision-making capabilities (Andreou et al. 2014; Rose & Munch-Madsen, 2013); the decisions made by larger boards are often of a higher quality and are more creative and innovative compared to smaller boards, which leads to firms performing better financially (Erhardt, Werbel, & Shrader, 2003; Rose & Munch-Madsen, 2013). The size of the board thus influences its ability to undertake its oversight role (Erhardt et al., 2003; Magali, 2014), which in turn influences the firm's financial performance (Darmadi, 2011; Erhardt et al., 2003; Hafsi & Turgut, 2013; John, Litov, & Yeung, 2008). Similar findings were reported by other authors (Adams & Mehran, 2012; Coles & Naveen, 2008; Dalton, Daily, Johnson, & Ellstrand, 1999; Donoshana & Ravivathani, 2013; Franken & Cook, 2013; Galema, Lensink, & Mersland, 2012; Kiel & Nicholson, 2003, Chenuos et al., 2014; Larcker & Richardson, 2004; Lukason, 2012).

3.4.5.1.2 Board independence

According to Hafsi and Turgut (2013), Adams and Mehran (2012) and Hassan (2012), there is a direct relationship between board independence and the financial performance of a firm, as independent directors are more effective in monitoring and evaluating the actions of management. This often results in corporate fairness, transparency and accountability, profitability and better performance (Oluoch & Wen, 2010). Firms with a large number of independent directors were found to be more profitable due to efficiency in monitoring the activities of management (Dalton et al.,

1999; Mashayekhi & Bazaz, 2008; Lel & Miller, 2008). Companies that adopted GCG, including board independence, performed better, as the independent directors were able to monitor the activities of the management team (Ong'wen, 2010; Wanjau, 2007). Bhagat and Black (2001) conducted a study of 934 large firms in the USA and found a positive relationship between board independence and financial performance. Being able to monitor the activities of management was cited as the main reason for this. In another study of 35 bank holding companies in the USA, similar findings were reported (Adams & Mehran, 2012).

3.4.5.1.3 Audit committees

Zhang, Zhou, and Zhou (2007) argued that a positive relationship exists between audit committees and financial performance, as firms with audit committees that perform their functions effectively have strong internal control systems, while the reverse is true for firms without audit committees. A large audit committee will produce better results since the many members are in a position to audit many and critical areas of the SACCO. In a study of 397 publicly traded firms in Hong Kong, Chau and Leung (2006) found that investor confidence exists in firms with audit committees due to their oversight role, while Jaggi and Leung (2007), Laing and Weir (1999), and Lin, Li, and Yang (2006) reported similar findings. In Abbott, Park, and Parker's (2000) study of 156 firms, those with audit committees were found to experience less fraud due to the oversight and monitoring roles played by the committees.

3.4.5.2 Negative relationship

A negative relationship indicates that the existence of corporate governance adversely affects financial sustainability. A negative influence relating to board size, board independence and audit committees was reported in studies by Siele (2009), who analysed companies on the NSE using multiple regression, and Chenuos et al. (2014), who studied 10 SACCOs and used panel data analysis. Other studies in different parts of the world reported a negative influence, as discussed below.

3.4.5.2.1 Board size

According to Erhardt et al. (2003), the financial performance of a firm is positively related to the diversity of its board, although Guest's (2009) study of 2,746 listed firms in the United Kingdom found that a strong negative relationship for large firms with large board sizes was observed between financial performance and sustainability. This was due to poor communication *inter se;* poor coordination and difficulties in reaching consensus during decision-making; high board operational costs due to meeting allowances; as well as free rider problems (Guest, 2009; Siele, 2009). Franken and Cook (2013) and Kiel and Nicholson (2003) alluded to better financial performance for cooperatives with small boards, which Conyon and Peck (1998) also illustrated in their study of firms in five European countries. Smaller boards were found to perform better as a result of not incurring the costs associated with larger boards, better communication and goal congruence between management and the board, and faster decision-making. As a result of these advantages, firms with small boards had an increase in debt-to-asset ratios and an increase of cash flow to net income ratio (Van Ness, Miesing, & Kang, 2010). However, Postma et al. (2001), in their study of 96 Dutch manufacturing firms listed on the Amsterdam Stock Exchange, found that in contrast to the above findings, smaller boards performed no better.

3.4.5.2.2 Board independence

Although independent directors bring useful information to a firm, sometimes they can hinder its performance (Guest, 2009). In a study of 136 firms by Horváth and Spirollari (2012) in the USA, internal directors became less independent and less efficient as a result of an increase in the number of independent directors who favoured conservative business strategies. Adams and Mehran's (2012) research on Japanese firms also found that a large number of independent directors did not help mitigate the agency problem, which resulted in poor performance. Postma et al.'s (2001) study of Dutch companies further highlighted the impact of appointing incompetent individuals who are not able to monitor management's performance. In other studies, board independence was not found to have any effect on the financial

performance of companies due to the independent directors not being fully conversant with the operations of the company. This was demonstrated by Lefort and Urzua's (2008) study of listed non-financial companies in Chile.

3.4.5.2.3 Audit committees

Rahman and Ali's (2006) study on 97 Malaysian firms showed that audit committees had not achieved their intended mandate due to lack of capacity. In another study of 87 New Zealand firms, the existence of audit committees also did not improve the quality of financial reporting (Rainsbury et al., 2009), but rather resulted in unnecessary costs that did not improve firms' financial self-sufficiency.

3.4.6 Conclusion

From the findings of previous studies, corporate governance can be seen to be one of the factors that has an effect on the financial sustainability of firms. Contradictions, biases and weaknesses in the previous studies on the effect of regulation on financial sustainability have been highlighted. The main goal of the present study is to delineate the relationship between corporate governance and financial sustainability, and thereby determine the influence of corporate governance on the financial sustainability of SACCOs in Kenya. In the following section, a SACCO's size as a determinant of financial sustainability is discussed.

3.5 Size

The purpose of this section is to delineate the relationship between the size of a SACCO and financial sustainability. Previous studies on SACCOs in Kenya by Johnson (2004), Karanja (2013), Mbogo and Ashika (2011) and Odera (2012), among others, showed contradictions and biases in the relationship between size and financial sustainability, thus the relationship is inconclusive. In this section, firm size is defined, followed by a discussion on the determinants of firm size and a look at the relationship between firm size and financial sustainability.

3.5.1 Definition of firm size

Firm size refers to the change in a firm's total assets and incomes, such that an increase in the two measures represents growth in firm size and vice versa (Pagano & Schivardi 2003; Stimpert & Laux, 2011). The size of a firm is important due to the advantages and disadvantages faced by a firm at different levels of growth. According to Carrizosa (2007), a firm follows a life cycle which starts with its formation, followed by its survival, growth and eventual death. The size of the firm is crucial in establishing its relationship with its environment, both internal and external. Larger firms, for example, have a greater influence on both environments than small firms (Babalola, 2013).

Firm size can be measured by using total assets, total income, profits and liquidity assets, market share, and sales (Almajali et al., 2012; Beck, Demirgüç-Kunt, Laeven, & Levine, 2008; Ghafoorifard, Sheykh, Shakibaee, & Joshaghan, 2014; Goddard, McKillop, & Wilson, 2002; Nur'ainy et al., 2013; Orlitzky, 2001; Pagano & Schivardi 2003; Stimpert & Laux, 2011; Xu & Banchuenvijit, 2012). Total assets and total income are the most commonly used measures of firm size (Almajali et al., 2012; Beck et al., 2008; Ghafoorifard et al., 2014; Goddard et al., 2002; Nur'ainy et al., 2013; Orlitzky, 2001; Pagano & Schivardi 2003; Stimpert & Laux, 2011; Xu & Banchuenvijit, 2012). The two measures of firm size adopted in this study are discussed below.

3.5.1.1 Total assets

Total assets were the first measure of a SACCO's size adopted in this study. Saleemi (2008) defined an asset as any item of value owned by an individual or a firm expressed in monetary terms, while Wood and Sangster (1999) defined assets as properties owned by the business expressed in monetary terms; they represent business resources that enable it to trade and carry out trading activities. Total assets comprise both current assets and long-term assets. A high value of assets owned by a firm is an indicator of a large firm, which is expected to be more financially sustainable as it uses such assets to generate more income compared to

a small firm (Saleemi, 2008; Stimpert & Laux, 2011). Small firms, on the other hand, have assets with low value, and are therefore considered to be financially unsustainable (Almajali et al., 2012; Beck et al., 2008; Ghafoorifard et al., 2014; Goddard et al., 2002; Nur'ainy et al., 2013; Orlitzky, 2001; Pagano, & Schivardi 2003; Stimpert & Laux, 2011; Xu & Banchuenvijit, 2012).

3.5.1.2 Total income

The second commonly used measure of firm size is total income (Doğan, 2013; Ralston, Wright, & Garden, 2001), which is defined as an amount received from the sale of commodities or work done during a given financial period (Saleemi, 2008). The higher the income, the larger the firm and the more financially sustainable it is, as the firm is able to make more profits. Small firms, on the other hand, have low total incomes and are therefore expected to be financially unsustainable (Doğan, 2013; Ralston et al., 2001).

3.5.2 Determinants of firm size

The determinants of firm size help in entrenching the theory of the growth of the firm and the resource-based view. Firm size determinants are classified into three categories: individual characteristics, firm characteristics and environmental determinants. The existence of these determinants in a firm will have a positive impact on total assets and total income, the measures of a SACCO's size (Delmar & Wilkund, 2008; Nichter & Goldmark, 2009; Zhou & Wit, 2009). As discussed above, an increase in the two measures will result in achieving financial sustainability status, *ceteris paribus*. The firm size determinants are discussed below.

3.5.2.1 Individual determinants

Individual determinants rely on the resource-based view, as outlined in Chapter Two. Individual determinants revolve around human capital, i.e. they are based on individual skills and competences. The individual determinants of a firm influence firm size. Individual traits include the ability of an entrepreneur to engage with others and

maintain social relationships, mental balance and stability, openness, agreeableness, a thirst for achievement, a risk-taking attitude, and having the outcome of decisions within one's control, while gathering together the required skills and competences. An entrepreneur's motivation will relate positively with the firm's growth and size, as motivated entrepreneurs will start a small firm and grow it into a big firm over time (Delmar & Wilkund, 2008; Nichter & Goldmark, 2009; Zhou & Wit, 2009).

The historical background of an entrepreneur includes age, gender, education level and areas of interest, for instance, the age of an entrepreneur is positively related to firm size and growth (Zhou & Wit, 2009). The effect of gender on firm size is ambiguous, however various researchers found that male entrepreneurs are more ambitious in growing their firms than their female counterparts (Delmar & Wilkund, 2008; Nichter & Goldmark, 2009; Zhou & Wit, 2009). Education level and experience have a positive relationship with firm growth, however, because the two variables build a strong sense of confidence in the entrepreneur, especially when making challenging and risky decisions (Zhou & Wit, 2009).

A well-managed human capital is highly motivated and will thus ensure goal congruence at all times, resulting in a growth in assets and the total income of the firm (Delmar & Wilkund, 2008; Nichter & Goldmark, 2009; Zhou & Wit, 2009). An increase in total assets and income will in turn result in a firm achieving financial sustainability.

3.5.2.2 Firm characteristics

Growth in firm size results in increased sales, number of employees and units produced, as well as growth in the knowledge acquired by employees as a result of the learning curve effect. As a firm grows, economies of scale that are associated with large production are enjoyed (Delmar & Wilkund, 2008; Nichter & Goldmark, 2009; Zhou & Wit, 2009). The first firm characteristic consists of strategies undertaken by the firm's management; management of a firm with risk-preference behaviour will achieve higher growth and thus bigger firm size, since management is ready to invest even in the most risky projects as long as the return is high. All other

variables held constant, risky investments are also highly profitable. Such firms also introduce new products into the market and will be ahead of their competitors, thus financial sustainability will be achieved. An increase in sales and taking advantage of economies of scale will result in more income earned by a firm, and by extension, an increase in total assets will be realised. The firm will then have sufficient funds to acquire assets that will be applied to manage the expansion programme (Delmar & Wilkund, 2008; Nichter & Goldmark, 2009; Zhou & Wit, 2009).

The second characteristic is the firm's resources; having access to resources will enhance firm growth and size as measured by total assets and total income. Availability of resources will enable firms to experiment with new ideas, which may result in profitability. Large firms with the required resources will attract rich human capital in terms of skills and experience, and this will enable them to grow further in size, in terms of both total assets and total income (Schiffer & Weder, 2001).

The third characteristic is a firm's organisational structure; the delegation of different tasks to different people will enhance firm growth, as specialisation, departmentalisation and decentralisation are the key variables used in job allocation. The learning curve effect on the staff will also have a positive impact on a firm's growth. To achieve the intended firm structure, the acquisition of assets like furniture and equipment will be required, which will result in an increase in total assets. Management would then be required to utilise the acquired assets in wealth creation for the members, therefore it is likely that the total income will increase as well, which will in turn increase financial sustainability (Delmar & Wilkund, 2008; Nichter & Goldmark, 2009; Schiffer & Weder, 2001; Zhou & Wit, 2009).

3.5.2.3 Environmental determinants

Firms that seek to exploit new and untapped markets will attain substantial growth compared to firms operating in already exploited markets, as the dynamic environment will accelerate their growth. An investment in new markets will result in an increase in total assets, which have to be acquired to support the running of the established new markets. Total income is also expected to increase due to the

utilisation of the newly acquired assets, which will in turn influence the financial sustainability of the firms (Nichter & Goldmark, 2009; Zhou & Wit, 2009).

3.5.3 Empirical evidence on firm size

The impact of firm size as measured by total assets and total liabilities on financial sustainability obtained from previous studies has shown contradictory results. The findings of the different studies are discussed below.

3.5.3.1 Positive relationship

A positive relationship between firm size and financial sustainability indicates that an increase in total assets and total income result in a firm being more financially sustainable. Findings obtained from studies in Kenya and other parts of the world support this view.

3.5.3.1.1 Total assets

A positive influence of total assets on financial sustainability was found to exist in past studies: Karanja (2013) in a study of 40 SACCOs offering FOSA in Kenya using descriptive data analysis; Mbogo and Ashika (2011) who analysed data from 40 SACCOs in Nairobi using linear regression; and Odera (2012), whose study was based on SACCOs in Kenya. These studies found that an increase in total assets resulted in the financial sustainability of SACCOs. Bigger SACCOs were found to be more financially sustainable since they enjoyed economies of scale, had utilised the effects of their learning curve, and also had more financial resources at their disposal compared to small ones (Johnson, 2004; Karanja, 2013; Mbogo & Ashika, 2011; Odera, 2012).

Similar findings were reported by Babalola (2013) who studied non-financial firms quoted on the Nigerian Stock Exchange (NSE) for the period 2000 to 2009, Almajali et al. (2012) who did a study of insurance companies listed on the Amman Stock Exchange (ASE), Kipesha (2013) who studied 30 MFIs in Tanzania, and Xu and

Banchuenvijit (2012) who did a study of 50 listed firms quoted on the Shanghai Stock Exchange.

3.5.3.1.2 Total income

An increase in total income was found to be positively correlated to the financial sustainability of SACCOs in studies done in Kenya (Karanja, 2013; Mbogo & Ashika 2011; Odera 2012), i.e. the more income earned, the higher the profitability and thus the financial sustainability.

Similarly, Abbas, Bashir and Manzoor (2013) studied 139 textile firms in Pakistan and reported similar findings, as did Ghafoorifard et al. (2014), who conducted a study of 96 listed companies on the Tehran Stock Exchange. In other studies, large firms were found to be able to face risks more effectively as they were stronger than the smaller firms. A large firm was able to fight market uncertainty and risk; had bargaining power for financing, good credit terms and sound dealings with creditors; enjoyed efficiency in terms of control of expenditure, location, use of superior technology, and employment of experts and professionals: and also had the ability to undertake research and development (Bhattacharyya & Saxena, 2009; Gallo & Christensen, 2011; Leung, Meh, & Terajima, 2008; Mishra & Chandra, 2010; Moeinaddin, Dehgan, Dehnavi, & Abdi, 2012; Salehi, Mansoury, & Pirayesh, 2009; Uluma, 2013).

3.5.3.2 Negative relationship

A negative relationship between firm size and financial sustainability indicates that an increase in total assets and total income results in a decrease in the financial sustainability of a firm.

3.5.3.2.1 Total assets

An increase in total assets was found to negatively correlate with the financial sustainability of SACCOS in Kenya. Gweyi and Karanja (2014) studied 40 SACCOs

in Kenya and reported a negative influence, while Olando et al. (2012) reported similar results in a study of 44 SACCOs in Meru, Kenya. The increase in assets did not result in an increase in profitability, or by extension, financial sustainability, i.e. the assets acquired were not utilised to raise more income and create wealth for the members (Akoten et al., 2006; Gweyi & Karanja, 2014; Olando et al., 2012).

Similar findings were reported in studies in other parts of the world, for example in a study by Ralston et al. (2001) on Australian credit unions, it was found that CUs agreed to merge in order to increase firm size and reap the benefits of economies of scale, however they experienced a decline in financial sustainability due to their large size, which made them operationally inefficient. Goddard et al. (2002) also found that large-size CUs in the USA were not financially sustainable, as they quickly outgrew their capital, leading to problems with the regulator on capital requirements. Similarly, in a study of 1,214 banks in the USA, it was found that firm size as measured by total assets influenced financial sustainability negatively (Stimpert & Laux, 2011), as large firms suffered from diseconomies of scale. Furthermore, these firms earned lower profits due to their high operational costs (Stimpert & Laux, 2011). Similar findings were reported by Moeller et al. (2004), who studied large firms in the USA covering 12,023 acquisitions by public firms from 1980 to 2001; Wheelock and Wilson (2011) in a study of small CUs in the USA; Majumdar (1997) in a study of small firms in India; and Canback, Samouel, and Price (2006), who studied 784 large manufacturing firms.

3.5.3.2.2 Total income

For total income, findings similar to those of total assets were found, i.e. an increase in total income did not result in increased profitability or financial sustainability; as incomes increased due to growth in firm size, so did expenses (Akoten et al., 2006; Gweyi & Karanja, 2014; Olando et al., 2012).

3.5.3.3 No relationship

According to Said and Tumin (2011), firm size as measured by total assets and total income was found to have no correlation with financial sustainability. A sample of four commercial banks owned by the People's Republic of China and nine commercial banks in Malaysia was analysed, while in another study of information technology firms in Turkey, total assets and total income were found to have no relationship to financial sustainability (Kalkan, Erdil, & Çetinkaya, 2011). Similarly, firms studied in Greece showed no correlation between size and financial performance (Vlachvei & Notta, 2008).

In another study, SACCOs, although small in size, were found to be as profitable as savings banks in the USA, which are large in size, indicating no correlation between firm size, as measured by total assets and total income, and financial sustainability (Kaushik & Lopez, 1994). Lukason (2012) found the same in his census study on bankrupt Estonian firms from 2002 to 2009, while Yildiz, Bozkurt, Kalkan and Ayci (2013) also found no relationship in their study on firm size and financial performance; although small firms were found to be unable to invest in IT due to cost constraints, large firms that were fully automated performed no better.

3.5.4 Conclusion

From the above studies, firm size can be seen as one of the factors that has an effect on financial sustainability, however there are contradictions and biases in previous studies on this topic. The main goal of the present study is to delineate the relationship between a SACCO's size and its financial sustainability, and thereby determine the influence of size on the financial sustainability of SACCOs in Kenya. In the following section, the age of a SACCO as a determinant of financial sustainability is discussed.

3.6 Age

This section addresses if the age of a SACCO is an important factor in determining the financial sustainability of SACCOs in Kenya. As per previous studies, the actual relationship between the age of a SACCO and financial sustainability is not conclusive, as research conducted in Kenya has offered contradictory findings (Lundvall & Battese, 2000; Nyangeri, 2014; Wanjau, 2007). The purpose of this section is thus to delineate the relationship between age and financial sustainability. The section defines a SACCO's age, outlines the life cycle of a firm, and discusses the classification of firms by age. It concludes by analysing the controversies of firm age as a determinant of financial sustainability from previous studies.

3.6.1 Definition of a firm's age

A firm's age is defined as the period a firm has been in operation from the time it was incorporated (Almajali, 2012; Anderson & Eshima, 2013; Coad et al., 2013; Loderer & Waelchli, 2009). A firm's age is measured by counting the number of years the firm has been in existence since formation or from the date of listing on the stock market (Almajali, 2012; Anderson & Eshima, 2013; Coad et al., 2013; Loderer & Waelchli, 2009). In the present study, the age of a SACCO is calculated by determining the number of years it has been in operation from the date of registration.

3.6.2 Life cycle of a firm

As discussed in Chapter Two, the classification of a firm's life into stages is based on the age of the firm at each stage (Aharony et al., 2006; Ahmed & Javid, 2009; Frielinghaus et al., 2005; Jenkins et al., 2004; Penrose, 1952; Takhtaei, 2014). Different characteristics manifest in each stage, which in turn influences financial sustainability, as discussed below.

3.6.2.1 Introduction stage

This stage is also called the start-up stage, infancy stage or birth stage. It is characterised by a small sized firm's risk assumption and its vulnerability to financial shocks, with minimal access to outside capital and high borrowing costs. The focus at this stage is the development of new products to be introduced into the market (Aharony et al., 2006; Ahmed & Javid, 2009; Frielinghaus et al., 2005; Jenkins et al., 2004; Penrose, 1952; Takhtaei, 2014).

During this stage, internally generated funds are not sufficient to support the operating costs, therefore the firm is not financially sustainable (Aharony et al., 2006; Ahmed & Javid, 2009; Frielinghaus et al., 2005; Jenkins et al., 2004; Penrose, 1952; Takhtaei, 2014). This stage incorporates young firms that are five years old or below (Abu-Ali & Al-Bahar, 2011; Ayyagari, Demirgüç-Kunt, & Maksimovic, 2011; Fort, Haltiwanger, Jarmin, & Miranda, 2013).

3.6.2.2 Survival stage

In this stage, which is also called the go-to-go, the firm's earnings increase and positive cash flows are reported. The increase in earnings is as a result of a high growth in sales and asset value (Aharony et al., 2006; Ahmed & Javid, 2009; Black, 1998; Frielinghaus et al., 2005; Jenkins et al., 2004; Penrose, 1952; Takhtaei, 2014).

This type of firm has many investment opportunities and is able to access external finance and gain market share for its products. An increase in earnings leads to more profits, which results in financial sustainability (Black, 1998; Frielinghaus et al., 2005; Jenkins et al., 2004; Takhtaei, 2014). These firms are between six years to 10 years old (Abu-Ali & Al-Bahar, 2011; Ayyagari et al., 2011; Fort et al., 2013).

3.6.2.3 Maturity

This stage is characterised by a lowered risk profile, maximum efficiency, full utilisation of assets, an increase in maintenance costs of assets due to depreciation,

and a decline in investment opportunities as a result of competition (Aharony et al., 2006; Ahmed & Javid, 2009; Black, 1998; Frielinghaus et al., 2005; Jenkins et al., 2004; Penrose, 1952; Takhtaei, 2014). At this stage shareholders start demanding dividends as opposed to ploughing profits back, i.e. a firm is expected to be financially sustainable in this stage (Aharony et al., 2006). Firms over 10 years old are categorised under this stage (Abu-Ali & Al-Bahar, 2011; Ayyagari et al., 2011; Fort et al., 2013).

3.6.2.4 Decline

This is the last stage of a firm's life cycle, which is also called the death stage. In this stage, firms suffer from a decrease in sales, earnings, and assets, which also leads to a decrease in financial sustainability (Aharony et al., 2006; Ahmed & Javid, 2009; Black, 1998; Frielinghaus et al., 2005; Jenkins et al., 2004; Penrose, 1952; Takhtaei, 2014). A firm's death may occur as a result of mergers and acquisitions or liquidation (Aharony et al., 2006; Frielinghaus et al., 2005). Firms beyond ten years can find themselves in this stage, according to the life cycle of a firm theory (Abu-Ali & Al-Bahar, 2011; Ayyagari et al., 2011; Fort et al., 2013).

The life cycle of a firm theory was used in the present study to classify SACCOs based on age into three categories. The theory best explains the profitability theory of financial sustainability, since it shows the growth in profits and financial sustainability as the firm ages, and later a reduction in profits and financial sustainability during the decline stage.

3.6.3 Firm classification by age

Firms may be classified into three categories based on their age (Abu-Ali & Al-Bahar, 2011; Ayyagari et al., 2011; Fort et al., 2013). The first classification is young or new firms. These are firms that are five years old or less (Abu-Ali & Al-Bahar, 2011; Ayyagari et al., 2011; Fort et al., 2013). In the second category are firms that are six to 10 years old. These firms are called intermediate, medium, or mid-age firms (Abu-Ali & Al-Bahar, 2011; Ayyagari et al., 2011; Fort et al., 2013). In the last category are

firms that are over 10 years old and are classified as mature or established firms (Abu-Ali & Al-Bahar, 2011; Ayyagari et al., 2011; Fort et al., 2013).

3.6.4 Empirical evidence on firm age

The impact of firm age on financial sustainability has had contradictory results. The findings of different studies conducted are discussed below.

3.6.4.1 Positive relationship

A positive influence of firm age on financial sustainability implies that as a firm ages, it becomes more financially sustainable. Empirical findings from previous studies support this view, for example Wanjau (2007) studied 15 SACCOs and found a positive relationship between firm age and financial sustainability using descriptive statistics. Similar findings were reported by Nyangeri (2014), who studied 134 pension schemes in Kenya and used the multiple regression technique for data analysis.

A positive influence occurs as a result of an increase in profitability as a firm ages, an increase in sales, the existence of strong human resource capital, and a better use of learning curve effects than in young firms (Ayayi & Sene, 2010; Barron et al., 2015; Coad et al., 2013; Gaur & Gupta, 2011; Hui, Radzi, & Kasim, 2013; Huynh & Petrunia, 2010; (Kipesha, 2013)Rose et al., 2010; Takhtaei, 2014). An increase in sales results in an increase in profitability, and hence increased financial sustainability. In other studies, Nyamsogoro (2010) and Okumu (2007) concurred with the findings of the studies above.

3.6.4.2 Negative relationship

A negative influence of firm age on financial sustainability implies that as a firm ages, it becomes less financially sustainable. Empirical findings from previous studies support this view, for example Lundvall and Battese (2000) studied 234 manufacturing firms in Kenya and reported a negative relationship. In another study

of small and medium enterprises (SMEs) in Japan, young firms were found to be financially sustainable as a result of their high growth rates across all dimensions compared to the older firms (Anderson & Eshima, 2013). Young firms performed better since they were found to have flexible structures, entrepreneurial strategies and high managerial congruence compared to old firms (Anderson & Eshima, 2013). Similar findings were reported by Vlachvei and Notta (2008) in a study of Greek firms, Loderer and Waelchli (2009) in a study of American firms, and Zhou and Wit (2009) in a study of Dutch firms.

The age of a firm distorts its financial performance, and as a result, financial sustainability is affected adversely. Several factors cause this distortion. First, old firms can have obsolete ideas, as the original idea of forming a firm emanates from the owner. As firms grow in size, other people come in to undertake the various activities of the firm, and the original objectives are distorted and become obsolete. The resources of the firm are also depleted as the firm ages, and the rates of learning and the generation of new ideas reduces with time. This aggravates the firm's problems, weakening it to a point where it is no longer financially sustainable. Secondly, organisational inflexibilities crop up, as complexities and management rigidities increase as firms grow older. This is as a result of the organisation adhering to rules and regulations that were formulated as a result of an increase in the size of the firm; little room is left in the organisation for innovation and initiative, as the rules and regulations are to be followed to the letter. Firm age, therefore, reduces flexibility and acts as a deterrent to change (Coad, 2007; Loderer & Waelchli, 2009; Thornhill & Amit, 2012).

Thirdly, financial performance distortion is caused by the seniority principle, which states that staff members of a firm who have been in employment for a long period are the ones who decide what is to be done, how to do it, and who is to do it. Such staff members are granted preferential treatment by the organisation and also earn high perquisites compared to their counterparts. Past knowledge and experience is heavily relied upon in pushing the firm forward, and antagonism between the senior and junior staff members may arise, negatively affecting performance (Coad, 2007; Loderer & Waelchli, 2009; Thornhill & Amit, 2012). Finally, as the firm ages, it loses

its memory; organisational evolution becomes a function of past happenings. Activities of the past such as meetings and discussions act as precedents and play a greater role in shaping the organisation's future. As a firm ages, its restrictive memory becomes heavier and this affects the firm's performance negatively (Loderer & Waelchli, 2009).

3.6.4.3 No relationship

Yildiz et al. (2013) studied a sample of 30 firms in Turkey, and no relationship was found to exist between firm age and financial sustainability. Likewise, older and younger firms did not have any significant differences in terms of innovation. A different study of 25 insurance companies in Jordan showed no significant influence of age on ROA, and new and old firms were not significantly different in terms of their financial sustainability. In a third study, Noordin and Mohtar (2014) found no relationship between firm age and intellectual capital, innovation value production, and financial sustainability.

3.6.5 Conclusion

From the above studies, firm age can be seen as one of the factors that has an effect on financial sustainability, although there have been controversial results gathered in previous studies. The main goal of the present study is to delineate the relationship between a SACCO's age and its financial sustainability, and thereby determine the influence of age on the financial sustainability of SACCOs in Kenya.

In the next chapter, the research methodology adopted in this study is presented.

Chapter 4: Research Methodology

4.1 Introduction

In this chapter, the research methodology that was followed in the study is outlined. The conceptual framework, empirical specifications, data collection, empirical model, data analysis, and the reliability and validity of the data collection instruments are also discussed.

4.2 Research paradigm

When a system of laws is commonly accepted, it leads to a sanctioning of a particular way of thinking called a paradigm (Walliman, 2009). A paradigm can be defined as a set of assumptions about how things work; it is a broad view or perspective of something that is a shared understanding of reality. A paradigm can also be explained as a cluster of beliefs which dictates what should be done and how results should be interpreted (Bryman, 2008).

According to Schostak (2008), scientific research is based on basic assumptions, namely epistemology, ontology and axiology, with epistemology being the study of knowledge and foundations. According to Bryman (2008), epistemology is the accepted knowledge in a specific discipline; it is the branch of philosophy that studies the nature of knowledge, its presuppositions and extent of validity. Ontology, meanwhile, is a model of a particular field of knowledge (Schostak, 2008), and is the philosophical nature of being, becoming or existence (Bryman, 2008). Finally, axiology is the study of value (Schostak, 2008).

The application of epistemological considerations is in scientific or natural sciences. In social sciences, a position that affirms the importance of imitating natural sciences associated with epistemological considerations is called positivism (Bryman, 2008). Positivism has several principles, namely the principle of phenomenalism, which states that knowledge is confirmed by senses; the principle of deductivism, which

asserts that the purpose of theory is to generate hypotheses; and the principle of inductivism, which states that knowledge is arrived at through gathering that will provide a basis of law (Schostak, 2008). On the other hand a contrasting school of thought on the epistemology of positivism is called interpretivism or anti-positivism (Bryman, 2008).

According to Bryman (2008), ontological considerations are important in research as they deal with determining whether social entities should be considered as objective entities with reality external social factors, or whether to consider them as constructions built on the perceptions and actions of social actors. From the above considerations two issues arise: objectivism and obstructionism. Objectivism implies that social phenomena are an external fact beyond our reach or influence. An organisation is a tangible object with a mission, vision and procedures that exert pressure on individuals to conform to the requirements of the organisation (Bryman, 2008). Constructivism is an ontological position that states that social phenomena are accomplished continuously by social actors. Social phenomena are produced through social interaction and are in a constant state of revision (Bryman, 2008).

Creswell (2003) further introduced two aspects of epistemological considerations: post-positivism and pragmatism. Post-positivism, which implies thinking after positivism, involves studying causes that influence outcome, for example issues examined in experiments (Bryman, 2008). Post-positivism challenges the traditional notion of the absolute truth of knowledge, and is reductionistic in that it seeks to reduce ideas into smaller discrete sets from which hypotheses or research questions can be generated (Creswell, 2003). Creswell added that post-positivism operates under several assumptions, i.e. absolute truth cannot be found; through research, claims are made where others are abandoned; research seeks to develop relevant true statements; and researchers should always be objective and avoid bias in their conclusions (Cavanagh & Reynolds, 2009).

Pragmatism, meanwhile, states that knowledge arises out of action and situations, not antecedent conditions as is the case in post-positivism. Pragmatism therefore

provides researchers with a free choice of methods, techniques and procedures of research (Creswell, 2003).

Social science can also be classified as descriptive, exploratory or explanatory. Descriptive research aims at producing accurate events and situations, i.e. it is research based on an issue (Cavanagh & Reynolds, 2009). According to Kothari (2004), descriptive research is concerned with describing the attributes of a particular individual or group, and the frequency with which a variable occurs with respect to another variable is determined. Questionnaires, observation, interviewing and the examination of records are used as techniques of data collection in a descriptive research (Kothari, 2004). Exploratory research differs in that it aims to seek new insights into phenomena; it is an attempt to investigate a phenomenon without a clear anticipation or expectation (Torochim, 2006). The main emphasis is the discovery of ideas and insights, thus flexibility is required in order to consider different aspects of a problem (Kothari, 2004). Finally, explanatory research focuses on studying a situation for the purpose of explaining the relationship between variables. It identifies the causes and effects of social phenomena and shows the effect of one variable on another (Saunders et al., 2009).

The above mentioned philosophical assumptions lead to a distinction between quantitative and qualitative research. Quantitative research is the research strategy that emphasises quantification in the collection and analysis of data (Bryman, 2008); it is a methodology that deals with numbers, has a strict formal approach, and focuses on theory verification and testing (Saunders et al., 2009). It further incorporates practice and the norms of positivism, and accepts the view that social reality is an external objective reality (Bryman, 2008). The techniques applied produce numerical or quantifiable data (Mugenda & Mugenda, 2003).

Quantitative research entails a deductive approach, which refers to the theory that guides research (Bryman, 2008). In a quantitative approach, a researcher uses post-positivistic claims for developing knowledge, and research hypotheses or questions are developed and tested. Strategies of inquiry include experiments and surveys. Data are collected using predetermined instruments which will provide statistical data

for analysis (Creswell, 2003). Quantitative research is positivistic in nature (Walliman, 2009).

Qualitative research gives emphasis to words rather than quantification (Bryman, 2008). This approach rejects the epistemological consideration of positivism, and is of the view that social reality is a constantly shifting emergent property created by individuals. It is based on the inductive approach, which states that theory is an outcome of research (Bryman, 2008). Qualitative research includes research and techniques that do not produce numerical data. In most cases, data takes the form of words as opposed to numbers, and these words are grouped into categories (Mugenda & Mugenda, 2003). The researcher makes knowledge claims that are based on constructivist perceptions, and narrative phenomenologies, ethnographies and case studies are the main research strategies used. Open-ended data are collected with the main objective of developing themes from the data collected, and a theory or a pattern is developed (Creswell, 2003). Qualitative research is anti-positivistic and therefore interpretivistic (Walliman, 2009).

In the present study, the positivist quantitative research paradigm was used for the following reasons: firstly, deductive reasoning was used to develop the research hypotheses; secondly these hypotheses were tested with the intent of accepting or rejecting them; thirdly, the outcome of the research was examined and the findings can be used by other researchers in the future; and fourthly, questionnaires and record examination techniques were used in the data collection. The above reasons manifest a quantitative research approach (Bryman, 2008; Creswell, 2003; Kothari, 2004; Mugenda & Mugenda, 2003; Saunders et al., 2009; Sekaran, 2006; Walliman, 2009).

4.3 Research design

Research design is defined as a framework for collecting and analysing data (Bryman, 2008). A choice of research design shows the priorities being given to a range of dimensions in the research process (Sekaran, 2009). These dimensions include the causal relationship between variables, the generalisation of results

obtained from a sample, and understanding the behaviour of variables (Bryman, 2008; Mugenda & Mugenda, 2003).

Descriptive research design was applied in the present study, which involved the collection of longitudinal data for a period of seven years from 2008 to 2014. In this type of research design, quantitative descriptions of the trends, attitudes or opinions of a population are obtained by studying a scientifically selected sample (Creswell, 2003; Mugenda & Mugenda, 2003). Survey research design seeks to obtain information that describes an existing phenomenon to determine the current status of a population with respect to one or more variable (Mugenda & Mugenda, 2003); the goal is to offer a profile of the phenomena of interest from a specific perspective in order to test the hypotheses (Kombo & Tromp, 2006). A descriptive study attempts to describe or define a subject, often by creating a profile of a group of problems, people, or events, through the collection of data and the tabulation of the frequencies on research variables or their interactions (Cooper & Schindler, 2006).

The justification for using descriptive research design is that findings from the sample will be taken to represent the population (Creswell, 2003, Mugenda & Mugenda, 2003), it is economical in terms of the costs involved in the collection of a large amount of data (Creswell, 2003, Saunders, 1997), attributes of a large population can be identified from the sample (Creswell, 2003, Mugenda & Mugenda, 2003), and the design is applied where longitudinal data is to be collected (Kothari, 2004). The design is also applied where quantitative data are collected for analysis (Mugenda & Mugenda, 2003), which was the case of the current study.

4.4 Conceptual model

The purpose of this study was to determine the influence of financial outreach, financial regulation, corporate governance, size and age on the financial self-sufficiency of SACCOs in Kenya. The inter-relationship between the independent variables and the dependent variable is shown in Figure 1.

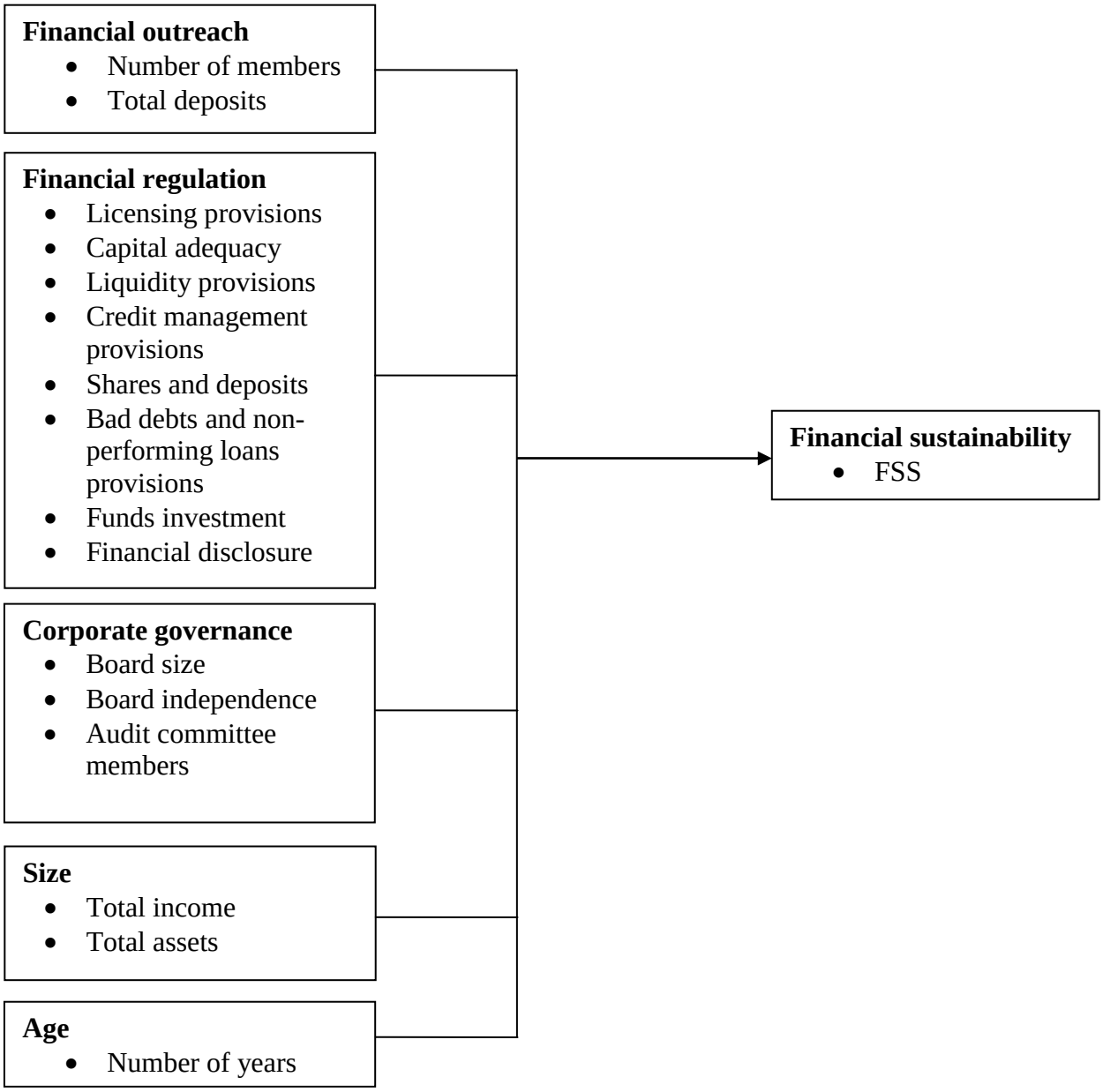

Figure 1: Conceptual model

Figure 1 shows the research model of the study, with the dependent variable being financial sustainability as measured by FSS. Financial outreach, financial regulation, corporate governance, size and age were the independent variables that were hypothesised to influence the financial sustainability of SACCOs in Kenya. Each of the independent factors had variables that were used to measure them, as indicated in Figure 1.

4.5 Population and sampling

In this section, the population of the study, sampling methods and sample size are discussed.

4.5.1 Population

A population is an entire group or events or objects with common attributes (Mugenda & Mugenda, 2003). The target population of this study comprised of all SACCOs registered in Kenya.

4.5.2 Sampling

Sampling is defined as the process undertaken to select a sufficient number of elements to be studied from the population (Mugenda & Mugenda, 2003; Sekaran, 2006). There are two main types of sampling designs: probability and non-probability sampling (Mugenda & Mugenda, 2003). Non-probability sampling was used in this study, more specifically, purposive sampling. This technique is applicable in exploratory research and conforms to the criteria set by the researcher. Purposive sampling was also more convenient for collecting primary data using questionnaires. Non-probability sampling design suffers from the fact that a study of a sample cannot be confidently generalised to the population, however (Mugenda & Mugenda, 2003; Sekaran, 2006).

SACCOs within the Mount Kenya region were chosen because it is the home of 61% of the total number of SACCOs in Kenya (Ministry of Industrialization and Enterprise Development, 2012). Data from 2008 to 2014 were collected, which was post the SACCO Act of 2008, thus the 285 SACCOs in the Mount Kenya region that were registered up to and including 2007 were considered in this study. This period was chosen in order to help determine the influence of financial regulation on FSS, one of the independent variables under study, as a seven-year period was considered appropriate since determination of a firm's financial sustainability is long term in nature. Furthermore, the seven-year period allowed for use of the GLS technique for

data analysis. Of the 285 SACCOs, only 166 had filed their financial statements (source of secondary data) with the MIED during the specified period, thus the final sample was comprised of these 166 SACCOs.

4.6 Data

Both primary and secondary data were collected for this study. Details of the data collected are discussed below.

4.6.1 Secondary data

Secondary data formed the bulk of the data for this study. Financial sustainability, the dependent variable, and financial outreach, governance, size and age, the independent variables, all comprised of secondary data. The data were sourced from the MIED, where all SACCOs in Kenya are required by law to submit their audited annual financial statements (Saleemi, 2008).

4.6.1.1 Reliability of secondary data

Reliability is the degree to which a research will give consistent results after repeated trials. Reliability is influenced by random error, which is the deviation from a true measurement as a result of factors not addressed by the researcher. There is an inverse relationship between reliability and random error; as the error increases, so reliability reduces (Mugenda & Mugenda, 2003). In order to increase reliability for the secondary data, the data were obtained from MIED where SACCOs file their audited financial statements. The financial statements must include profit and loss accounts and balance sheets. These financial statements are highly certified and regulated according to law, and were therefore considered reliable.

4.6.1.2 Validity of secondary data

Validity of a test refers to what the test measures and how well it does so (Majumdar, 1997). Mugenda and Mugenda (2003) defined validity as the degree to which the results obtained from the analysis of the data actually represents the phenomenon under study, while Bryman (2008) described it as being concerned with the integrity of conclusions that are generated from research. To ensure the validity of secondary data, Mugenda and Mugenda (2003) argued that a quantitative empirical study requires a long observation period and the inclusion of as many firms as possible in the study; a recommended period of at least five years is considered suitable. As the current study used a seven-year period and studied 166 SACCOs, data validity was achieved.

The data were also considered to satisfy external validity, as all the subjects from the population satisfied the study's criteria. Using the GLS analysis technique, it was possible to evaluate correlations between the independent variables and the FSS, the dependent variable, therefore the secondary data collected were internally consistent.

4.6.2 Primary data

Primary data were collected to test the influence of the financial regulation variable on FSS. According to Sekeran (2009), primary data are information that are gathered by means of observation and enquiry. Interaction between parties involved within a research area can be collected through different methods, which include interviews, surveys and questionnaires; however questionnaires were used to collect primary data in this study.

To ensure the validity of the data collected, both internal and external validity were tested. Internal validity refers to the ability to draw conclusions from a research study in a confident manner (Schram, 2005), and shows the causal relationship between the variables and the results obtained from the study. In the present study, internal validity was tested using Cronbach's alpha model. Furthermore, face validity was

achieved by use of the supervisor's suggestions on the content of the questionnaire, while content validity was ensured through a pilot study. External validity describes the possibility of generalising the findings (Gilbert, Ruigrok, & Wicki, 2008), in addition to how well or otherwise data and theories from one area apply to another (Gilbert et al., 2008).

4.6.2.1 Questionnaire development

A questionnaire is a written survey that is a chronology of questions, whether closed- or open-ended, that is designed to obtain information from subjects in a population (Fellegi, 2003; Krosnick & Presser, 2010; Yount, 2006). A questionnaire is best suited where population subjects are remotely located, and ensures high reliability of the data collected, less interference with the responses of the subjects, and convenience to subjects when giving responses (Glasow, 2005; Fox, Hunn & Mathers, 2007; Yount, 2006). Most surveys use questionnaires to collect data (Fellegi, 2003; Krosnick and Presser, 2010; Fox et al., 2007; Yount, 2006).

Pilot testing was used where questionnaires were issued to a small number of SACCOs in order to anticipate problems of understanding the questions or any other source of confusion by the respondents, so as to take corrective action. In the pilot study, questionnaires were issued to SACCOs in the Nakuru region. Cronbach's alpha was then computed and where the alpha values were less than 0.7, a reduction of the questions and reframing of others was done. Cronbach's alpha values for both the pilot and the actual study are presented in Chapter Nine.

In the present study, primary data were sourced from the sampled SACCOs using questionnaires that were administered to the management team. The questionnaire was developed based on the provisions of SACCO regulations, as contained in the SACCO Act of 2008. Questionnaires were collected after three days and the primary data collected was time invariant.

4.6.2.2 Reliability of primary data

To ensure reliability in the present study, an internal consistency technique was applied. Internal consistency of data is determined from scores obtained from a single test, which is then correlated with scores from other items in the instrument (Mugenda & Mugenda, 2003). Cronbach's alpha was computed to determine how the items correlated among themselves and to calculate the internal consistency (reliability) of the measuring scales. Cronbach's alpha indicates the extent to which a set of items can be used to measure a single variable (Malhotra, 1999). Its application results in a more conservative estimate of reliability (Mugenda & Mugenda, 2003). Cronbach's alpha coefficient ranges from 0 to 1; a high coefficient means that items correlate highly among themselves, implying that there is consistency among the items measuring a given concept (Mugenda & Mugenda, 2003). A minimum Cronbach's alpha coefficient of 0.7 is acceptable, which indicates that the score obtained from the measuring instrument is a 70% true reflection of the underlying characteristic being measured (Hair, Money, Samouel, & Page, 2007).

4.6.2.3 Validity of primary data

The validity of the primary data was also tested. The different types of validity are face and content validity (Bryman, 2008, Mugenda & Mugenda, 2003). Face validity is the measure that reflects the content of the concept in question. In this type of validity, experts in a given area are used as judges to determine whether the measure reflects the concept in question, i.e. it is an intuitive process (Bryman, 2008). In the present study, the research supervisor's advice and suggestions were used to ensure face validity.

Content validity, on the other hand, measures the degree to which data collected using a given instrument represents the content of a given phenomenon. The researcher should specify the indicators relevant to the concept under consideration. Content validity should contain all possible items that are to be used in measuring a stated concept (Mugenda & Mugenda, 2003).

4.7 Measurement of study variables

The measurements of the study variables, both dependent and independent are presented in Table 2.

Table 2: Measurements of the Study Variables

Variable	Constructs	Measurement
1. Financial outreach	• Number of members	Actual number of individuals registered in a SACCO.
	• Total deposits	Amount of savings deposited with a SACCO expressed in Kenya shillings.
2. Financial regulation	• Licensing provisions • Capital adequacy provisions • Liquidity provisions • Shares and deposits • Credit management • Bad debts provisions • Funds investment • Financial disclosure	Likert scale was applied to measure these provisions
3. SACCO corporate governance	• Board size	The total number of board of directors
	• Board independence	The number of the non-executive/independent directors in the board.
	• Audit committee	The number of audit committee members.
4. SACCO size	• Total income	Total amount of money received by the SACCO expressed in Kenya shillings.
	• Total assets	Items owned by a SACCO both current and non-current expressed in Kenya shillings
5. SACCO age	• Number of years	Number of years of a SACCO since inception(registration)

6. Financial sustainability	• Financial self-sufficiency (FSS) ratio	A ratio of internally generated income by a SACCO divided by administration expenses.	

4.8 Summary of study variables

The summary of the study variables, the parameters used in measuring each variable, as well as the measurement level, is given in Table 3**.**

Table 3: Summary of Study Variables

Variable	Parameter	Measurement level	Time variant/invariant	Variable Abbreviation
Financial outreach	a) Number of members	Ratio scale	Time variant	NUM MEM
	b) Deposits	Ratio scale	Time variant	TOT DEP
SACCO corporate governance	a) Board size	Ratio scale	Time invariant	BOD SIZ
	b) SACCO independence	Ratio scale	Time invariant	BOD IND
	c) SACCO audit	Ratio scale	Time invariant	AUD COM
SACCO size	a) Total assets	Ratio scale	Time variant	TOT ASST
	b) Total income	Ratio scale	Time variant	TOT INC
SACCO age	Number of years	Ratio scale	Time variant	SAC AGE
Financial regulation	a) Licensing provisions	Interval scale	Time invariant	LIC PRO
	b) Capital adequacy provisions	Interval scale	Time invariant	CAP ADE
	c) Liquidity provisions	Interval scale	Time invariant	LIQ PRO
	d) Shares and deposits	Interval scale	Time invariant	SHA DEP
				CRE MAN
				BAD DEB
				FUD INV
				FIN DISC

	e) Credit management	Interval scale	Time invariant	
	f) Bad debts provisions	Interval scale	Time invariant	
	g) Funds investments	Interval scale	Time invariant	
	h) Financial disclosure	Interval scale	Time invariant	
		Interval scale	Time invariant	
Financial sustainability	FSS ratio	Ordinal scale	Time variant	FSS

4.9 Data analysis

The GLS technique was used in the data analysis, as this technique is best suited to test hypotheses where a prediction is to be made for two or more variables (Saleemi, 2008). The technique is also applied when a researcher wants to explain the relationship between the independent variables and the dependent variable. This technique was considered appropriate firstly as the relationships between financial outreach, financial regulation, corporate governance, size; age and financial sustainability were to be determined. In addition, regression analysis requires a large sample size, which was the case with the current study. Thirdly, a final model to predict FSS was developed, and finally, all observations for each SACCO were independent of each other, thus the same probability was maintained for all the independent variables. The collected data were filtered to remove missing values, which resulted in a reduction in data points. As such, an unbalanced design was applied. SPSS software version 22 and R- software were used for the data analysis.

Random effects, which should be applied in a number of scenarios, were used in the study as opposed to fixed effects for a number of reasons. First, random effects are able to capture the effects of both time variant variables as well as time invariant ones (Torres-Reyna, 2007; Williams, 2015). In the current study, some of the variables were time variant while others were time invariant, as shown in Table 2.

Second, where the objective of the study was to look at the underlying population represented by the sample, then random effects were used (Searle, Casella & McCulloch, 1992). Third, random effects are used when differences across entities have influence on the dependent variable (Torres-Reyna, 2007). All the SACCOs had distinct differences, for example size and age, which had an influence on the FSS.

GLS analysis operates under several assumptions (Saleemi, 2008). First, the data should not violate the normality test; second, the model should be fitted correctly; third, there should be no multi-collinearity between the independent variables; fourth, heteroscedasticity should not exist in the data set; and finally, a large sample is required. These assumptions were tested and where they were not violated, OLS was used, however where the assumptions were violated, the GLS technique was applied. The results for the regression assumption tests are presented in Chapter Five.

The null hypothesis for each variable not exerting any influence on FSS was tested using the models discussed in the following section.

4.10 Empirical model

Each independent variable under study was linked to the dependent variable (FSS) to determine the influence of each variable on the financial sustainability of SACCOs independently. Each independent variable was hypothesised to have or not to have influence on FSS while controlling the influence of the other variables. This was in line with the set objectives for this study of determining the influence of each variable on FSS. Thereafter, the influence of all the variables combined was determined. The following GLS models were developed for each independent variable and the combined variables in the study.

4.10.1 Financial outreach

Financial outreach was measured using number of members and total deposits. The regression model for financial outreach, as measured by both total members and total deposits, is presented as follows:

$Y= B_0+B_lNUM\ MEM+ B_2TOT\ DEP +ei$

Where:

β_0 is the intercept i.e. $Y= \beta_0$ when $X_{1,2,\ 3,\ 4,\ldots\ldots\ k}= 0$

$\beta_1, \beta_2, \beta_3, \beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of each measure of the independent variable.

ei = Error term

4.10.2 Financial regulation

The influence of financial regulation provisions was tested on FSS. The regression model used is presented as follows:

$Y= B_0 +B_l\ LIC\ PRO + B_2CAP\ ADE+ B_3LIC\ PRO+B_4\ SHA\ DEP+ B_5CRE\ MAN + B_6\ BAD\ DEB + B_7\ FUND\ INV + B_8\ FIN\ DISC +ei$

Where:

β_0 is the intercept i.e. $Y= \beta_0$ when $X_{1,2,\ 3,\ 4,\ldots\ldots\ k}= 0$

$\beta_1, \beta_2, \beta_3, \beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of each measure of the independent variable.

ei = Error term

4.10.3 Corporate governance

SACCO governance was measured by board size, board independence and audit committee. The regression model for these measures is presented below.

$Y= B_0 + B_l$ BOD SIZ + B_2BOD IND+ B_3AUD COM +*ei*

Where:

β_0 is the intercept i.e. $Y= \beta_0$ when $X_{1,2,3,4,\ldots k}= 0$

$\beta_1, \beta_2, \beta_3, \beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of each measure of the independent variable.

ei = Error term

4.10.4 Size

Total assets and total income were the two measures of a SACCO's size adopted in this study. The regression model is presented below.

$Y = \beta_0 + \beta_1$ TOT ASST + B2 TOT INC + *ei*

Where:

β_0 is the intercept i.e. $Y= \beta_0$ when $X_{1,2,3,4,\ldots k}= 0$

$\beta_1, \beta_2, \beta_3, \beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of each measure of the independent variable.

ei = Error term

4.10.5 Age

The model for SACCO age is presented as follows:

$Y = \beta_0 + \beta_1 SAC\ AGE$

Where:

β_0 is the intercept i.e. $Y = \beta_0$ when $X_{1,2,3,4,\ldots\ldots k} = 0$

$\beta_1, \beta_2, \beta_3, \beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of the measure of the independent variable.

ei = Error term

4.10.6 Combined variable model of the study

The combined variable model linking all the different measures of the independent variables used in this study is presented as follows:

$Y = \beta_0 + \beta_1 NUM\ MEM + \beta_2 TOT\ DEP + \beta_3 LIC\ PRO + \beta_4 CAP\ ADE + \beta_5 LIQ\ PRO + \beta_6 SHA\ DEP + \beta_7 CRED\ MAN + \beta_8 BAD\ DEB + \beta_9 FUN\ INV + \beta_{10} FIN\ DISC + \beta_{11} BOD\ SIZ\ \beta_{12} BOD\ IND + \beta_{13} AUD\ COM + \beta_{14} TOT\ INC + \beta_{15} TOT\ ASST\ \beta_{16} SAC\ AGE$

Where:

β_0 is the intercept i.e. Y= β_0 when $X_{1,2,3,4,\ldots.k}$= 0

β_1, β_2, β_3, $\beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of each independent variable.

ei = Error term

4.11 Ethical considerations

Ethics refers to the branch of philosophy which deals with one's conduct and serves as a guide to one's behaviour (Mugenda & Mugenda, 2003), while ethics in business research refers to a code of conduct or societal norm of behaviour while conducting research. Ethics in research aims at safeguarding the interests of all concerned in the research (Sekaran, 2009). In the current study, all respondents were briefed about the purpose of the study and were requested to give as accurate information as possible. The respondents were assured that the information given would be treated as confidential. Authority to collect both primary and secondary data was sought and granted by MIED. Correspondence to this effect is appended to this thesis.

4.12 Conclusion

This chapter has outlined the research methodology adopted in the study. The methodology adopted aided in achieving the goal of this study, which was the assessment of the financial sustainability of SACCOs in Kenya.

In the next chapter, the findings of the study are presented.

Chapter 5: Findings of the Study

5.1 Introduction

In this chapter, the findings of the study are presented. The main objective of the study was to assess the influence of the measures of financial outreach, financial regulation, corporate governance, size and age on the financial sustainability of SACCOs in Kenya, both individually and simultaneously. To achieve the objective of this study, the following hypotheses were formulated:

$H_0$1: Financial outreach exerts no influence on the financial sustainability of SACCOs.

$H_1$1 Financial outreach exerts an influence on the financial sustainability of SACCOs.

$H_0$2: Financial regulation exerts no influence on the financial sustainability of SACCOs.

$H_1$2: Financial regulation exerts an influence on the financial sustainability of SACCOs.

$H_0$3: Corporate governance exerts no influence on the financial sustainability of SACCOs.

$H_1$3: Corporate governance exerts an influence on the financial sustainability of SACCOs.

$H_0$4: Size exerts no influence on the financial sustainability of SACCOs.

$H_1$4: Size exerts an influence on the financial sustainability of SACCOs.

$H_0$5: Age exerts no influence on the financial sustainability of SACCOs.

$H_1$5: Age exerts an influence on the financial sustainability of SACCOs.

$H_0$6: The combined factors exert no influence on the financial sustainability of SACCOs.

$H_1$6: The combined factors exert an influence on the financial sustainability of SACCOs.

5.2 Test for autocorrelation for study variables

The data used for analysis were longitudinal in nature. Autocorrelation represents the correlations within variables in a time series data. Future values are reliably determined probabilistically from past values; a positive autocorrelation indicates persistence of the data collected (Chatfield, 2004). A test of autocorrelation was undertaken and the results are presented below.

5.2.1 Number of members

The autocorrelation results for the number of members are presented in Table 4.

Table 4: Autocorrelation Results for Number of Members

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	Df	Sig.[b]
1	.037	.031	1.411	1	.235
2	.162	.031	28.311	2	.000
3	.082	.031	35.217	3	.000
4	.026	.031	35.889	4	.000
5	.010	.031	35.994	5	.000
6	.003	.031	36.001	6	.000
7	.020	.031	36.410	7	.000
8	.003	.031	36.420	8	.000
9	.000	.031	36.421	9	.000
10	.021	.031	36.858	10	.000
11	-.022	.031	37.342	11	.000
12	-.032	.031	38.413	12	.000
13	.003	.031	38.423	13	.000
14	-.024	.031	39.018	14	.000
15	.018	.031	39.341	15	.001
16	-.036	.031	40.711	16	.001

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 4 shows the autocorrelation results for the number of members. The results indicate that all the 16 lags are important in contributing to the number of members, as all the p-values are less than 0.05. The results are significant at a 5% significance level.

The box plot for autocorrelation results for number of members is presented in Figure 2.

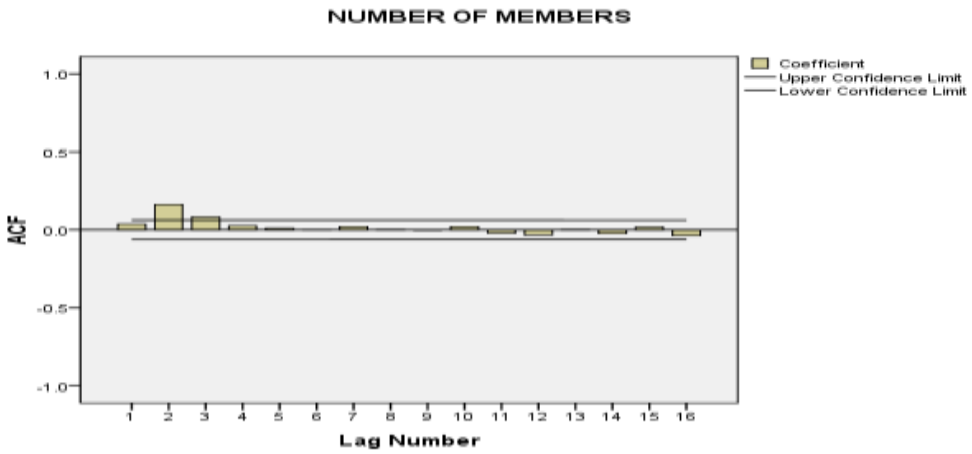

Figure 2. Autocorrelation results for number of members.

As the autocorrelation coefficients for the number of members were low (close to zero), there was low internal correlation within the data set of number of members.

5.2.2 Total deposits

A test for autocorrelation for the number of deposits was undertaken. The autocorrelation results are presented in Table 5.

Table 5: Autocorrelation Results for Total Deposits

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	Df	Sig.[b]
1	.007	.031	.054	1	.816
2	.082	.031	6.926	2	.031
3	.029	.031	7.795	3	.050
4	.012	.031	7.941	4	.094
5	-.006	.031	7.981	5	.157
6	-.010	.031	8.088	6	.232
7	.009	.031	8.166	7	.318
8	-.011	.031	8.298	8	.405
9	-.022	.031	8.787	9	.457
10	.037	.031	10.175	10	.425
11	-.015	.031	10.400	11	.495
12	-.014	.031	10.597	12	.564
13	-.019	.031	10.985	13	.612
14	-.015	.031	11.212	14	.669
15	-.012	.031	11.357	15	.727
16	.005	.031	11.384	16	.785

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 5 shows the autocorrelation results for total deposits. The results indicate that only three out of the 16 lags are important in contributing to the total deposits, since all the p-values are less than 0.05. The rest of the lags have a p-value greater than 0.05, therefore they are insignificant. The results are significant at a 5% significance level.

The box plot for autocorrelation results for deposits is presented in Figure 3.

The results are presented in the form of a box plot in Figure 3.

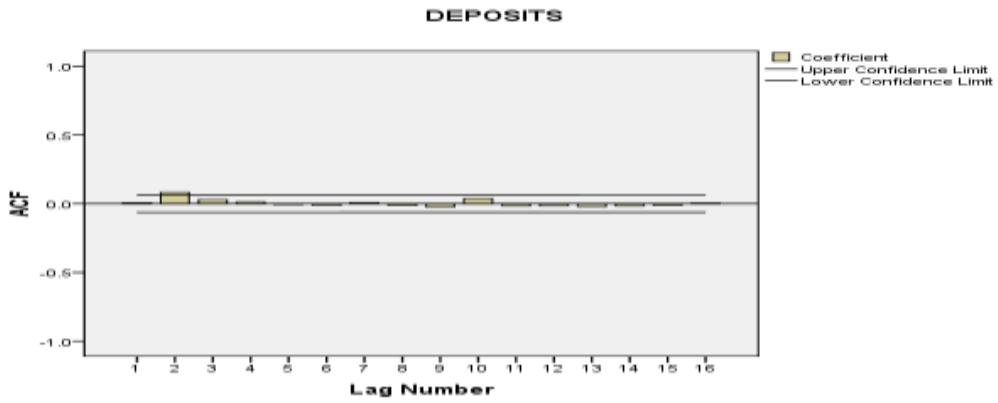

Figure 3. Autocorrelation results for total deposits.

Figure 3 shows the autocorrelation results for total deposits. The autocorrelation values are close to zero, meaning that there is no correlation within the data set for total deposits.

5.2.3 Board size

A test of autocorrelation for board size was carried out and the results are presented in Table 6.

Table 6: Autocorrelation Results for Board Size

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	Df	Sig.[b]
1	.021	.031	.439	1	.508
2	.143	.031	21.483	2	.000
3	.058	.031	24.927	3	.000
4	.153	.031	48.967	4	.000
5	.079	.031	55.369	5	.000
6	.014	.031	55.583	6	.000
7	-.017	.031	55.877	7	.000
8	.107	.031	67.748	8	.000
9	.051	.031	70.465	9	.000
10	.051	.031	73.179	10	.000
11	.049	.031	75.639	11	.000
12	-.061	.031	79.430	12	.000
13	.117	.031	93.547	13	.000
14	.097	.031	103.303	14	.000
15	.058	.031	106.787	15	.000
16	-.023	.031	107.345	16	.000

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 6 shows the autocorrelation results for board size. The results indicate that all the 16 lags are important in contributing to the board size since all the p-values are less than 0.05. The results are significant at a 5% significance level.

The box plot for autocorrelation results for board size is presented in Figure 4.

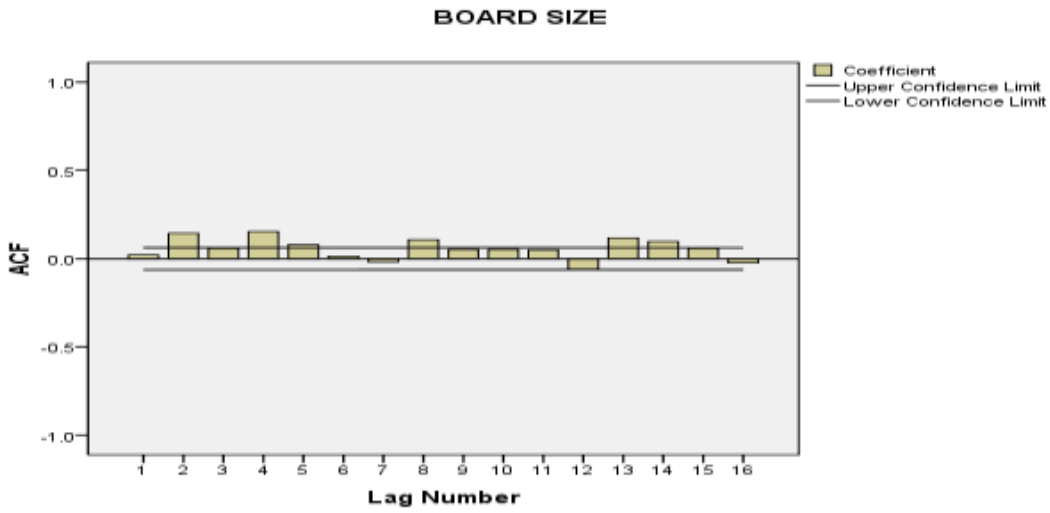

Figure 4. Autocorrelation results for board size.

Figure 4 shows the autocorrelation results for board size. The autocorrelation values are close to zero, meaning that there is a low correlation within the data set for board size.

5.2.4 Board independence

The results for board independence are presented in Table 7.

Table 7: Autocorrelation for Board Independence

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	df	Sig.[b]
1	.019	.031	.385	1	.535
2	.158	.031	26.031	2	.000
3	.064	.031	30.263	3	.000
4	.161	.031	56.763	4	.000
5	.075	.031	62.501	5	.000
6	.018	.031	62.816	6	.000
7	-.027	.031	63.555	7	.000
8	.100	.031	73.824	8	.000
9	.053	.031	76.696	9	.000
10	.044	.031	78.705	10	.000
11	.046	.031	80.941	11	.000
12	-.057	.031	84.271	12	.000
13	.110	.031	96.810	13	.000
14	.093	.031	105.760	14	.000
15	.056	.031	109.000	15	.000
16	-.025	.031	109.638	16	.000

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 7 shows the autocorrelation results for board independence. The results indicate that all the 16 lags are important in contributing to board independence, as all the p-values are less than 0.05. The results are significant at a 5% significance level.

The results are presented in a box plot in Figure 5.

Figure 5 shows the autocorrelation results for board independence. The autocorrelation values are close to zero meaning that there is no correlation within

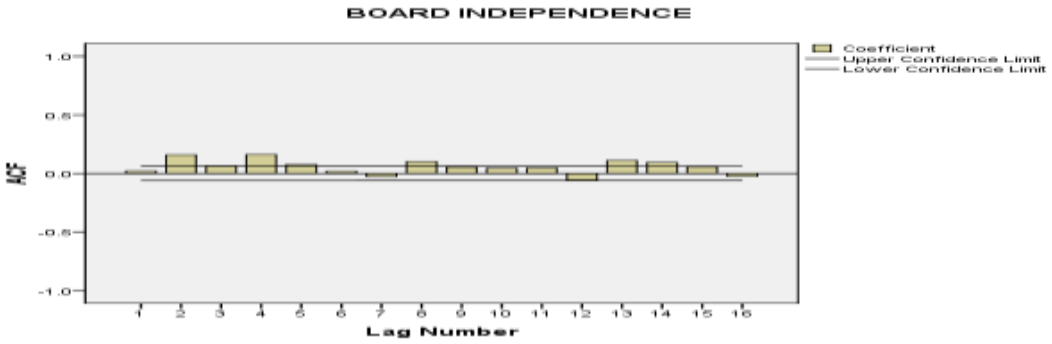

Figure 5. Autocorrelation results for board independence.

the data set for board independence.

5.2.5 Audit committee

The autocorrelation test for audit committee was undertaken and the results are presented in Table 8.

Table 8: Autocorrelation Results for Audit Committee

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	Df	Sig.[b]
1	.021	.031	.430	1	.512
2	.092	.031	9.178	2	.010
3	.094	.031	18.236	3	.000
4	-.009	.031	18.325	4	.001
5	.068	.031	23.099	5	.000
6	.149	.031	45.840	6	.000
7	.005	.031	45.869	7	.000
8	.028	.031	46.705	8	.000
9	.089	.031	54.812	9	.000
10	.031	.031	55.806	10	.000
11	.180	.031	89.302	11	.000
12	.053	.031	92.174	12	.000
13	.017	.031	92.483	13	.000
14	.017	.031	92.782	14	.000
15	.114	.031	106.309	15	.000
16	.056	.031	109.558	16	.000

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 8 shows the autocorrelation results for audit committee. The results indicate that all the 16 lags are important in contributing to the audit committee, since all the p-values are less than 0.05. The results are significant at a 5% significance level.

The results are presented in a box plot in Figure 6.

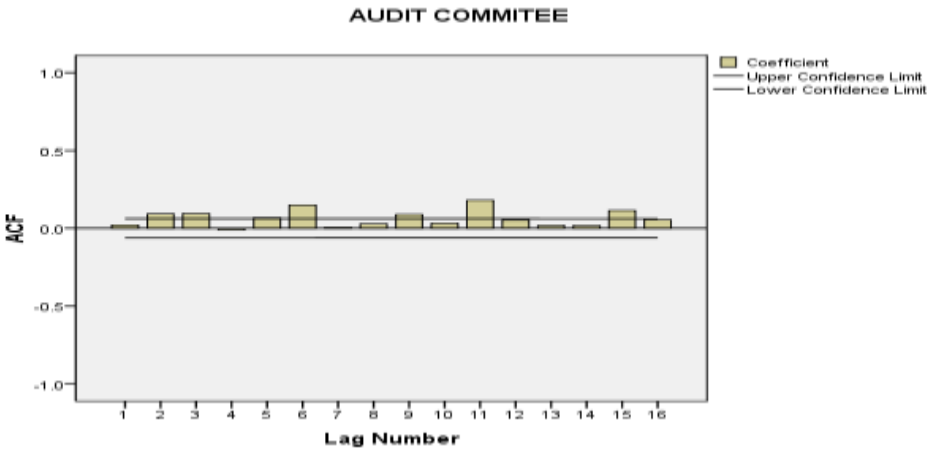

Figure 6. Autocorrelation results for audit committee.

Figure 6 shows the autocorrelation results for audit committee. The autocorrelation values are close to zero, meaning that there is no correlation within the data set for audit committee.

5.2.6 Total assets

The autocorrelation results for total assets are presented in Table 9.

Table 9: Autocorrelation Results for Total Assets

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	Df	Sig.[b]
1	.047	.031	2.244	1	.134
2	.193	.031	40.324	2	.000
3	.068	.031	45.023	3	.000
4	.052	.031	47.833	4	.000
5	.016	.031	48.098	5	.000
6	-.013	.031	48.260	6	.000
7	.019	.031	48.639	7	.000
8	-.033	.031	49.729	8	.000
9	.016	.031	49.998	9	.000
10	.003	.031	50.009	10	.000
11	-.030	.031	50.919	11	.000
12	-.027	.031	51.670	12	.000
13	-.032	.031	52.730	13	.000
14	-.030	.031	53.668	14	.000
15	-.012	.031	53.812	15	.000
16	.018	.031	54.158	16	.000

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 9 shows the autocorrelation results for audit committee. The results indicate that all the 16 lags are important in contributing to the total assets since all the p-values are less than 0.05. The results are significant at a 5% significance level.

The results are presented in a box plot in Figure 7.

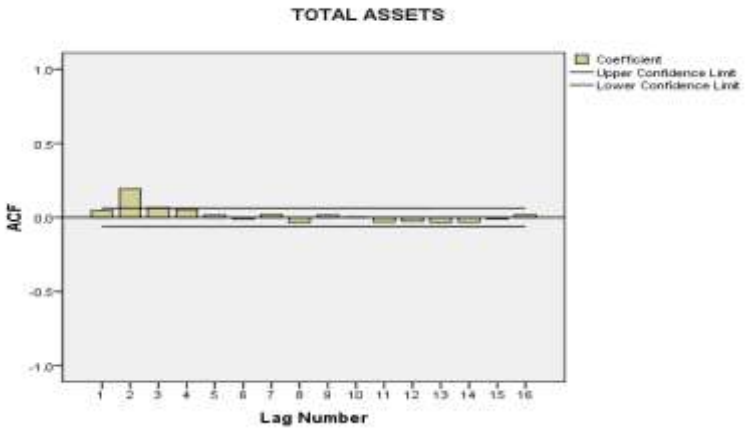

Figure 7. Autocorrelation results for total assets.

Figure 7 shows the autocorrelation results for total assets. The autocorrelation values are close to zero, meaning that there is no correlation within the data set for total assets.

5.2.7 Total income

The results for total income are shown in Table 10.

Table 10: Autocorrelation Results for Total Income

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	Df	Sig.[b]
1	.000	.031	.001	1	.977
2	.005	.031	.023	2	.989
3	.003	.031	.030	3	.999
4	-.002	.031	.033	4	1.000
5	-.004	.031	.046	5	1.000
6	-.001	.031	.047	6	1.000
7	.001	.031	.048	7	1.000
8	.000	.031	.048	8	1.000
9	-.002	.031	.051	9	1.000
10	.010	.031	.149	10	1.000
11	.002	.031	.152	11	1.000
12	-.003	.031	.159	12	1.000
13	-.002	.031	.165	13	1.000
14	-.002	.031	.171	14	1.000
15	-.002	.031	.175	15	1.000
16	-.001	.031	.177	16	1.000

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 10 shows the autocorrelation results for total income. The results indicate that all the 16 lags are insignificant in contributing to the total income, since all the p-values are greater than 0.05. The results are significant at a 5% significance level.

The results are presented in a box plot in Figure 8.

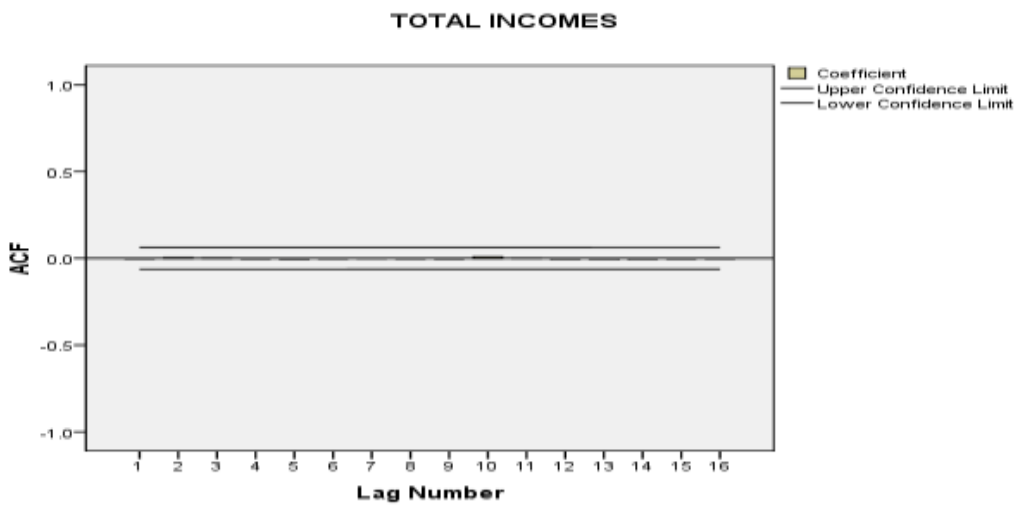

Figure 8. Autocorrelation results for total income.

Figure 8 shows the autocorrelation results for total income. The autocorrelation values equal zero, meaning that there is no correlation within the data set for total assets.

5.2.8 Age

The autocorrelation results for SACCO age are presented in Table 11.

Table 11: Autocorrelation Results for Age

			Box-Ljung Statistic		
Lag	Autocorrelation	Std. Error[a]	Value	Df	Sig.[b]
1	.535	.031	292.979	1	.000
2	.501	.031	549.873	2	.000
3	.458	.031	764.847	3	.000
4	.415	.031	941.665	4	.000
5	.387	.031	1.096E3	5	.000
6	.311	.031	1.196E3	6	.000
7	.303	.031	1.290E3	7	.000
8	.302	.031	1.384E3	8	.000
9	.268	.031	1.459E3	9	.000
10	.230	.031	1.513E3	10	.000
11	.245	.031	1.575E3	11	.000
12	.241	.031	1.635E3	12	.000
13	.229	.031	1.689E3	13	.000
14	.162	.031	1.717E3	14	.000
15	.156	.031	1.742E3	15	.000
16	.159	.031	1.768E3	16	.000

[a] The underlying process assumed is independence (white noise). [b] Based on the asymptotic chi-square approximation.

Table 11 shows the autocorrelation results for age of SACCOs. The results indicate that all the 16 lags are important in contributing to age, since all the p-values are less than 0.05. The results are significant at a 5% significance level.

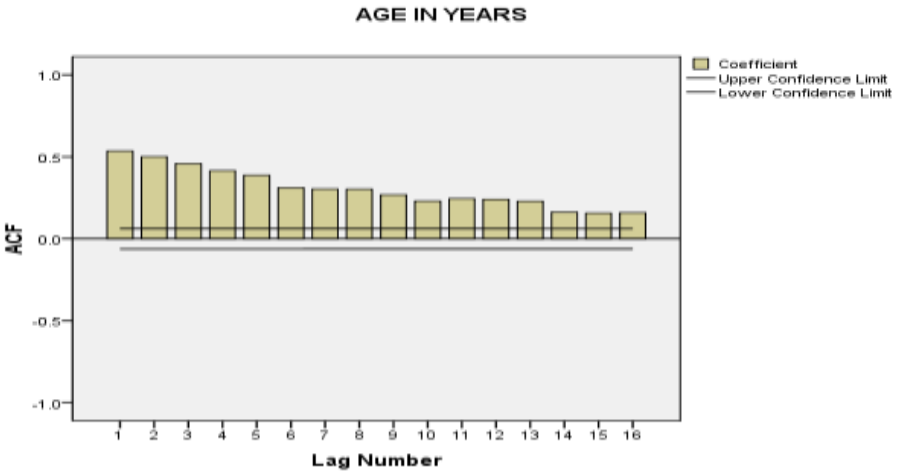

Figure 9. Autocorrelation results for SACCO age

Figure 9 shows a fair autocorrelation for SACCO age.

5.3 FOSA registration

SACCO managers were asked to indicate whether their SACCOs were registered with SASRA in order to offer FOSA services. The results obtained are shown in Figure 10.

Figure 10. FOSA registration

Figure 10 depicts the results obtained from the respondents regarding whether a SACCO is registered to offer FOSA or not. Most (86%) of the sampled SACCOs were not registered with SASRA, and were therefore not offering FOSA services. The results indicate that the majority of SACCOs in Kenya are yet to start offering FOSA services.

5.4 Financial sustainability status of SACCOs

Secondary data were collected for FSS - the dependent variable. The results of the financial sustainability status of SACCOs are presented in Figure 11.

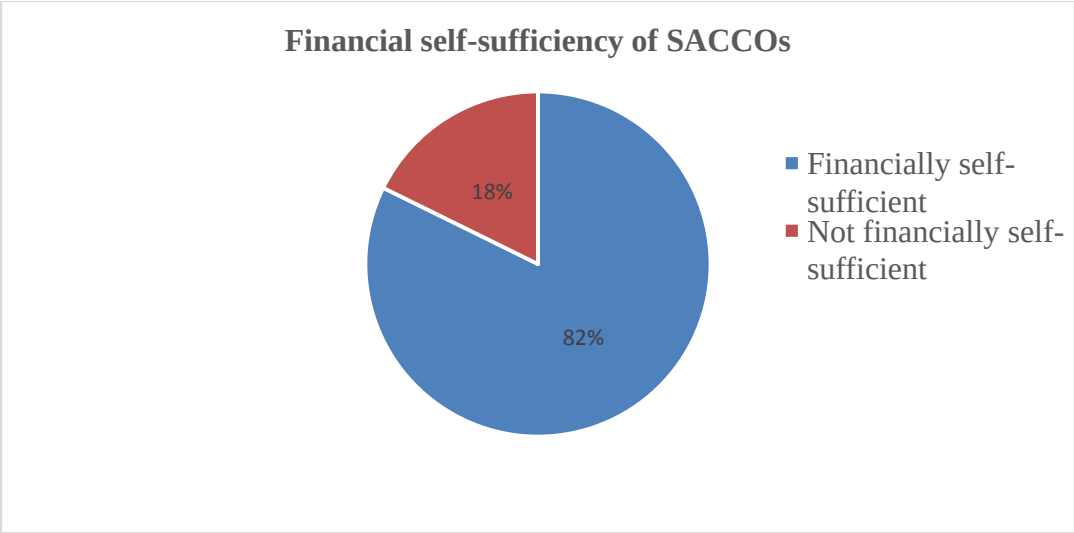

Figure 11. Financial sustainability status of SACCOs.

Figure 11 shows that of the total SACCOs sampled, 82% had FSS greater than one, while 18% of the SACCOs had FSS less than one. This indicates that most SACCOs are financially sustainable. The mean FSS for all the years was 7.9, further indicating that the SACCOs under study were financially sustainable, as measured by FSS.

5.5 Descriptive statistics for financial outreach

The results for number of members and total deposits, i.e. the measures of financial outreach, are presented in this section. The distribution of SACCO membership is presented in Figure 12.

Figure 12. SACCO membership.

Figure 12 shows the distribution of members for all the SACCOs sampled. The majority of the SACCOs (100 out of 160) had a membership of more than 100. Only a few (35 out of 166) of the SACCOs had their membership at less than 50, while 31 SACCOs had a membership of between 51 and 100 members.

The distribution of total deposits received by the SACCOS under study is presented in Figure 13.

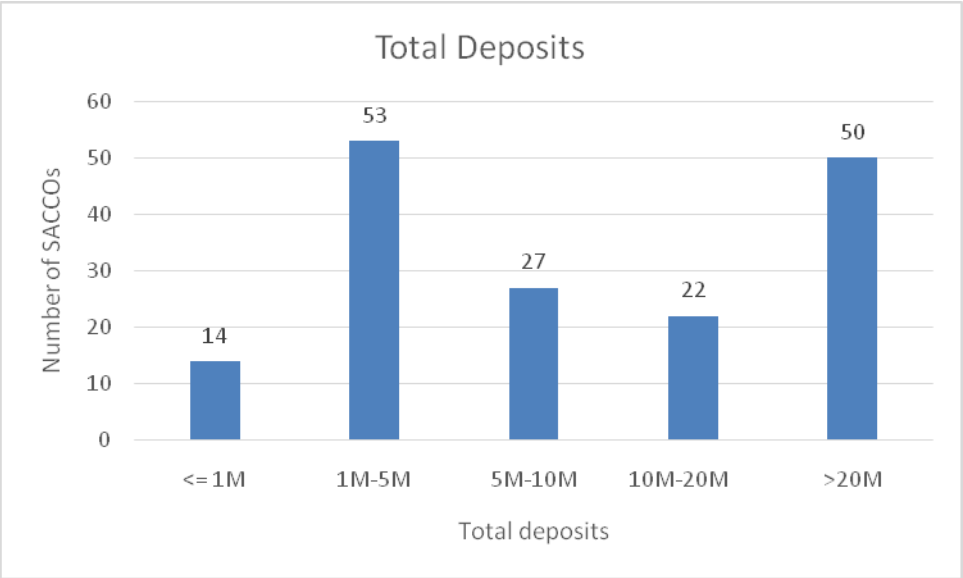

Figure 13. Distribution of Total deposits for SACCOs.

Figure 13 shows the distribution of the total deposits for the SACCOs under study. Of the total SACCOs, 14 had total deposits of less than KES 1 million, 53 had deposits ranging between KES 1 million and 5 million, 27 had deposits in the range of KES 5 to 10 million, 22 had deposits of between KES 5 to 10 million, and 50 had deposits of KES 20 million or over. The majority (99 out of 166) of the SACCOs had a total deposit base of KES 5 million and over, representing approximately 60% of the total SACCOs sampled.

The association between NUM MEM and TOT DEP is shown in Table 12.

Table 12: Association between Number of Members and Total Deposits

Membership Size1	DepositSize1					
	<= 1M	1M-5M	5M-10M	10M-20M	>20M	Total
<= 50	5	20	4	1	5	35
51-100	5	14	7	4	1	31
101-500	3	15	15	10	17	60
> 500	1	4	1	7	27	40
Total	14	53	27	22	50	166

Note: Pearson chi2(12) = 63.3464 Pr = 0.000

Table 12 shows the results of the association between NUM MEM and TOT DEP. The result of the Chi-Square test shows a significantly strong (Pr=0.000). The bigger the SACCO membership, the larger the level of total deposits.

The effect of this strong association between NUM MEM and TOT DEP is presented in Table 13.

Table 13: Effect of Number of Members and Total Deposits on FSS

	Means of FSS					
	TOT DEP					
Membership Size1	<= 1M	1M-5M	5M-10M	10M-20M	>20M	Total
<= 50	8.8222155	6.1305053	16.46475	39.221305	14.894097	10.455866
51-100	2.9054919	7.9573376	6.9680057	4.8828873	28.226814	7.3308832
101-500	12.157706	4.9202098	6.5759281	7.9497711	10.93203	8.0751864
> 500	2.5085747	4.2190136	8.7810255	4.3491112	6.3341339	5.7858463
Total	7.5158817	6.1276031	7.7817702	9.7108037	8.9920306	7.8262511

The results in Table 13 show that as a general trend, as the membership increases, the value of FSS decreases; the highest FSS was experienced when the membership size was less than 50. However, an increase in total deposits resulted in an increase in FSS, which was at its highest point when the total deposits base was KES 10–20 million.

5.6 Descriptive statistics for financial regulation

The results of the descriptive statistics for financial regulation measures are discussed below.

Out of the total questionnaires issued, 84% were received, i.e. there was a 16% non-response rate. It was therefore important to undertake a non-response bias test to determine the effect of the responses not received on the financial regulation data collected. The non-response bias test results are presented in Table 14.

Table 14: Non-response Bias Test for Financial Regulation Data

Variable group		t	df	Sig.	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Q2	LIC PRO	.880	137	.381	.18473	.20999	-.23051	.59998
Q3	CAP ADE	-1.110	137	.269	-.19417	.17492	-.54006	.15172
Q4	LIQ PRO	-1.078	137	.283	-.17389	.16127	-.49279	.14500
Q5	SHA ADE	.708	137	.480	.14638	.20667	-.26230	.55505
Q6	CRED MAN	1.151	137	.252	.21755	.18898	-.15616	.59125
Q7	BAD DEB	-2.291	137	.023	-.35445	.15470	-.66035	-.04855
Q8	FUN INV	-.015	137	.988	-.00248	.16699	-.33269	.32772
Q9	FIN DISC	-1.390	137	.167	-.14022	.10087	-.33969	.05924

Table 14 shows the descriptive statistics for the financial regulation constructs. The data were divided into two, the respondents in agreement and those in disagreement, then their means were compared, yielding Table 14. Only the bad debts construct had a significant variation (0.023) between the two groups, as attested by the highest mean difference of -0.35445. This meant that the study was 95% confident that all constructs but provision for bad debts were not different within the SACCOs. When all the variables were averaged to one variable called financial regulation, there was no significant difference between the two groups (as shown in Table 14). This gives an indication that with or without the non-responses, the results would still be the same.

The overall opinion of the respondents on financial regulation constructs is presented in Figure 14.

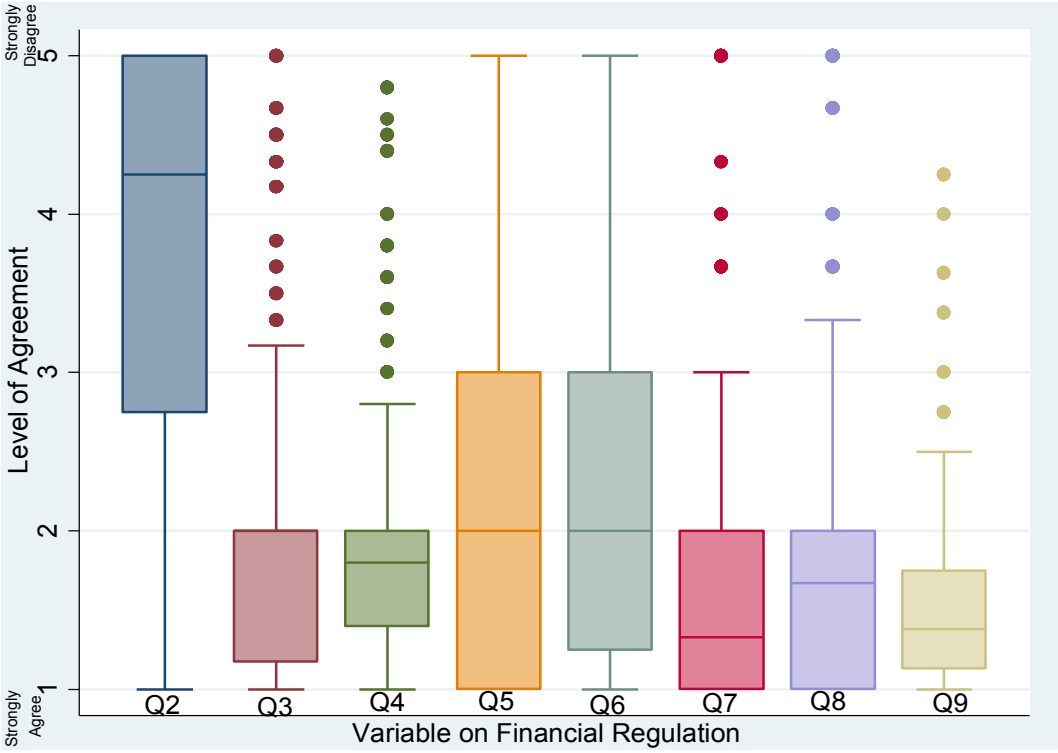

Figure 14. Overall opinions of respondents on FSS.

Figure 14 shows the opinions of the respondents regarding the different constructs of financial regulation. Most of the respondents (>75% in the third quartile of the box plot) agreed that the financial regulations had a positive impact on the financial sustainability of SACCOs. This proportion of respondents agreed to the stated financial regulation provisions, however there were a few (<25%) who were dissatisfied with the regulations conditions.

The mean and the standard deviation of the financial regulation constructs are presented in Table 15.

Table 15: Mean and Standard Deviation for Financial Regulation Constructs

Variable	Obs	Mean	Std. Dev.	Min	Max
Q2	974	3.836242	1.233787	1	5
Q3	974	2.008532	1.031394	1	5
Q4	974	2.014271	.9481261	1	4.8
Q5	974	2.173244	1.211732	1	5
Q6	974	2.120123	1.112191	1	5
Q7	974	1.700452	.9227899	1	5
Q8	974	1.827659	.9774142	1	5
Q9	974	1.525205	.5949497	1	4.25

In the Likert scale used to collect primary data, 1 denoted strongly agree while 5 denoted no effect. The SACCOs consistently (sd=0.595) strongly agreed (Mean =1.525) that financial disclosure requirements have a positive impact on the financial sustainability of SACCOs compared to other regulatory conditions. This is because the mean for Q9 (FIN DISC) was closest to 1 (strongly agree), followed by Q7 (BAD DEB) with a mean of 1.7 (sd=0.923).

5.7 Descriptive statistics for corporate governance

Corporate governance amongst SACCOs was measured using board size, the number of independent directors on the board (board independence) and the number of members in the audit committee. The distribution of the membership of the three constructs of SACCOs' corporate governance is presented in Figure 15.

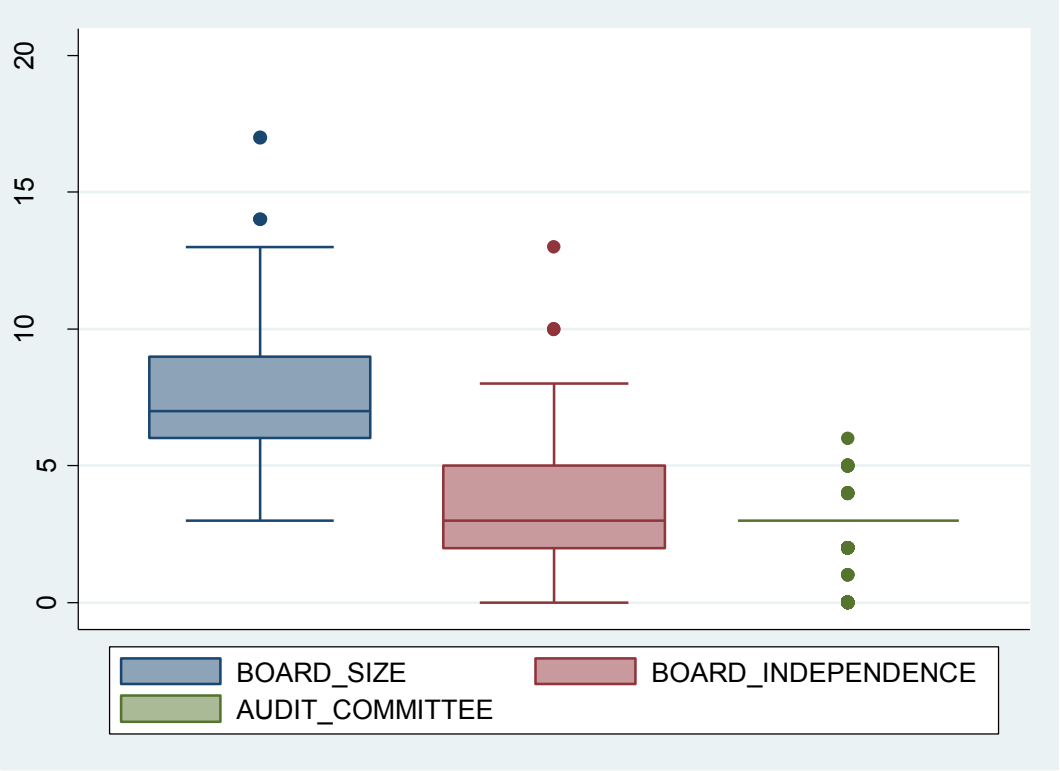

Figure 15. SACCO corporate governance membership distribution.

Figure 15 shows the distribution of membership for the SACCO corporate governance constructs. The number of board members for the selected SACCOs ranged from three to 17, with board independence (0-13) and audit committee (0-6). Some SACCOS did not have independent directors or audit committee members, hence the zero values.

The distribution of the membership of the three constructs of SACCOs' corporate governance is discussed below.

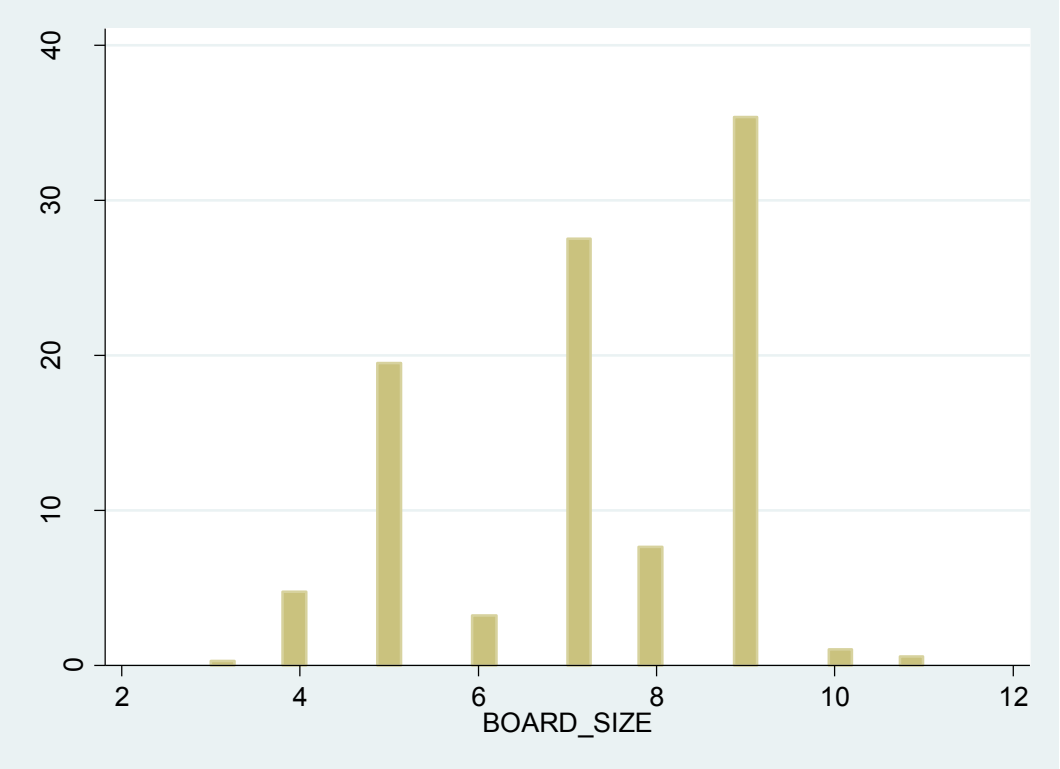

Figure 16. Board size membership distribution.

The average board membership was seven members. The majority (35%) of the SACCOs had boards with nine members, while approximately 1% had only three board members.

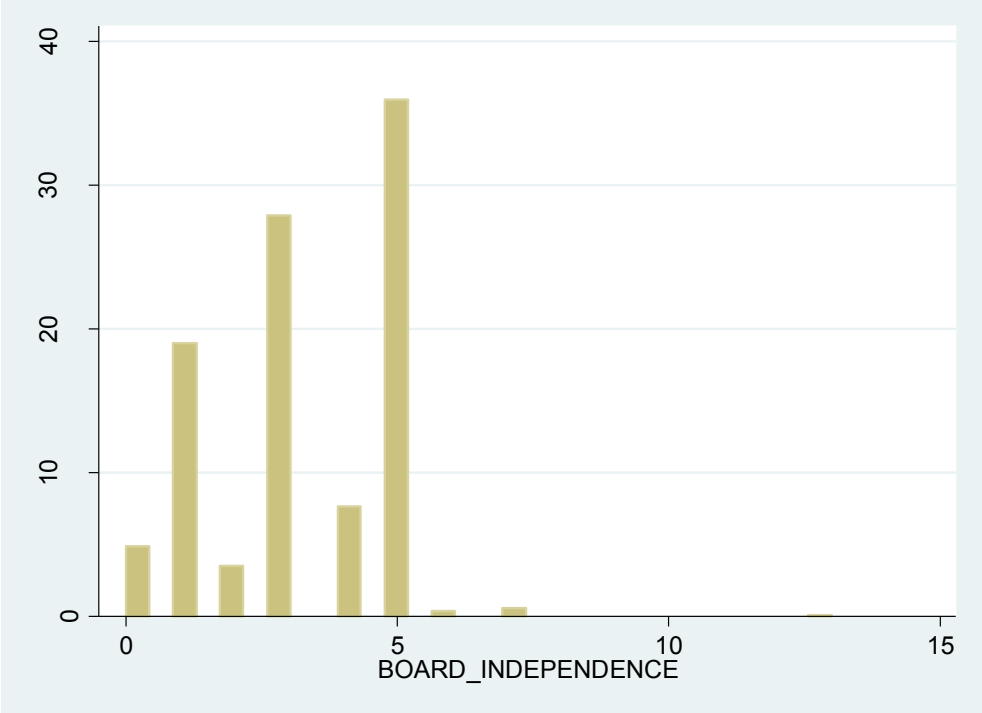

Figure 17. Board independence membership distribution.

Figure 17 shows the board independence membership distribution. The average number of non-executive directors was three members, however over 35% of the SACCOs had at least five members as non-executives. Approximately 5% of the SACCOs did not have independent directors on their boards.

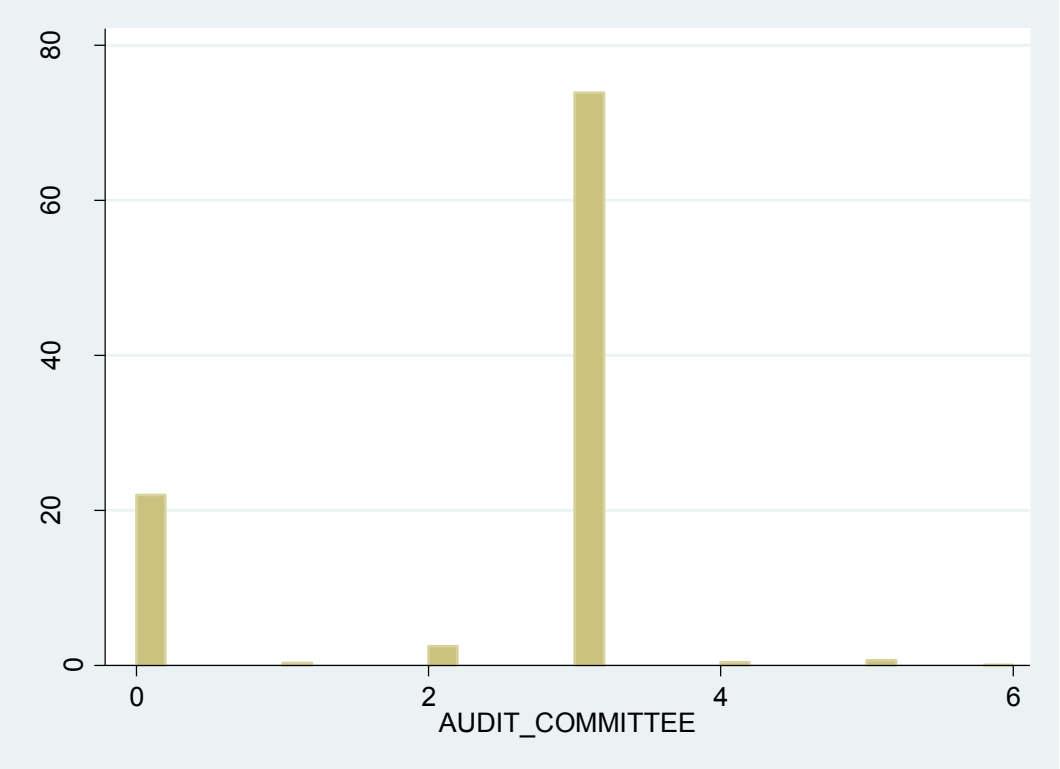

Figure 18. Audit committee membership distribution.

Figure 18 shows the audit committee membership distribution for the SACCOs. The average number of committee members was two. Over 20% of the SACCOs did not have audit committees in place, while over 70% had three audit committee members or more.

5.8 Descriptive statistics for age

The descriptive statistics for SACCOs' age are presented in Figure 19.

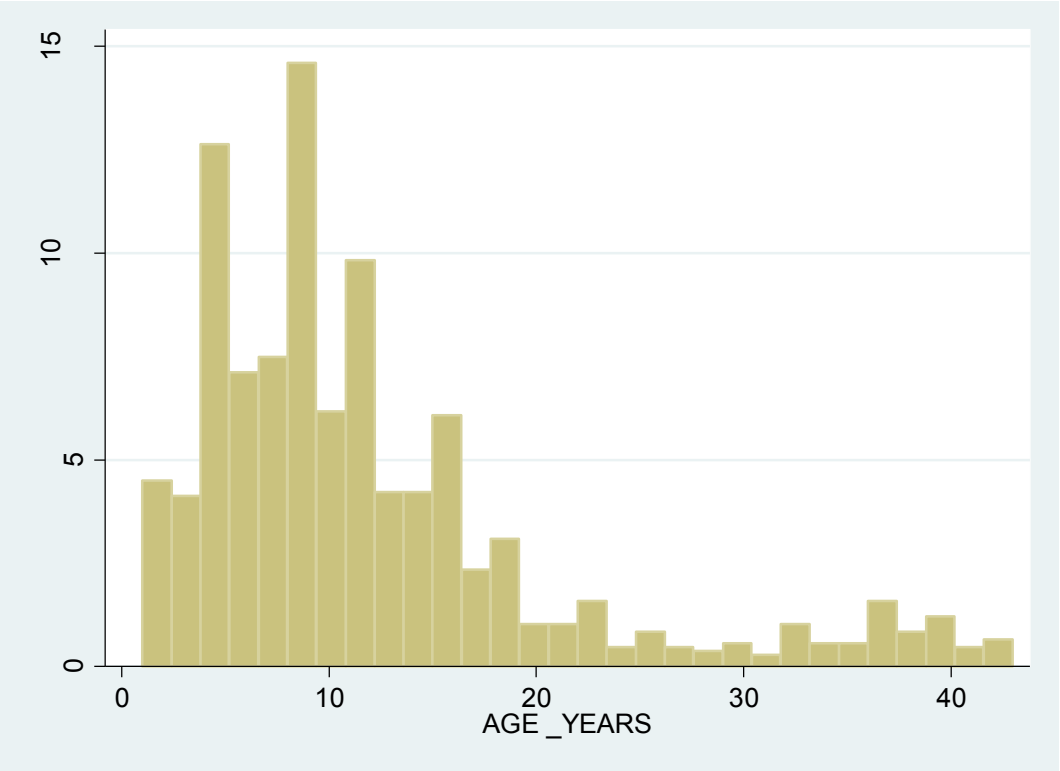

Figure 19. SACCO age distribution.

Figure 19 shows the distribution of SACCOs' ages since the establishment of the SACCOs. The majority of the SACCOs sampled were below 20 years of age. The mean average age was approximately 12 years, and less than 5% of the SACCOs were 40 years old and over.

5.9 Descriptive statistics for combined secondary data variables

As stated in Chapter Four, both secondary and primary data were collected for the study variables. Secondary data were collected for financial outreach, corporate

governance, size and age, as well as FSS, the dependent variable. Descriptive statistics results for the secondary variables are presented in Table 16.

Table 16: Descriptive Statistics for Combined Secondary Data Variables

Variable	Mean	sd	cv	Max	min	P25	P50	P75
NUM MEM	1136.243	3350.167	2.948459	39371	3	59	128	501
TOT DEP_~000	59445.83	213486.3	3.591275	180600	0	2167.767	6370.065	20298.14
BOD SIZ	7.260994	1.703289	.2345807	11	3	6	7	9
BOD IND	3.277247	1.702123	.5193716	13	0	2	3	5
AUD COM	2.328872	1.269015	.5449056	6	0	3	3	3
TOT ASST_000	86159.93	303314.4	3.520365	2981232	80	2686.786	8491.555	30901.04
TOT INC_i~000	12678.29	47926.41	3.780196	428179.7	.52	209.901	884.378	3006.503
SAC AGE	11.91292	8.908201	.7477764	43	1	6	9	15
FSS	7.879246	16.68285	2.117315	164.1622	0.68186	1.469001	3.270034	7.19618

Table 16 shows the descriptive analysis of all the variables in the secondary data. All the datasets gave a coefficient of variation of more than 50%, indicating high variability within each variable; therefore data transformation had to be applied where necessary to get the best models. Only the board size data set was consistent

(CV=23%). The inconsistency in the dataset was also displayed by the variability measured by min, p25, p50, p75 and max. Equidistance between min, p25, p50, p75 and max indicates normality; only board size was close to normality. The mean FSS was 7.9 which is greater than 1, which indicates that on average all the SACCOs were financially sustainable.

5.10 Test of hypotheses

The six study hypotheses were tested using the GLS separately, and thereafter all the variables were combined into a single model. Where regression assumptions were met, OLS was used, however where regression assumptions were violated, the GLS regression technique was applied.

5.10.1 Hypothesis testing for financial outreach

Financial outreach was the first independent variable under study. Breadth of outreach was measured using the number of members and total deposits. The first hypothesis was to test the influence of financial outreach on FSS and was stated thus:

$H_0 1$: *Financial outreach exerts no influence on the financial sustainability of SACCOs.*

$H_1 1$: *Financial outreach exerts an influence on the financial sustainability of SACCOs.*

The number of members and total deposits, the two measures used to measure financial outreach, were analysed separately, and their influence on FSS was independently computed.

5.10.1.1 Test of regression assumptions for financial outreach

The regression assumptions for financial outreach were tested and the results were as shown below.

5.10.1.1.1 Normality assumption test

The number of members and the total deposits data were subjected to a normality test. The results are depicted in Figure 20.

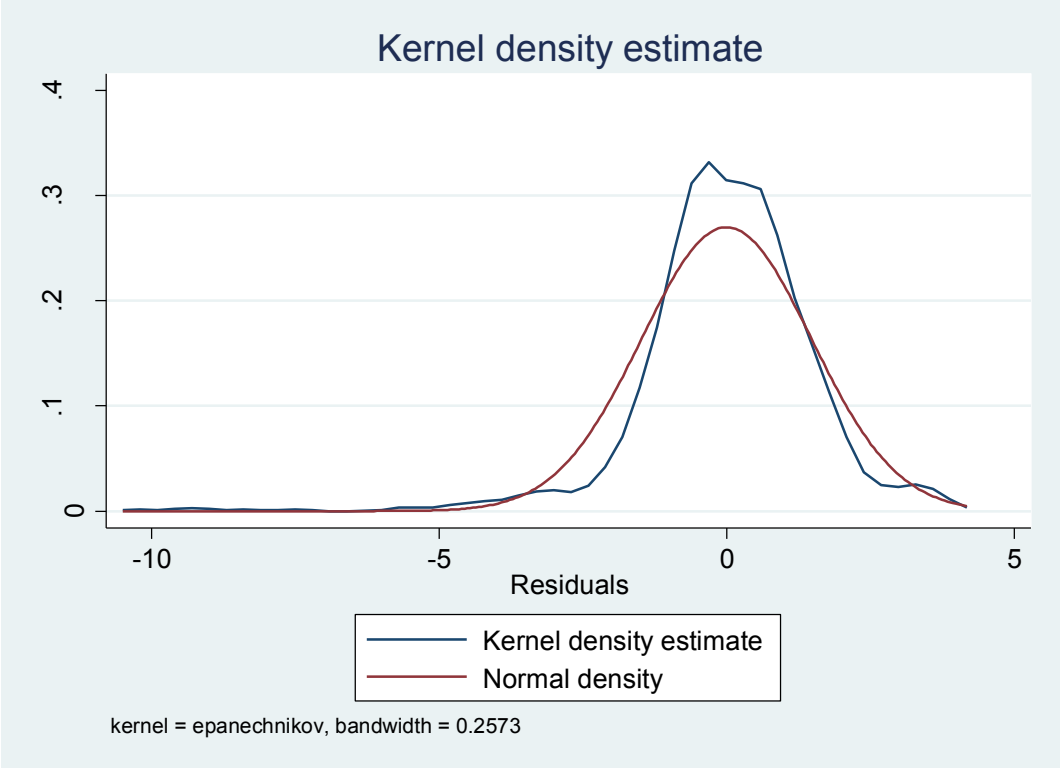

Figure 20. Normality assumption test for NUM MEM and TOT DEP data.

Figure 20 shows the normality for NUM MEM and TOT DEP data. The figure shows that the residuals are approximately normally distributed, therefore the normality assumption is satisfied.

5.10.1.1.2 Multicollinearity assumption test

A multicollinearity assumption test for NUM MEM and TOT DEP was undertaken, the results of which are presented in Table 17.

Table 17: Multicollinearity Test for NUM MEM and TOT DEP

Variable	VIF	1/VIF
no_of_memb~s	2.43	0.411575
savings_de~s	2.43	0.411575
Mean VIF	2.43	

The variance inflation factor (VIF) for both NUM MEM and TOT DEP is less than 10 (VIF= 2.43). This assumption is not violated in this case, as from the VIF test shown in Table 17, the value of VIF is less than 10, indicating non-collinearity.

5.10.1.1.3 Homoscedasticity assumption test

A homoscedasticity assumption test for NUM MEM and TOT DEP was undertaken and the results are presented in Table 18.

Table 18: Homoscedasticity Test for NUM MEM and TOT DEP

Cameron & Trivedi's decomposition of IM-test			
Source	chi2	df	p
Heteroskedasticity	2.11	5	0.8340
Skewness	7.78	2	0.0204
Kurtosis	6.08	1	0.0137
Total	15.97	8	0.0428

Table 18 shows the homoscedasticity assumption test for NUM MEM and TOT DEP. Since the p-values are greater than 0.05, it means that the assumption of homoscedasticity is not violated. There is no evidence of significant heteroscedacity in the data for NUM MEM and TOT DEP.

Since the regression assumtions were not violated, OLS was fitted on the data and the results are presented in Table 19.

Table 19: *OLS Regression Results Test of Hypothesis for Financial Outreach*

Source	SS	df	MS		Number of obs = 993
Model	16.1044137	2	8.05220683		F(2, 990) = 3.57
Residual	2231.09341	990	2.25362971		Prob > F = 0.0284
Total	2247.19783	992	2.26532039		R-squared = 0.0072
					Adj R-squared = 0.0052
					Root MSE = 1.5012
Lgfss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
No_Members	-.193871	.0735948	-2.63	0.009	-.3382907 -.0494513
Saving_deposits	.1295901	.0740729	1.75	0.081	-.015768 .2749481
_cons	1.127662	.0476425	23.67	0.000	1.03417 1.221153

Table 19 shows the linear regression results of the influence of financial outreach, as measured by NUM MEM and TOT DEP on financial sustainability, as measured by FSS. The linear regression analysis results indicated that the number of members was highly significant in influencing the value of FSS with a p-value of 0.009, which is less than 0.05. However, total deposits did not have a significant influence on FSS

with a p-value of 0.081, which is greater than 0.05. These results were significant at a 5% level of significance.

The null hypotheses on financial outreach stated that financial outreach does not exert a significant influence on financial sustainability, while the alternative hypothesis stated that financial outreach exerts a significant influence on financial sustainability. Based on the results above the null hypothesis was rejected, but only to the extent of the number of members, which significantly influenced financial sustainability. However, based on total deposits, the researcher failed to reject the null hypothesis, which stated that financial outreach exerts no significant influence on financial sustainability; therefore the alternative hypothesis was rejected based on total deposits.

5.10.2 Hypothesis testing for financial regulation

The second independent variable of the study was financial regulation. Regulation provisions as contained in the SACCO Act of 2008 were analysed to determine their influence on FSS. The second hypothesis of the study is stated thus:

$H_0 2$: *Financial regulation exerts no influence on the financial sustainability of SACCOs.*

$H_1 2$: *Financial regulation exerts an influence on the financial sustainability of SACCOs.*

Primary data were collected for this variable using a questionnaire. The results are presented below.

5.10.2.1 Response rate

A total of 166 questionnaires were issued to the managers of the SACCOs under study. Of these questionnaires, 139 were returned, which represented a response rate of 84%.

5.10.2.2 Internal reliability for individual measures of financial regulation

To ensure reliability in the present study, an internal consistency technique was applied. Internal consistency of data is determined from scores obtained from a single test, which is then correlated with scores from other items in the instrument (Mugenda & Mugenda, 2003). Cronbach's alpha was computed to determine how the items correlated among themselves and to calculate the internal consistency (reliability) of the measuring scales. Empirical results for the internal reliability are shown in Table 20.

Table 20: Tests on internal reliability for individual constructs of financial regulation

Variable	Cronbach's alpha pilot study	Cronbach's alpha final study
SACCO Licensing requirements	0.815	0.924
Capital adequacy provisions	0.545	0.945
Liquidity provisions	0.545	0.725
Shares and deposits rules	0.886	0.964
Credit management provisions	0.851	0.975
Bad debts and non-performing loans provisions	0.642	0.940
Fund investment rules	0.748	0.740
Financial disclosure	0.805	0.837

Cronbach's alpha indicates the extent to which a set of items can be used to measure a single variable (Malhotra, 1999). A minimum Cronbach's alpha coefficient of 0.7 is acceptable, which indicates that the score obtained from the measuring instrument is 70%, a true reflection of the underlying characteristic being measured (Hair et al., 2007). All the variables had a Cronbach's alpha coefficient of more than 70%, which indicated that there was consistency among the items measuring SACCO financial regulation.

5.10.2.3 Overall internal reliability for financial regulation

The overall Cronbach's alpha for financial regulation is presented in Table 21.

Table 21: Internal Reliability for Overall Financial Regulation Variable

Cronbach's alpha	N of items
0.875	36

The overall Cronbach's alpha for financial regulation is 0.875, which is above 0.7. This further confirms the internal reliability of the data collected.

5.10.2.4 Test of regression assumptions for financial regulation

The regression assumptions for the financial regulation variable were tested and the results are presented below.

5.10.2.4.1 Normality of residuals for financial regulation

The results for the normality test for financial regulation data are presented in Figure 21.

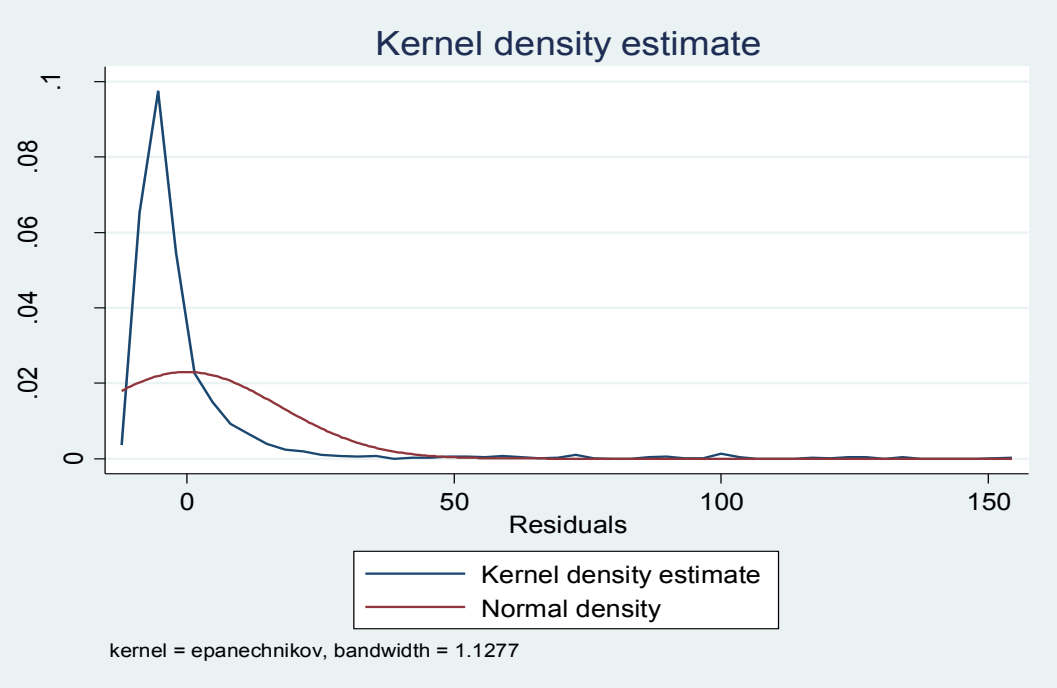

Figure 21. Normality test results for financial regulation data.

Figure 21 shows the normality test results for financial regulation data. The figure indicates that the financial regulation data violated the normality assumption of the regulation model.

5.10.2.4.2 Homoscedasticity test for financial regulation

The results of the homoscedasticity test for the financial regulation variable are presented in Table 22.

Table 22: Homoscedasticity Assumption Test for Financial Regulation

Cameron & Trivedi's decomposition of IM-test			
Source	chi2	df	p
Heteroskedasticity	72.70	44	0.0042
Skewness	27.85	8	0.0005
Kurtosis	10.45	1	0.0012
Total	111.01	53	0.0000

Table 22 shows the results of the homoscedasticity of residuals test for financial regulation. Test for null hypothesis that the homogeneity of variance of the residuals is rejected based on the results in the table. The reported p-value (0.0042) is less than 0.05, indicating evidence of the significant existence of heteroscedasticity.

5.10.2.4.3 Multicollinearity assumption test for financial regulation

The results for the multicollinearity assumption test for financial regulation are presented in Table 23.

Table 23: Test for Multicollinearity Assumption for Financial Regulation

Variable	VIF	1/VF
q5	1.76	0.569380
q6	1. 61	0.619728
q4	1.46	0.687260
q7	1.27	0.785673
q8	1.24	0.803961
q3	1.24	0.808084
q9	1.15	0.866514
q2	1.09	0.920584
Mean VIF	1.35	

Note: VIF - variance inflation factor

Table 23 shows the results of the multicollinearity assumption test for financial regulation. The assumption of multicollinearity is not violated here, since all 1/VIF are more than 0.1.

5.10.2.5 Testing the hypothesis for financial regulation

Considering the construct of the financial regulations as an independent variable, and FSS as a dependent variable, a regression model using OLS gave the results shown in Table 24.

Table 24: OLS Results for Financial Regulation Constructs and FSS

Source	SS	df	MS		Number of obs = 880
Model	3543.12383	8	442.890478		F(8, 871) = 1.46
Residual	264361.878	871	303.515359		Prob > F = 0.1682
Total	267905.002	879	304.783847		R-squared = 0.0132
					Adj R-squared = 0.0042
					Root MSE = 17.422
fss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
q2	.6767615	.5002755	1.35	0.176	-.3051248 1.658648
q3	. -.7397254	.627175	-1.18	0.239	-1.970676 .4912255
q4	-1.363315	.7236357	-1.88	0.060	-2.783588 .0569587
q5	.964623	.6319438	1.53	0.127	-.2756877 2.204934
q6	-.6541081	.666752	-0.98	0.327	-1.962736 .6545204
q7	-.1988801	.7203001	-0.28	0.783	1.612607 1.214847
q8	.1760195	.6576462	0.27	0.789	-1.114737 1.466776
q9	.631838	1.070167	0.59	0.555	-1.46857 2.732246
_cons	8.201563	3.134089	2.62	0.009	2.050314 14.35281

Table 24 shows the OLS results for financial regulation constructs and FSS. All the constructs (Q2 to Q9) are insignificant in the model, with a p-value of greater than 0.05.

To solve the problem of non-normality, the FSS was transformed using logarithm and then remodelled. The results are as shown in Table 25.

Table 25: Transformed FSS Results

Source	SS	df	MS		Number of obs = 867
Model	33.6454717	8	4.20568397		F(8, 858) = 1.78
Residual	2029.28895	858	2.36513863		Prob > F = 0.0777
Total	2062.93442	866	2.38214136		R-squared = 0.0163
					Adj R-squared = 0.0071
					Root MSE = 1.5379
lggfss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
q2	.1145945	.0447045	2.56	0.011	.0268515 .2023375
q3	-.0242628	.0557	-0.44	0.663	-.133587 .0850614
q4	.0267114	.063984	0.42	0.676	-.0988722 .152295
q5	-.1091604	.0558986	-1.95	0.051	-.2188745 .0005536
q6	0749963	.0591917	1.27	0.205	-.0411812 .1911738
q7	-.0486307	.0640492	-0.76	0.448	-.1743422 .0770808
q8	.0063917	.0583004	0.11	0.913	-.1080364 .1208198
q9	.1428116	.0949274	1.50	0.133	-.0435055 .3291287
_cons	.6436066	.2799871	2.30	0.022	.0940667 1.193146

Table 25 shows the regression results for financial regulation with a transformed FSS. There are some improvements, with Q2 now being significant with a p-value of 0.011. Construct Q5 is almost significant with a p-value of 0.51, and even the normality of the residuals has improved, as shown in Figure 22.

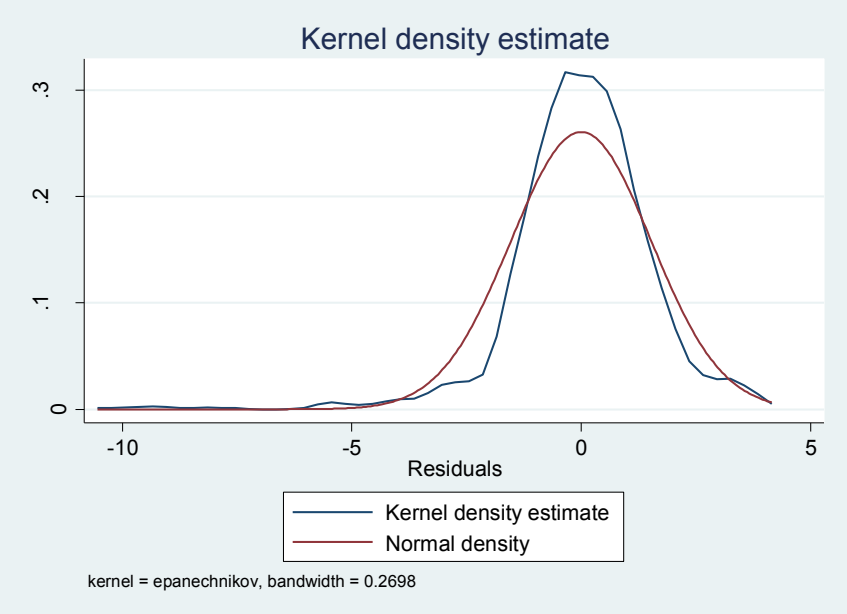

Figure 22. Normality assumption test after FSS transformation.

Figure 22 shows the normality assumption test after FSS transformation. The results indicate that normality was almost achieved for the data with the transformation of FSS.

A regression model was therefore fitted using a GLS approach to take care of the heretoscedasticity on a transformed dependent variable. The results are shown in Table 26.

Table 26: GLS Regression Results for Financial Regulation

Cross-sectional time-series FGLS regression				Number of obs =	867
Coefficients: generalized least squares				Number of groups =	139
Panels: heteroskedastic				Obs per group: min =	1
Correlation: no autocorrelation				avg =	6.23741
				max =	7
Estimated covariances =	139			Wald chi2(8) =	105.47
Estimated autocorrelations =	0			Prob > chi2 =	0.0000
Estimated coefficients =	9				

lggfss	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
q21	.1227734	.0250539	4.90	0.000	.0736687	.1718782
q31	.0043823	.0297178	0.15	0.883	-.0538635	.0626281
q41	-.0017777	.0382696	-0.05	0.963	-.0767848	.0732293
q51	-.0981323	.0239358	-4.10	0.000	-.1450456	-.051219
q61	.061807	.0277818	2.22	0.026	.0073556	.1162583
q71	.0083969	.0333538	0.25	0.801	-.0569753	.0737692
q81	.0152795	.0257341	0.59	0.553	-.0351583	.0657174
q91	.0902003	.0569624	1.58	0.113	-.0214439	.2018446
_cons	1.215699	.0848019	14.34	0.000	1.049491	1.381908

Table 26 shows the GLS regression results for financial regulation. Here three variables (Q2, Q5 and Q6) are significant, with a p-value of less than 0.05. This implies that it is the opinion of the SACCO managers that Q2 (LIQ PRO), Q5 (SHA DEP) and Q6 (CRE MAN) were the regulation provisions, with significant influence

on the FSS. The model representing the reletationship of the constructs is shown below.

5.10.2.6 Financial regulation final model

As indicated in Chapter Four, the regression model applied for the financial regulation variable was shown as follows:

$Y= B_0 + B_l$ LIC PRO + B_2CAP ADE+ B_3LIC PRO+B_4 SHA DEP+ B_5CRE MAN + B_6 BAD DEB + B_7 FUND INV + B_8 FIN DISC

Where:

β_0 is the intercept i.e. $Y= \beta_0$ when $X_{1,2,3,4,\ldots.k}= 0$

$\beta_1, \beta_2, \beta_3, \beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of each measure of the independent variable.

Having eliminated insignificant financial regulation constructs, a model for financial regulation was constructed as follows:

Log (FSS) =1.2156 +0.1228 LIC PRO – 0.0981 SHA DEP + 0.0618 CRE MAN

When the SACCO representatives have a neutral opinion on licencing, share and deposit conditions, and credit management conditions, and when other things are held constant, the FSS will by chance be 16.4323 (antilog of 1.215699). When they have an opinion that licensing regulation is made easier by the SASRA (if they disagree that the licensing process for SACCOs is hard), then the FSS will increase by 1.3268 (antilog of 0.1228). With an opinion that supports share and deposit conditions (that is, if they agree that the share deposits requirements have impacted positively on the performance of SACCOs), then the FSS will increase by 0.7978 (antilog of -0.0981), and when their opinion supports the credit management

conditions, FSS will increase by 1.1529 (antilog of 0.0618). This model is based on the significant constructs of financial regulation only.

The objective in the second variable was to establish the influence of financial regulation on the financial sustainability of SACCOs. The null hypothesis stated that financial regulation exerts no significant influence on financial sustainability, while the alternative hypothesis stated that financial regulation exerts a significant influence on financial sustainability. Based on the above results, the null hypothesis is rejected and it is concluded that financial regulation exerts a significant influence on the financial sustainability of SACCOS in Kenya. The results are at a 5% level of significance.

5.10.3 Hypothesis testing for corporate governance

SACCO governance was the third independent variable of the study. The study sought to determine the influence of SACCOs' corporate governance on financial sustainability. The variable was measured using three parameters: board size, board independence and audit committee. The third hypothesis of the study thus stated:

$H_0$3: Corporate governance exerts no influence on the financial sustainability of SACCOs.

$H_1$3: Corporate governance exerts an influence on the financial sustainability of SACCOs.

The association of the three constructs used to measure SACCOs' corporate governance is depicted in Figure 23.

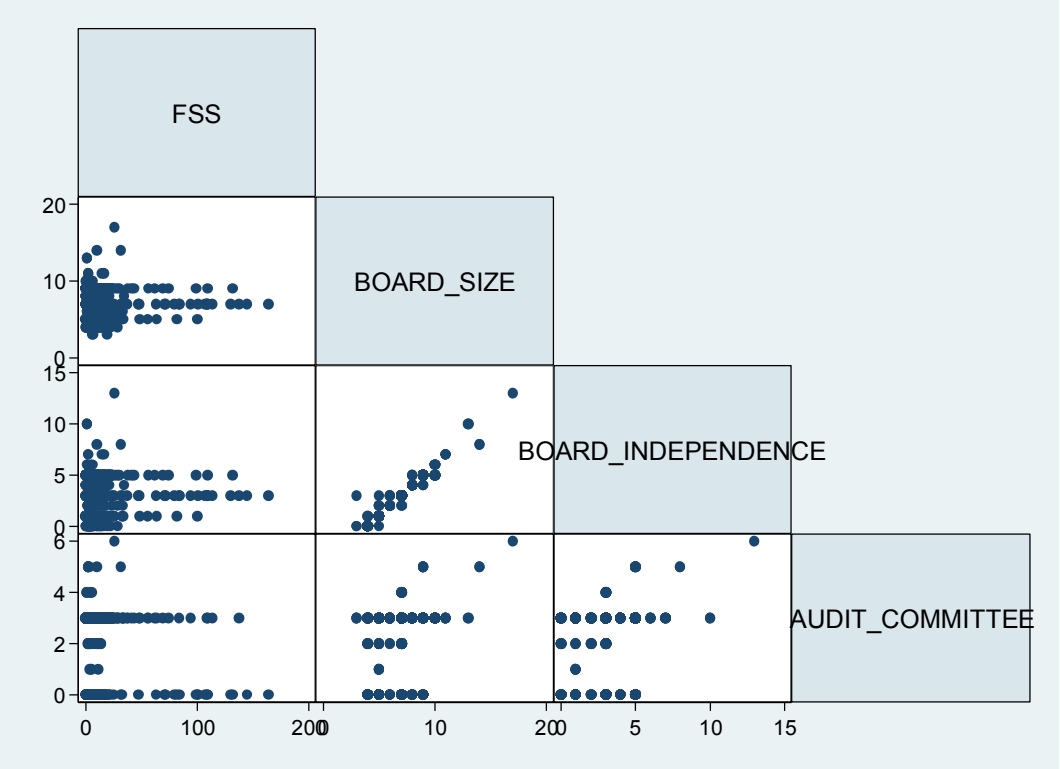

Figure 23. Scatter matrix for SACCOs' corporate governance constructs.

Figure 23 shows the scatter matrix for the three measures of SACCO governance. There is a strong correlation between board size and board independence, as indicated in the scatter matrix, thus when considering a regression model, only board size and audit committee were used as predictors of FSS. Board independence was dropped from the regression model as the number of the independent directors formed part of board size.

5.10.3.1 Test of regression assumptions for SACCOs' corporate governance

The regression assumptions for the corporate governance variable were tested and the results are presented below.

5.10.3.1.1 Normality assumption test for SACCO corporate governance data

The normality assumption was tested and the results are presented in Figure 24.

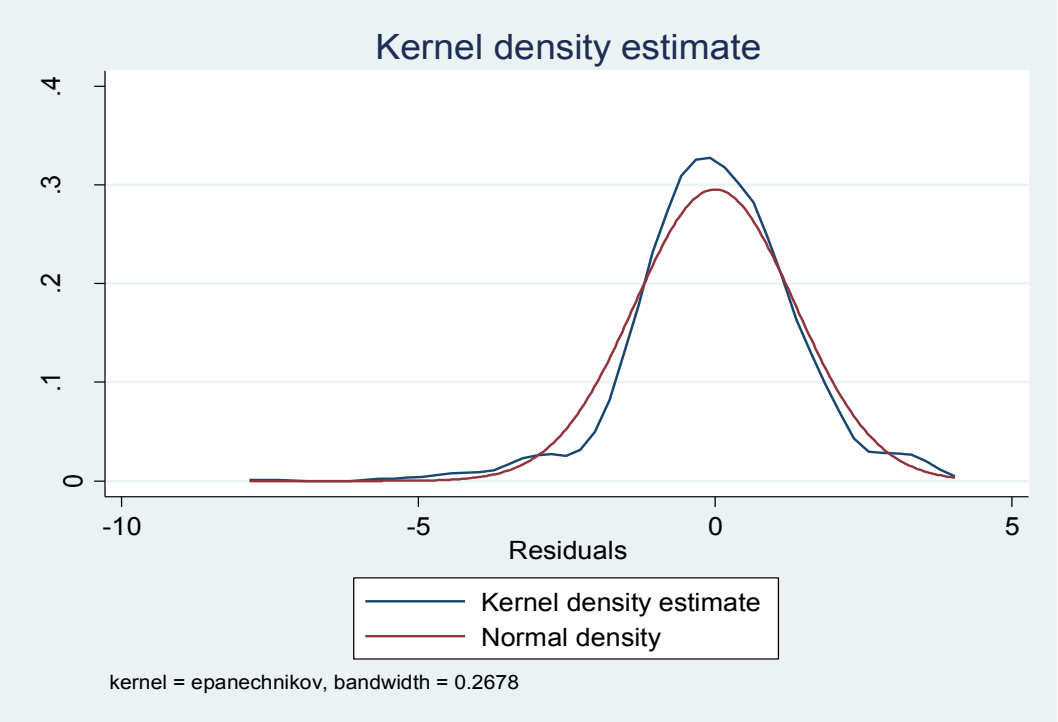

Figure 24. Normality assumption test for corporate governance.

The normality assumption is not violated.

5.10.3.1.2 Multicollinearity assumption test for corporate governance data

The results for the multicollinearity assumption test for corporate governance are presented in Table 27.

Table 27: Results for Multicollinearity Assumption Test for Corporate Governance

Variable	VIF	1/VF
audit_comm~e	1.11	0.902912
board_size	1.11	0.902912
Mean VIF	1.11	

Table 27 shows the multicollinearity assumption test for corporate governance. The assumption of multicollinearity is not violated here since all 1/VIF were more than 0.1.

5.10.3.1.3 Test of homoscedasticity assumption for corporate governance

The results for the homoscedasticity assumption test for corporate governance are presented in Table 28.

Table 28: Test of Homoscedasticity Assumption for Corporate Governance

Cameron & Trivedi's decomposition of IM-test			
Source	chi2	Df	P
Heteroskedasticity	4.41	5	0.0492
Skewness	10.4	2	0.0055
Kurtosis	5.62	1	0.0178
Total	20.45	8	0.0088

Table 28 shows the homoscedasticity assumption test for SACCOs' corporate governance. The heteroscedasticity p-value is 0.0492 which is less than 0.05 at the 5% level of significance, therefore the homoscedasticity regression assumption is violated.

5.10.3.2 Testing hypothesis for SACCOs' corporate governance

BOD SIZ and AUD COM data were fitted into the OLS model and the results are presented in Table 29.

Table 29: OLS Regression Results of BOD SIZ and AUD COMM

Source	SS	df	MS		Number of obs = 1012
Model	13.5848985	2	6.79244923		F(2, 1009) = 3.72
Residual	1842.31701	1009	1.82588405		Prob > F = 0.0246
Total	1855.60516	1011	1.83570911		R-squared = 0.0073
					Adj R-squared = 0.0054
					Root MSE = 1.3513
lggfss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
board_size	-.0281462	.0264745	-1.06	0.288	-.0800976 .0238052
audit_committee	-.0722344	.0351397	-2.06	0.040	-.1411896 -.0032792
_cons	1.56211	.1893003	8.25	0.000	1.190642 1.933577

Table 29 shows the OLS regression results of BOD SIZ and AUD COMM, the measures of SACCOs' corporate governance, and FSS, the dependent variable. The OLS regresssion model above shows that only members in audit committees was significant, with a p-value of 0.04. However, since the assumption of homoscedasticity was violated, the GLS regression model was recommended. The GLS regression model results are presented in Table 30.

Table 30: GLS Regression Model Results for SACCOs' Corporate Governance

Random-effects GLS regression				Number of obs = 1019	
Group variable: sacco				Number of groups =	164
R-sq: within = 0.0224				Obs per group: min =	2
between = 0.0108				avg =	6.2
overall = 0.0081				max =	7
				Wald chi2(2) =	19.46
corr(u_i, X) = 0 (assumed)				Prob > chi2 =	0.0001
lggfss	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]
board_size	-.080312	.0367713	-2.18	0.029	-.1523824 -.0082416
audit_committee	-.1286666	.0367744	-3.50	0.000	-.2007431 -.0565901
_cons	2.004015	.2849405	7.03	0.000	1.445542 2.562488
sigma_u	1.1377531				
sigma_e	.98506319				
rho	.5715578	(fraction of variance due to u_i)			

Table 30 shows that BOD SIZ has a p-value of 0.029, which is less than 0.05, indicating significant influence, while the p-value for AUD COM is 0.000, which is also less than 0.05. This indicates that there is significant influence of AUD COM on FSS, therefore the two measures of corporate governance significantly influence FSS. A unit increase in the board size increases the FSS by 0.83116, and a unit increase in the audit committee membership increases the FSS by 0.7433.

5.10.3.3 Final model for corporate governance

As indicated in Chapter Four, the regression model applied for the SACCO corporate governance variable was as follows:

$Y= B_0 + B_l$ BOD SIZ + B_2BOD IND+ B_3AUD COM

Where:

β_0 is the intercept i.e. $Y= \beta_0$ when $X_{1,2,3,4,\ldots.k}= 0$

$\beta_1, \beta_2, \beta_3, \beta_4 \ldots \beta_k$ are the regression coefficients of the contribution of each measure of the independent variable.

The final model for SACCO corporate governance is presented below:

Log (FSS) =2.004015 - 0.80312 BOD SIZ – 0.1286666 AUD COM

There is a significant effect of board size and number of members in the audit committee on the FSS; a unit increase in the board size increases the FSS by 0.83116, and a unit increase of the audit committee membership increases the FSS by 0.7433.

The objective in the third variable was to establish the influence of corporate governance on financial sustainability. The null hypothesis stated that a SACCO's

corporate governance exerts no significant influence on financial sustainability, while the alternative hypothesis stated that corporate governance exerts a significant influence on financial sustainability. Based on the above results, the null hypothesis is rejected and it is concluded that corporate governance exerts a significant influence on the financial sustainability of SACCOS in Kenya. The results are at a 5% level of significance.

5.10.4 Hypothesis testing for a SACCO's size

SACCO size was the fourth independent variable of the study, which was measured using two constructs: total assets and total income. The influence of each of the parameters was tested separately, after which a bivariate analysis was conducted. The fourth hypothesis of the study was stated as follows:

$H_0$4: Size exerts no influence on the financial sustainability of SACCOs.

$H_1$4: Size exerts an influence on the financial sustainability of SACCOs.

The association between the two constructs, TOT ASST and TOT INC, the measures of a SACCO's size, is presented in Figure 25.

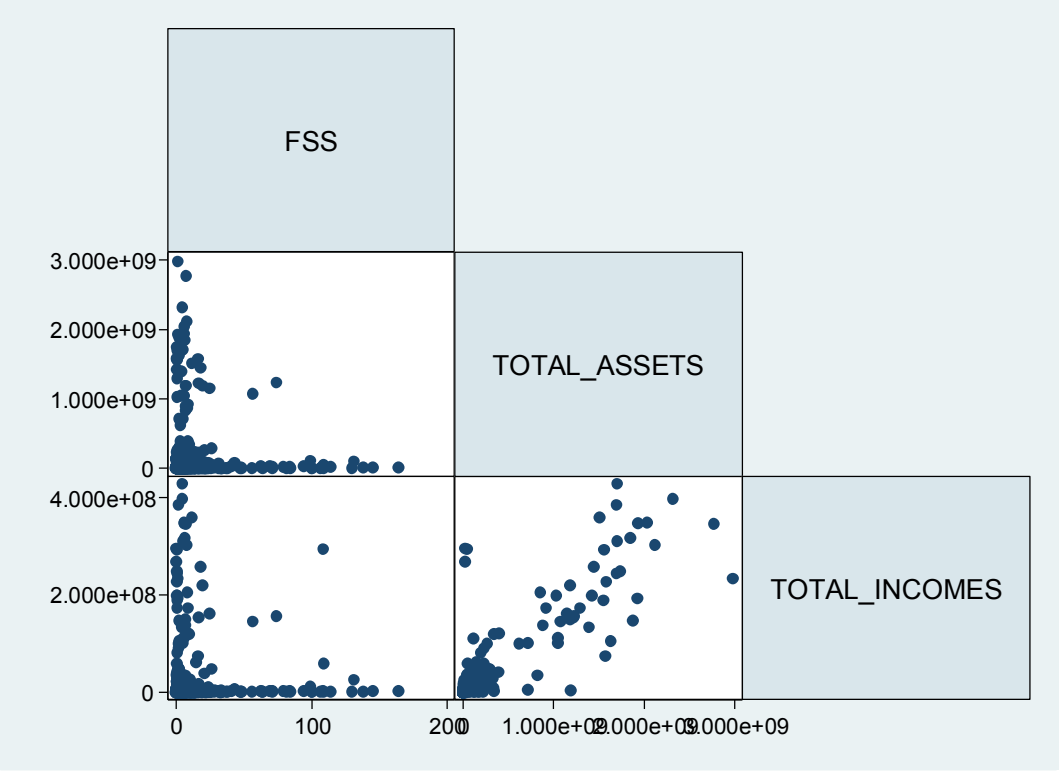

Figure 25. Relationship between total assets and total income.

Figure 25 shows the results of the relationship between total assets and total income. There was some positive correlation between the two, therefore only one could be used as an independent variable in the regression model, with FSS as the dependent varaiable. Total assets were thus taken as the measure of a SACCO's size and total income was dropped.

5.10.4.1 Regression assumptions tests for SACCO size

The regression assumptions tests for SACCO size and the results are presented below.

5.10.4.1.1 Normality test for SACCO size

The normality test results for SACCO size are shown in Figure 26.

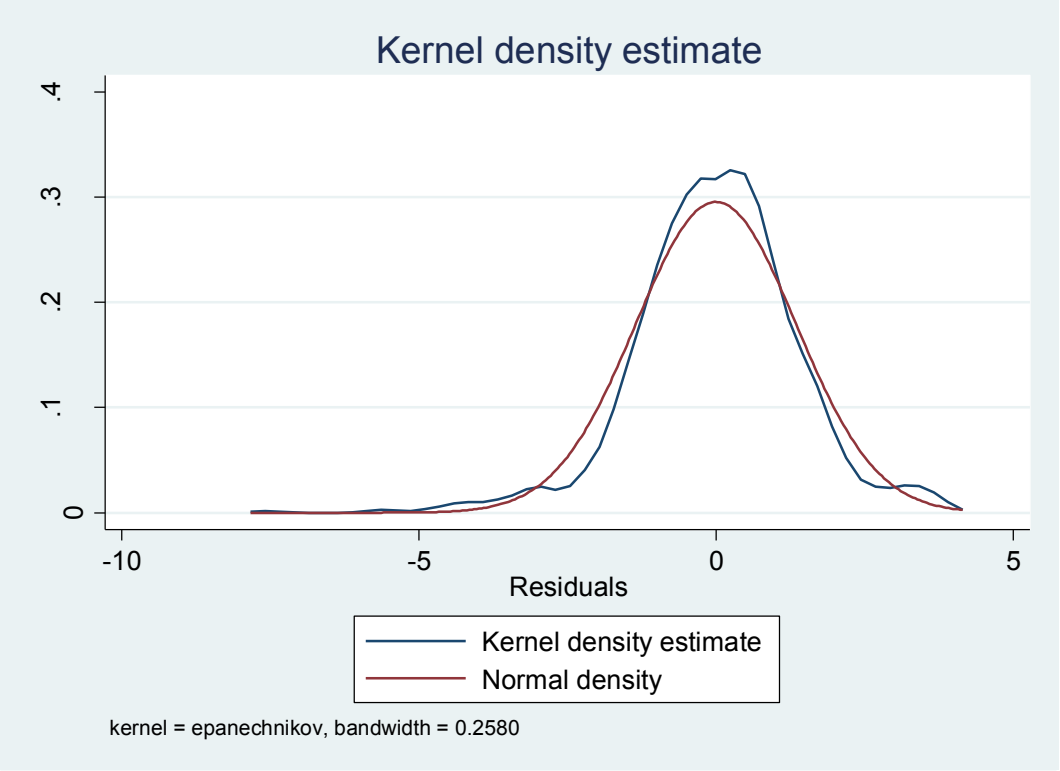

Figure 26. Normality test for SACCO size.

Figure 26 shows the normality test results for SACCO size. As per the figure, the SACCO size data are normally distributed, therefore the normality test assumption is not violated.

5.10.4.1.2 Homoscedasticity assumption test for SACCO size

The results of this test are presented in Table 31.

Table 31: Homoscedasticity Assumption Test for SACCO Size

Cameron & Trivedi's decomposition of IM-test			
Source	chi2	Df	p
Heteroskedasticity	0.13	2	0.9376
Skewness	4.78	1	0.0287
Kurtosis	5.98	1	0.0145
Total	10.89	4	0.0278

The test for homoscedasticity was significant since Pr= 0.9376, therefore the study failed to reject the null hypothesis of constant variance.

5.10.4.2 Testing of hypothesis for SACCO size

Since the regression analysis model assumptions were met, the OLS model was fitted and the results are as shown in Table 32.

Table 32: OLS Regression Model Results for SACCO Size

Source	SS	df	MS		Number of obs = 1011
Model	15.7710312	1	15.7710312		F(1, 1009) = 8.65
Residual	1839.83413	1009	1.82342332		Prob > F = 0.0033
Total	1855.60516	1010	1.83723283		R-squared = 0.0085
					Adj R-squared = 0.0075
					Root MSE = 1.3503
lggfss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
lgAssest	.0655944	.0223039	2.94	0.003	.0218271 .1093617
_cons	.1298412	.362905	0.36	0.721	-.5822938 .8419761

Table 32 shows OLS regression model results for SACCO size. The results show that there is a positive contribution of total assets on the FSS. Total assets has a p-value of 0.003 which is less than 0.05.

The fourth objective of the study was to establish the influence of a SACCO's size on financial sustainability. The null hypothesis stated that size exerts no influence on financial sustainability, while the alternative hypothesis stated that size exerts an influence on financial sustainability. Based on the results above, the null hypothesis

is rejected and it is concluded that size exerts a significant influence on the financial sustainability of SACCOs in Kenya. The results are significant at a 5% significance level.

5.10.5 Hypothesis testing for a SACCO's age

Age was the fifth independent variable of the study. This variable was measured by the number of years a SACCO had been in existence since the date of registration. The purpose was to determine the influence of age on financial sustainability. The fifth hypothesis was thus stated as follows:

H_0*5: Age exerts no influence on the financial sustainability of SACCOs.*

H_1*5: Age exerts an influence on the financial sustainability of SACCOs.*

5.10.5.1 Regression analysis model assumptions tests

The results of regression analysis model assumptions tests are presented below.

5.10.5.1.1 Normality test for SACCO age

The normality assumption test results for SACCO age are presented in Figure 27.

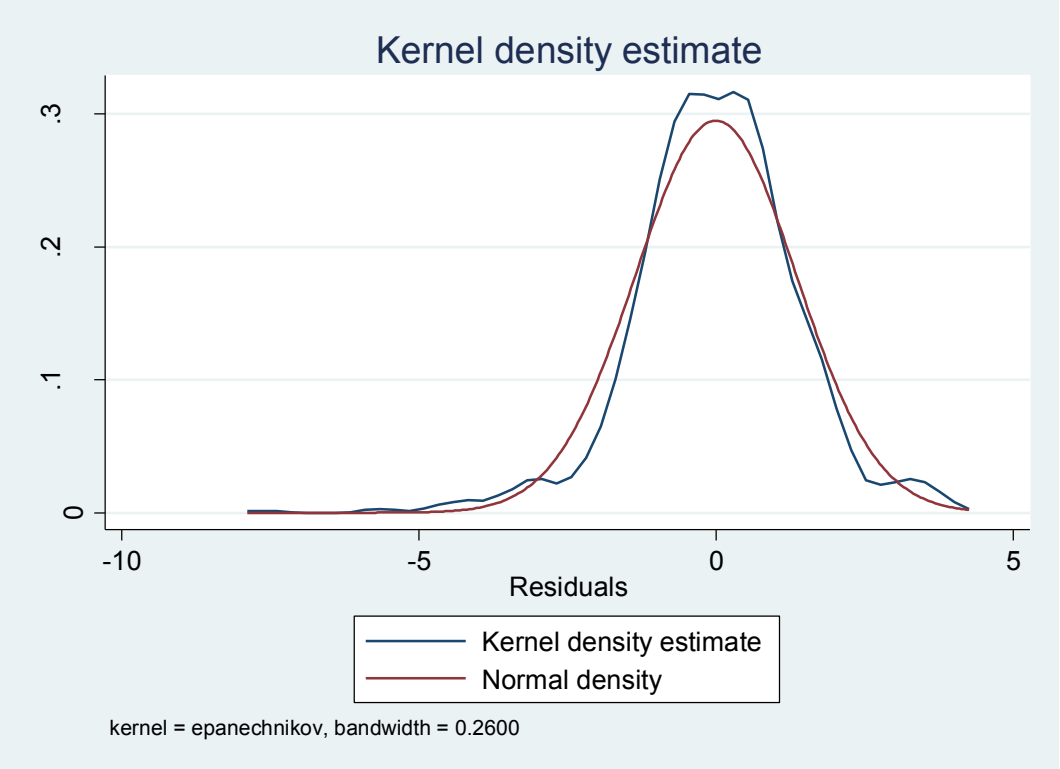

Figure 27. Normality assumption test for SACCO age.

The data are normally distributed and therefore the normality test is satisfied.

5.10.5.1.2 Homoscedasticity assumption for SACCO age

The results for the homoscedasticity assumption are presented in Table 33.

Table 33: Homoscedasticity Assumption Test for SACCO Age

Cameron & Trivedi's decomposition of IM-test			
Source	chi2	df	p
Heteroskedasticity	0.40	2	0.8186
Skewness	4.10	1	0.0428
Kurtosis	5.85	1	0.0155
Total	10.36	4	0.0548

The test for homoscedasticity was significant since Pr= 0.8186, therefore the study failed to reject the null hypothesis of constant variance.

5.13.2 Testing of hypothesis for SACCO age

The OLS regression model was fitted since the regression analysis assumptions were met. The OLS regression results are presented in Table 34.

Table 34: OLS Regression Results for SACCO Age

Source	SS	df	MS		Number of obs = 1008
Model	11.5948835	1	11.5948835		F(1, 1006) = 6.33
Residual	1843.28988	1006	1.8322961		Prob > F = 0.012
Total	1854.88476	1007	1.84199082		R-squared = 0.0063
					Adj R-squared = 0.0053
					Root MSE = 1.3536
Lggfss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
age_years	.0123483	.0049088	2.52	0.012	.0027157 .0219809
_cons	1.041846	.0718545	14.50	0.000	.900844 1.182848

Table 34 shows the OLS regression model results for SACCO age. The results indicate that there is significant influence of age on FSS; age has a p-value of 0.012 which is less than 0.05, hence the significant relationship.

The fifth objective stated that the age of a SACCO exerts no influence on financial sustainability, while the alternative objective stated that the age of a SACCO does exert an influence on financial sustainability. As per the results above, the null hypothesis is rejected, and it is concluded that the age of a SACCO exerts a significant influence on FSS. The results are significant at a 5% level of significance.

Finally, hypothesis testing for the combined variables was undertaken. The sixth hypothesis of the study stated:

$H_0$6: The combined factors exert no influence on the financial sustainability of SACCOs.

$H_1$6: The combined factors exert an influence on the financial sustainability of SACCOs.

The results are provided below.

5.10.6 Correlation matrix for the overall financial sustainability model

The candidates for the overall models that needed to be investigated were those that were significant in the previous analysis. Upon checking on the relationship of the candidate models, total deposits and totals assets and income had a positive correlation that seemed to be strong (>90%). Board size and independence were also strongly correlated (>90%). Such correlated variables are likely to cause multicollinearity in a regression model. The correlation matrix for the overall model is presented in Table 35.

Table 35: Correlation Matrix for the Overall Model

no_of_~s	no_of_~s	saving~s	board~ze	board~ce	audit_~e	total~ts	total~es	age_ye~s	fss
no_of_memb~s	1.0000								
savings_de~s	0.7726	1.0000							
board_size	0.2371	0.2438	1.0000						
board_inde~e	0.2241	0.2384	**0.9811**	1.0000					
audit_comm~e	0.1784	0.1477	0.3072	0.3217	1.0000				
total_assets	0.7547	**0.9403**	0.2406	0.2348	0.1522	1.0000			
total_inco~s	0.7734	**0.9133**	0.2196	0.2107	0.1445	**0.8742**	1.0000		
age_years	0.2077	0.3466	0.2790	0.2768	0.1865	0.3422	0.2979	1.0000	
fss	0.0429	0.0019	0.0081	0.0001	0.1103	0.0003	0.0354	0.0218	1.0000

A high correlation between predictor variables means multicollinearity, thus based on the more significant predictor of the dependent variable, the rest were dropped. The reason why board independence was dropped in favour of board size (0.9811), total assets in favour of total income (0.8742), was because they were constructs measuring the same variables. Additionally, total deposits were dropped in favour of members (0. 7726 blue bold), since this correlation was considered to be high. All the other correlations were low and were therefore not supposed to feature in the final model.

5.10.6.1 The OLS regression for the overall financial sustainability model

The OLS regression model was fitted for the overall financial sustainability model and the results are presented in Table 36.

Table 36: OLS Regression Analysis Model for the Overall Model

Source	SS	df	MS		Prob > F = 0.0000	
Model	130.388938	14	9.31349557		R-squared = 0.0832	
Residual	1437.49434	823	1.74665169		Adj R-squared = 0.0676	
Total	1567.88328	837	1.87321777		Root MSE = 1.3216	
lggfss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
NUM MEM	-.0000697	.0000165	-4.23	0.000	-.0001021	-.0000373
TOT DEP	-.0984395	.0592443	-1.66	0.097	-.2147273	.0178482
AUD COM	-.1069609	.0401837	-2.66	0.008	-.1858355	-.0280864
BOD SIZ	-.085222	.0319003	-2.67	0.008	-.1478374	-.0226065
TOT ASST	.2710674	.0604198	4.49	0.000	.1524723	.3896625
SAC AGE	.0051112	.0061056	0.84	0.403	-.0068733	.0170957
q21	.1582376	.0393142	4.02	0.000	.0810697	.2354056
q31	.0476004	.0493703	0.96	0.335	-.0493061	.1445069
q41	-.0622089	.0579735	-1.07	0.284	-.1760021	.0515844
q51	-.0936957	.049433	-1.90	0.058	-.1907253	.003334
q61	.0029011	.0538832	0.05	0.957	-.1028637	.1086658
q71	.0228931	.0564414	0.41	0.685	-.0878929	.1336791
q81	-.0401963	.052268	-0.77	0.442	-.1427906	.0623979
q91	.078625	.0869979	0.90	0.366	-.0921389	.2493888
_cons	-.852606	.5377035	-1.59	0.113	-1.908038	.2028256

Table 36 shows the OLS results for the overall model. The results indicate that NUM MEM with a p-value of 0.000, which is less than 0.05 was significant. Likewise, AUD COM with a p-value of 0.008, BOD SIZ with a p-value of 0.008, TOT ASST with a p-value of 0.000, and LIC PRO with p-value of 0.000, were all significant. This indicates

that they exerted a significant influence on FSS when combined with the rest of the constructs. All other constructs were insignificant. These results were significant at a 5% level of significance.

5.10.6.2 Test for robustness of the full model when OLS is used

A robustness test for the overall financial sustainability model was carried out when OLS was used. Highly significant variables (number of members and total assets) in the model were the core variables included in all the models in the tests while the rest were testing variables. The robustness test results for the overall model when OLS is used are presented in Table 37.

Table 37: Robustness test for the overall study model when OLS is used

	Proportion of sig coefficient	Avg. T	Obs.
Core variables			
NUM MEM	0.621094	2.061101	4096
TOT ASST	0.448682	1.829968	4096
Testing Variable			
TOT DEP	0	1.521995	
AUD COM	0.944336	1.910428	2048
BOD SIZ	0.89355	1.31796	2048
SAC AGE	0.059375	1.011139	2048
Q2	1	3.955643	2048
Q3	0	0.337973	2048
Q4	0.057617	1.127535	2048
Q5	0.055664	2.007468	2048
Q6	0	0.70985	2048
Q7	0	0.237979	2048
Q8	0	0.269909	2048
Q9	0	0.382952	2048

In the results above, whilst trying to add and drop variables in the model, Q2 was always significant in the models that were tested (2048). Audit committee was significant in 94% of the 2048 models that were tested.

5.10.6.3 Test for robustness of the full model when GLS is used

A robustness test for the overall financial sustainability model was carried out when GLS was used, as per Table 38.

Table 38: ***Test for Robustness of the Full Model when GLS is used***

Core variables	% Sig.	Avg. T	Obs.
Core variables			
NUM MEM	0.852	1.729466	64
TOT ASST	0.956	0.912265	64
Testing Variable			
AUD COM	1	2.445201	32
BOD SIZ	0.875	1.747233	32
Q2	1	2.146504	32
Q5	0	1.286335	32

In the results above, audit committee and Q21 were significant in all the models (32) that were tested, while board size was significant in 87.5% of the models that were tested. These two variables are therefore recommended in addition to the core variables to be used in the model.

5.10.6.4 Test for regression assumptions for the overall financial sustainability model

Regression assumptions were tested for the overall model; the results are presented below.

5.10.6.4.1 Normality assumption test for the overall financial sustainability model

The results for the normality assumption test for the overall financial sustainability model are presented in Figure 28.

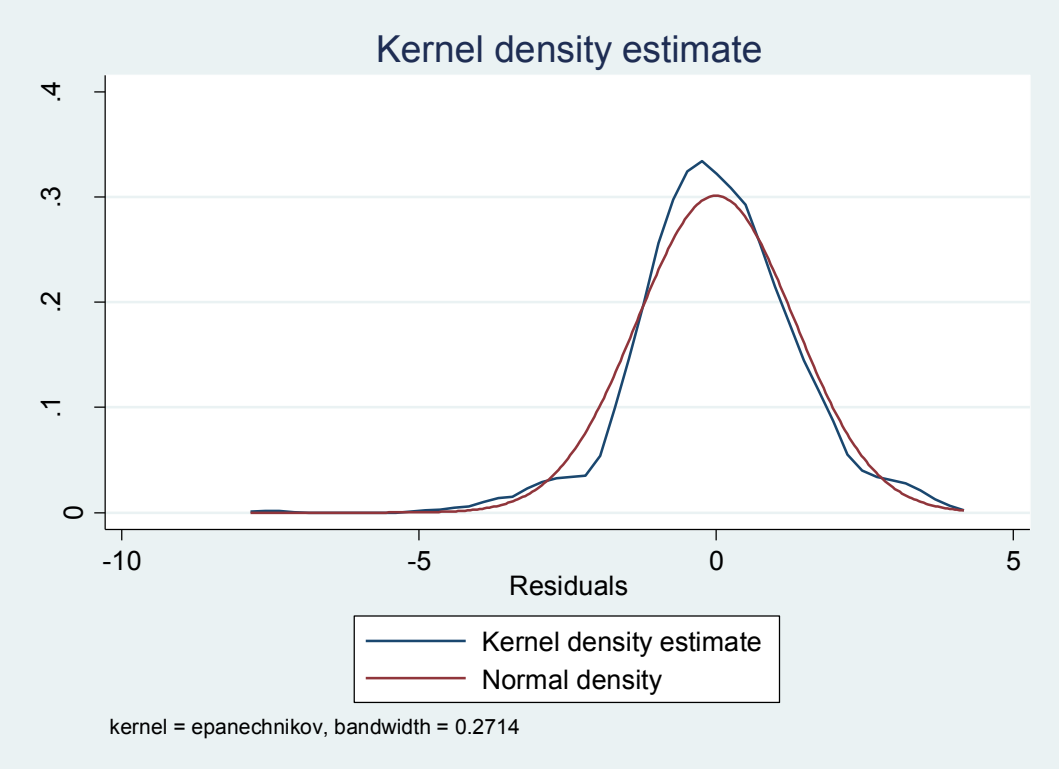

Figure 28. Normality assumption test for the overall financial sustainability model.

Figure 28 shows the normality assumption test for the overall study model. The data are normally distributed, therefore the normality assumption is satisfied.

5.10.6.4.2 Multicollinearity assumption test for the overall financial sustainability model

A multicollinearity assumption test was undertaken for the overall model. The results are presented in Table 39.

Table 39: Results for Multicollinearity Assumption Test for the Overall Study Model

Variable	VIF	1/VF
lgAssets	6.63	0.150886
lgSavings	6.10	0.164029
q51	1.82	0.548335
q61	1.77	0.563821
no_of_memb~s	1.64	0.609841
q41	1.57	0.635924
age_years	1.49	0.671132
board_size	1.47	0.681242
q71	1.33	0.749913
q81	1.32	0.759537
q91	1.29	0.772244
q31	1.28	0.780395
audit_comm~e	1.21	0.828357
q21	1.12	0.892910
Mean VIF	2.15	

Table 39 shows the results of the multicollinearity assumption test for the overall financial sustainability model. The assumption of multicollinearity is not violated here as every 1/VIF is more than 0.1.

5.18.3 Homoscedasticity assumption test for the overall financial sustaianability model

A test of homoscedasticity assumption was carried out for the overall study model. The results are presented in Table 40.

Table 40: Homoscedasticity Assumption Test for the Overall Financial Sustainability Model

Cameron & Trivedi's decomposition of IM-test			
Source	chi2	df	p
Heteroskedasticity	195.13	119	0.0000
Skewness	23.29	14	0.0557
Kurtosis	2.90	1	0.0886
Total	221.32	134	0.0000

The test for homoscedasticity was significant since Pr= 0.000, therefore the null hypothesis of constant variance was rejected and it was concluded that heteroscedasticity exists in the overall financial sustainability model.

5.10.6.5 Full regression model using GLS approach

Due to the existence of heteroscedasticity in the overall model, the GLS approach was applied. The results of the overall financial sustainability model using GLS are presented in Table 41.

Table 41: GLS Regression Results for the Overall Study Model

Random-effects GLS regression				Number of obs =	838	
Group variable: sacco				Number of groups =	136	
R-sq: within = 0.0295				Obs per group: min =	1	
between = 0.1233				avg =	6.2	
overall = 0.0680				max =	7	
				Wald chi2(14) =	37.42	
corr(u_i, X) = 0 (assumed)				Prob > chi2 =	0.0006	
lggfss	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
NUM MEM	-.00007	.0000226	-3.10	0.002	-.0001144	-.0000257
TOT DEP	-.0412091	.0557413	-0.74	0.460	-.15046	- .0680419
AUD COM	-.1331975	.0436542	-3.05	0.002	-.2187581	-.0476368
BOD SIZ	-.0938316	.0419883	-2.23	0.025	-.1761271	-.0115361
TOT ASST	.2034277	.0624591	3.26	0.001	.0810102	.3258452
SAC AGE	-.0105139	.0105514	-1.00	0.319	-.0311942	.0101664
q21	.1483064	.0721349	2.06	0.040	.0069246	.2896882
q31	.0104439	.090871	0.11	0.909	-.1676601	.1885478
q41	-.0263253	.1079553	-0.24	0.807	-.2379138	.1852632
q51	-.0686129	.0924262	-0.74	0.458	-.2497649	.112539
q61	-.0253469	.0987691	-0.26	0.797	-.2189309	.168237
q71	.029775	.1042292	0.29	0.775	-.1745104	.2340605
q81	-.0310595	.0966151	0.32	0.748	-.2204216	.1583026
q91	.0417613	.1564511	0.27	0.790	-.2648772	.3483999
_cons	-.4092536	.7749629	-0.53	0.597	-1.928153	1.109646
sigma_u	.88982146					
sigma_e	.99738951					
rho	.44318615	(fraction of variance due to u_i)				

The results indicate that using GLS for all the study constructs, NUM MEM, AUD COM, BOD SIZ, TOT ASST and LIQ PRO, are significant. These constructs have a p-value of less than 0.05. All other constructs are insignificant.

5.10.6.6 OLS regression model for individual constructs found to be significant

The initial test of hypotheses above was done for each variable based on the constructs forming the variable. From the analysis above, NUM MEM (representing financial outreach), BOD SIZ and AUD COM (representing SACCO governance), TOT ASST (representing SACCO size), SAC AGE and LIC PRO, SHA DEP, CRE MAN (representing financial regulation) were found to significantly influence financial sustainability, as measured by FSS. A regression model using the OLS approach for the candidates, with high significant level is shown in Table 42.

Table 42: OLS results for constructs which were earlier found to significantly influence FSS

Source	SS	df	MS		Number of obs = 847
Model	125.021203	8	15.6276504		F(8, 838) = 8.84
Residual	1481.69361	838	1.76813079		Prob > F = 0.0000
Total	1606.71481	846	1.89919008		R-squared = 0.0778
					Adj R-squared = 0.0690
					Root MSE = 1.3297
lggfss	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
SAC AGE	.0032276	.0059989	0.54	0.591	-.0085471 .0150022
TOT ASST	.1892789	.0356518	5.31	0.000	.1193016 .2592561
BOD SIZ	-.0844063	.0312086	-2.70	0.007	-.1456624 -.0231501
AUD COM	-.1151401	.0398866	-2.89	0.004	-.1934294 -.0368508
NUM MEM	-.0000745	.0000161	-4.63	0.000	-.000106 -.0000429
q21	.15495	.0387882	3.99	0.000	.0788166 .2310834
q51	-.1145802	.0444017	-2.58	0.010	-.2017319 -.0274286
q61	.0319003	.0509768	0.63	0.532	-.0681569 .1319576
_cons	-1.119543	.4919378	-2.28	0.023	-2.085118 -.1539679

Table 42 shows the OLS results for the constructs that were earlier found to be significantly influencing FSS. Only SACC AGE and CRE MAN were found to be insignificant, with a p-value greater than 0.05. These results are significant at a 5% significance level.

5.10.6.7 Homoscedasticity assumption test for significant constructs

A homoscedasticity assumption test was done for the significant variables discussed in the above section. The results are presented in Table 43.

Table 43: Homoscedasticity Test for Significant Constructs

Cameron & Trivedi's decomposition of IM-test			
Source	chi2	df	p
Heteroskedasticity	109.02	44	0.0000
Skewness	13.16	8	0.1066
Kurtosis	3.32	1	0.0684
Total	125.50	53	0.0000

The test for the null hypothesis that the homogeneity of variance of the residuals is rejected based on these results. The reported p-value (0.000) is less than 0.05, indicating evidence of the significant existence of heteroscedasticity.

A regression model was thus fit using the GLS approach to solve the problem of heteroscedasticity in the model, the results of which are shown in Table 44.

Table 44: GLS Regression Results for Significant Variables

Random-effects GLS regression				Number of obs	=	847
Group variable: sacco				Number of groups	=	138
R-sq: within = 0.0279				Obs per group: min	=	1
between = 0.1205				avg	=	6.1
overall = 0.0656				max	=	7
				Wald chi2(8)	=	36.54
corr(u_i, X) = 0 (assumed)				Prob > chi2	=	0.0000
lggfss	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
SAC AGE	-.0116416	.0104664	-1.11	0.266	-.0321554	.0088722
TOT ASST	.1758919	.0483415	3.64	0.000	.0811443	.2706396
BOD SIZ	-.0914805	.041598	-2.20	0.028	-.1730112	-.0099499
AUD COM	-.1313142	.0429502	-3.06	0.002	-.2154951	-.0471334
NUM MEM	-.0000748	.0000223	-3.35	0.001	-.0001184	-.0000311
q21	.1423548	.0726321	1.96	0.050	-1.50e-06	.2847111
q51	-.0849752	.0840341	-1.01	0.312	-.2496789	.0797285
q61	-.0172174	.0951597	-0.18	0.856	-.203727	.1692923
_cons	-.6623019	.7051729	-0.94	0.348	-2.044415	.7198116
sigma_u	.91596444					
sigma_e	.99755262					
rho	.45743957	(fraction of variance due to u_i)				

Table 44 shows the GLS regression results for the significant variables in the model. As shown in the above table, SAC AGE SHA DEP and CRE MAN are now insignificant with a p-value greater than 0.05. The researcher tried to improve the model by removing the non-significant variable and checking the performance of the

model. The following results were obtained, which were more refined than the previous model's, as the overall R^2 increased.

Table 45: GLS Regression Results Excluding Insignificant Variables

Random-effects GLS regression				Number of obs =	851	
Group variable: sacco				Number of groups =	138	
R-sq: within = 0.0233				Obs per group: min =	1	
between = 0.1347				avg =	6.2	
overall = 0.0721				max =	7	
				Wald chi2(6) =	35.72	
corr(u_i, X) = 0 (assumed)				Prob > chi2 =	0.0000	
lggfss	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
lgAssest	.1529732	.0433261	3.53	0.000	.0680557	.2378907
board_size	-.0901488	.0409465	-2.20	0.028	-.1704026	-.0098951
audit_committee	-.1362221	.0425059	-3.20	0.001	-.2195321	-.052912
no_of_members	-.0000748	.0000221	-3.38	0.001	-.0001181	-.0000314
q21	.1422317	.0695742	2.04	0.041	.0058689	.2785946
q51	-.1008436	.0697322	-1.45	0.148	-.2375162	.0358289
_cons	-.4254041	.6625262	-0.64	0.521	1.723932	.8731234
sigma_u	.90714531					
sigma_e	1.0049439					
rho	.44898594	(fraction of variance due to u_i)				

Table 45 shows the GLS regression results for the overall model after excluding the insignificant variables. The results indicate that all the constructs are insignificant, with the exception of SHA DEP with a p-value of 0.148, which is greater than 0.05. The researcher tried to improve the model by removing the non-significant construct and checking the performance of the model. The following results were obtained, which were more refined than the previous model's. The contribution of a unit of each of the significant variables to the FSS is as shown in Table 46.

Table 46: Overall Regression Model Based on GLS Results

TOT ASST	0.1529 (Size)
BOD SIZE	0.8125 (Coporate governance)
AUD COM	0.7308 (Coporate governance)
NUM MEM	0.0998 (Financial outreach)
LIC PRO	1.1739 (Financial regulations) - making regulations easier.

The overall regression model based on GLS results is presented as follows:

FSS = 2.6632 + 1.4222TOT ASST + 0.8126BOD SIZ + 0.7308AUD COM + 0.9998NUM MEM + 1.3875LIC PRO

Where: TOT ASST = Total assets

BOD SIZ = Board size

AUD COM = Audit committee

NUM MEM = Number of members

LIC PRO = Licensing provisions – (Licencing requirements made easier for SACCOs)

The constant term in the overall regression model of the study is not significant, as the absence of the rest of the variables would result in no financial sustainability. The constant in the working model was thus dropped to read as follows:

FSS = 1.4222TOT ASST + 0.8126BOD SIZ + 0.7308AUD COM + 0.9998NUM MEM + 1.3875LIC PRO

5.11 Conclusion

This chapter presented the findings of the study, using the GLS technique to delineate the relationship between the independent variables and the dependent variable (FSS).

In the next chapter, a discussion of the findings is presented.

Chapter 6: Discussion of Findings

6.1 Introduction

In this chapter, a discussion of the findings is presented. The findings are linked to the literature to show support for, or a contrast with, previous findings. The main objective of the study was to assess the influence of the measures of financial outreach, financial regulation, corporate governance, size and age on the financial sustainability of SACCOs in Kenya, both individually and simultaneously.

6.2 Financial outreach

Financial outreach was measured by the number of members and total deposits.

6.2.1 Number of members

Table 19 highlighted the OLS regression results for number of members and FSS. The results showed that a significant relationship existed between the number of members and financial sustainability, as measured by FSS. A p-value of 0.009 was reported, which is less than 0.05, hence there was a significant influence.

The present study findings thus indicate that the number of members exerts a positive significant influence on FSS. These findings support those of Zerai and Rani (2012), Sebhatu, (2011), Babandi (2011), Azar and Webster (2009), and Hermes et al. (2008), who found a positive significant relationship between the number of members and financial sustainability. As the number of members increases, total income also increases in the form of registration fees and interest income from loans issued. As a result, financial sustainability improves. The study results contradict the findings of Conning (1999) and Gatimu and Frederick (2014), whose studies of SACCOs in Kenya found a negative relationship. A negative relationship was also reported in other studies outside Kenya (Hermes et al., 2008; Magali, 2013; Navajas et al., 2000; Quayes, 2012; Woller & Schreiner, 2002; Zaigham & Asghar, 2011).

Table 13, meanwhile, presents the OLS regression results of total deposits and FSS. The results show that there is no significant relationship between total deposits and financial sustainability as measured by FSS. A p-value of 0.081 was reported, which is more than 0.05. The results were significant at the 5% significance level.

The above results indicate that as the number of members of a SACCO increase, financial sustainability also increases. This is attributed to more incomes collected from the members including entrance fees and savings. The increase in the number of members also leads to expansion of SACCO clientele, to whom SACCO loans are issued. This results to more income being generated by a SACCO hence improvement in financial sustainability. Total deposits to not significantly influence financial sustainability. Deposits received by a SACCO are current liabilities to the SACCO since they are refundable to a member. Deposits are not incomes to a SACCO hence no significant influence on financial sustainability.

The present study findings thus indicate that total deposits did not exert a significant influence on FSS. These findings contradict previous findings by Sebhatu (2011), Nyamsogoro (2010) and Azar and Webster (2009), who found that a positive relationship exists. Further, the findings of the current study also contradict previous findings that indicated a negative influence of total deposits on the financial sustainability of SACCOs (Hermes et al., 2008; Navajas et al., 2000; Zaigham & Asghar, 2011).

Financial outreach, the first independent variable, exerts a significant influence on financial sustainability, because as the number of members increases, so does the FSS. The findings of the current study thus support the institutionalist theory of financial sustainability, which focuses on breadth of financial outreach, which aims at financial deepening. Financial deepening is the creation of financially sustainable SACCOs that are able to provide financial services to the poor in the long run. Financial deepening is achieved when SACCOS are able to increase their membership numbers and offer them financial services that are not available to them elsewhere. As a result, financial exclusion is also minimised. SACCOs are encouraged to generate income internally to cover the costs incurred, as donor

funding and other externally generated funds are not certain (Beck, 2015; Brau & Woller, 2004; Wu, Rui, & Wu, 2012).

6.3 Financial regulation

Financial regulation provisions were tested to determine their influence on FSS.

Table 26 showed the GLS regression results for financial regulation. Here it was found that three constructs of financial regulation (Q2, Q5 and Q6) are significant with a p-value of less than 0.05. This implies that it is the opinion of SACCO managers that Q2 (LIQ PRO), Q5 (SHA DEP) and Q6 (CRE MAN) were the regulation provisions that have a significant influence on the FSS. These results were significant at the 5% significance level.

Financial regulation as discussed earlier aims at protecting the interest of the members and other stakeholders by a defined established body. For example SASRA is a body established under the laws of Kenya to regulate SACCOs offering FOSA. Due to financial regulation, management of SACCOs is improved. This improvement results in profitability of the SACCOs and this helps in achieving financial sustainability as indicated by the results above.

The findings of the current study support those of Onchangwa et al. (2013), Otieno et al. (2013) and Wanyoike (2013), who found a positive relationship between financial regulation and financial sustainability. The positive relationship resulted from cohesion in the financial system, adherence to good business practices, minimised unethical practices like money laundering and fraud, and above all, protection of members' interests (Onchangwa et al., 2013; Otieno et al., 2013).). In other studies, which the current findings support, a significant influence of financial regulation on financial sustainability was reported. Stronger enforcement of the rules and regulations results in better financial performance, and by extension, leads to financial sustainability (Gelauff & Lejour, 2006; Gørgens & Paldam, 2003; Jacobzone, Steiner, Ponton, & Job, 2010; Jalilian, Kirkpatrick, & Parker, 2007; Jazayeri, 2000).

The findings of the present study also support the public interest theory of financial regulation. The study relied upon this theory because first, financial regulation of SACCOs in Kenya aims at protecting the interest of the public in general and the SACCO members, and secondly, financial regulation strives to reduce the chances of SACCO failure by correcting market failure. The public interest theory best explains the financial sustainability of SACCOs. Protection of public interest, including that of SACCO members, and ensuring SACCO profitability, is the key issues emphasised by the public interest theory.

6.4 Corporate governance

SACCOs' corporate governance was measured using board size and audit committee. The board independence measure was dropped because of the existence of collinearity with board size.

6.4.1 Board size

The results in Table 30 show the GLS regression results of board size and FSS. The results show that there is significant relationship between board size and financial sustainability as measured by FSS. A p-value of 0.029 was reported, which is less than 0.05. The results were significant at the 5% significance level. As the number of members on a board increases, so FSS also increases.

The study results indicate that there is a significant effect of board size on financial sustainability of SACCOs. A unit increase in the board size increases the FSS by 0.83116. The results indicate that as board size increases so does FSS. A large number of board members will result to better decisions since the board will be made up of a pool of experts from different sectors of the economy. Better decisions will be made and this will result to better SACCO performance. Better performance will then lead to financial sustainability of SACCOs.

The present study findings indicate that board size exerts a significant influence on FSS. These findings support the previous findings of Andreou et al. (2014), Darmadi

(2011), Erhardt et al. (2003), John et al. (2008), Rose and Munch-Madsen (2013), and Hafsi and Turgut (2013), who found that a positive relationship exists between board size and financial sustainability as measured by FSS. Further, the results contradict the findings of previous studies which reported a negative relationship (Franken & Cook, 2013; Guest, 2009; Kiel & Nicholson, 2003; Siele, 2009).

6.4.2 Audit committee

Table 30 shows the GLS regression results on audit committee and FSS. The results show that a significant relationship exists between audit committees and financial sustainability as measured by FSS. A p-value of 0.000 was reported, which is less than 0.05, hence the significant influence. Based on the above results, the null hypothesis was rejected, thereby concluding that audit committees exert a significant influence on FSS at a 5% level of significance.

The results also indicate that the number of members in the audit committee significantly influences FSS. A unit increase of the audit committee membership increases the FSS by 0.7433. The audit committee helps in keeping suiveilance on the activities of the management. This ensures that the SACCO management also act *bona fide* to the benefit of the members at all times. As a result, financial sustainability is achieved.

The present study findings indicate that audit committees exert a significant influence on FSS. The findings of the present study support previous findings by Abbott et al. (2000), Chau and Leung (2006), Jaggi and Leung (2007), Lin et al. (2006), Laing and Weir (1999), and Zhang et al. (2007), who indicated that audit committees influenced financial sustainability. The current study findings contradict the findings of Rahman and Ali (2006) and Rainsbury et al. (2009), who reported a negative influence of audit committees on financial sustainability.

A SACCO's corporate governance, measured by board size and audit committee, is therefore one of the variables that exerts a significant influence on FSS; an increase in board size and audit committee members translates to an increase in FSS. The

findings of the present studies support the agency theory relied upon by this study and outlined in Chapter Two. To ensure shareholder protection, owners need to incentivise managers and incur agency costs to maximise the firm's value and to better utilise the available resources to make a profit (Caprio & Levine, 2002). The establishment of audit committees for SACCOS aims at making managers aware of their actions, as they will know that they are being assessed. SACCOS will incur costs to maintain the audit committees that help to reduce agency conflict, however.

6.5 Size

SACCO size was measured by total assets. The total income measure was dropped due to the existence of collinearity.

Table 32 shows the OLS regression model results for SACCO size, which highlight that there is a positive contibution of total assests on FSS. Total assets had a p-value of 0.003, which is less than 0.05, hence the significant influence. The results were significant at the 5% significance level.

The results show that there is a positive contribution of total assets on the FSS. An increase in total assets is an indicator of growth of any business. The networth of the business also increases with an increase in assets. The management utilises the assests at their disposal to create income and wealth to the members. The use of assets to generate more income results to increase in FSS as indicated in the results above. Financial sustainabilty of the SACCOs is thereby significantly influenced by n increase in assets in a positive way.

The findings of the present study show that total assets exert a significant influence on FSS, i.e. an increase in total assets results in an increase in FSS. These findings support those of Johnson (2004), Karanja (2013), Mbogo and Ashika (2011) and Odera (2012), among others, who reported that total assets, were positively correlated with FSS. The current study findings contradict findings in other studies which reported a negative influence of total assets on financial sustainability (Akoten et al., 2006; Gweyi & Karanja, 2014; Olando et al., 2012).

The current study findings are in support of the growth of the firm theory outlined in Chapter Two. According to the theory, firm growth in size involves matching resources with opportunities for the purpose of value creation. The theory describes the manner and speed of growth of a firm in a given existing environment. Firm growth in size is related to required capacity to respond to the changing opportunities (Hite & Hesterly, 2001; Lloyd, 1961; Penrose, 1995; Rajan et al., 2000; Wernerfelt, 1984). This theory explains why firms grow in size, the type of growth, and factors contributing to the growth (Rajan et al., 2000). Increase in assets symbolises growth in assets, which has a significant influence on FSS. The growth of the firm theory links financial sustainability, since a firm that is growing in size is also taken to be financially sustainable *ceteris paribus* (Hite & Hesterly, 2001; Lloyd, 1961; Penrose, 1995; Rajan et al., 2000; Wernerfelt, 1984).

6.6 Age

The age of a SACCO was measured by the number of years a SACCO has been in existence. A discussion of the results is presented below.

Table 34 shows the OLS regression results on age and FSS. The results show that a significant relationship exists between a SACCO's age and financial sustainability, as measured by FSS. A p-value of 0.012 was reported, which is less than 0.05, hence significant influence. The results were significant at the 5% significance level.

The results indicate that there is significant influence of age on FSS. As a SACCO ages, growth is anticipated *ceteris paribus.* This concept is well articulated by the growth of the firm theory discussed in Chapter two. Increase in the number of members, increase in assets, enlargement of the loan portfolio and generation of more income are the manifestation of this growth. Eventually, financial sustainability is achieved.

The findings of the present study show that age exerts a significant influence on FSS. These findings support previous findings where a positive influence was reported (Ayayi & Sene, 2010; Barron et al., 2015; Coad et al., 2013; Gaur & Gupta, 2011;

Hui, Radzi, & Kasim, 2013; Huynh & Petrunia, 2010; Kipesha, 2013; Majumdar, 1997; Nyangeri, 2014; Rashid & Koire, 2013; Rose et al., 2010; Takhtaei, 2014), however the findings of the present study contradict other studies that reported a negative influence (Coad, 2007; Loderer & Waelchli, 2009; Thornhill & Amit, 2012). These findings also contradict previous findings by Noordin and Mohtar (2014) and Yildiz et al. (2013), who also reported that firm age does not influence financial sustainability significantly.

The present study findings support the life cycle theory of the firm, which postulates that firms have a life cycle similar to that of living organisms (Penrose, 1952). The theory classifies firms into birth or introduction stage, youth or survival stage, maturity and decline. In each of the above stages, a firm exhibits different characteristics. *Ceteris paribus*, a firm is in a given stage of the life cycle based on its age expressed in years (Aharony, Falk, & Yehuda 2006; Ahmed & Javid, 2009; Frielinghaus, Mostert, & Firer, 2005; Jenkins, Kane, & Velury, 2004; Penrose, 1952; Takhtaei, 2014). As the firm ages, so does its financial sustainability. Younger firms are therefore likely to be less financially sustainable, but this changes with time. The life cycle of firm theory shows the growth in profits and financial sustainability as a firm ages, and later a reduction in profits and financial sustainability during the decline stage (Ayayi & Sene, 2010; Barron, West & Hannan, 2015; Coad et al., 2013; Gaur & Gupta, 2011; Hui, Radzi, Jenatabadi, Abu Kasim, & Radu 2013; Huynh & Petrunia, 2010; Kipesha, 2013; Majumdar, 1997; Nyangeri, 2014; Rashid & Koire, 2013; Rose, Abdullah, & Uli , 2010; Takhtaei, 2014).

6.7 Overall study model

As stated in Chapter Five, the overall study model is presented as follows:

FSS = 1.4222TOT ASST + 0.8126BOD SIZ + 0.7308AUD COM + 0.9998NUM MEM + 1.3875LIC PRO

All the five variables that were hypothesised to exert a significant influence on FSS are represented in the above model, with the exception of age. A total deposit, a construct for financial outreach, was dropped from the final model because it was insignificant. All financial regulation provisions were dropped for being insignificant, with the exception of licensing provisions. Board independence, a construct of SACCOs' corporate governance, was dropped from the model due to the close association with board size, which was explained by the fact that non-executive directors form part of a board. Total income, a measure of a SACCO's size, was dropped due to the existence of collinearity with total assets. This is explained by the fact that as total assets increase, a firm is able to increase its income, and income is generated using the assets. SACCO age, the fifth independent variable, was dropped from the overall model although it significantly influences FSS independently. The variable was dropped because it is insignificant when analysed together with other variables.

6.8 Conclusion

This chapter presented a discussion of the findings of the study as outlined in Chapter Four. All the independent variables of the study were found to exert a significant influence on the financial sustainability of SACCOs when analysed individually. A final overall model of financial sustainability was also outlined at the end of this chapter.

In the next chapter, a summary, conclusions and recommendations from the study are presented.

Chapter 7: Summary, Conclusions and Recommendations

7.1 Introduction

In this chapter, the summary of the empirical results of the study is presented. The managerial implications of the research are described at length, the research contribution is outlined, and finally, a conclusion from the study is drawn.

7.2 Summary of empirical results

The overall objective of this study was to assess the financial sustainability of SACCOs in Kenya. The study adopted a quantitative research paradigm, and a survey research design was adopted that involved the collection of longitudinal data for a period of seven years, from 2008 to 2014. Both secondary and primary data were collected for analysis.

The study pursued six secondary objectives, from which six research hypotheses were formulated. The GLS technique was used in the data analysis. A summary of the findings is discussed below.

Financial outreach was analysed from the breadth of outreach perspective, which was measured by both the number of members and total deposits. This was an indication that the number of members exerts a significant positive influence on FSS at the 5% level of significance. Total deposits did not exert a significant influence on FSS at the 5% significance level.

Financial regulation was classified into eight different financial regulation provisions and the hypotheses were tested on each. Thereafter, a hypothesis for overall regulation was tested. The findings of the study indicate that financial exerts significant influence on FSS. Therefore, a positive relationship exists between the two variables.

The non-significant financial regulation provisions were dropped and thus the final financial regulation model is presented as:

Log (FSS) =1.2156 +0.1228 LIC PRO – 0.0981 SHA DEP + 0.0618 CRE MAN

SACCO governance was measured using board size and audit committees. The study results show that governance, as measured by board size and audit committee, exerts a significant influence on FSS at the 5% level of significance. The final model for SACCO governance was reported in Chapter Five and is shown as follows:

Log (FSS) =2.004015 - 0.80312 BOD SIZ – 0.1286666 AUD COM.

SACCO size was measured by total assets. This shows that a SACCO's size, as measured by total assets, exerts a significant influence on FSS at the 5% level of significance.

Age was measured by the number of years a SACCO had been in existence from the date of registration. The findings of the study show that age does exert a significant influence on FSS at the 5% level of significance.

7.3 Managerial implications of the study

The study looked at the factors that influence the financial sustainability of SACCOs in Kenya. Important managerial implications of the study's findings are discussed in this section.

7.3.1 Conceptualisation of financial outreach

Financial outreach was found to influence FSS positively, but only to the extent of SACCO members. SACCO managers should therefore ensure that they reach out to as many people as possible, offering them financial services in order to ensure that

financial sustainability is achieved. An increase in the number of SACCO members results in increased deposits being received, which in turn ensures that more funds are available to members for borrowing. High-interest income then increases the financial sustainability of SACCOs. *Ceteris paribus*, the higher the total deposits, the more the income received from loans in the form of interest. Where a SACCO is able to generate more revenue internally, and at the same time meet its expenses from this revenue, such a SACCO is financially sustainable. However, the findings of this study did not support this view on SACCO deposits.

7.3.2 Conceptualisation of financial regulation

Financial regulation was found to exert a significant influence on the financial sustainability of SACCOs, which is attributable to strict government regulation on SACCOs through SASRA as well as MIED. The strict financial regulations have helped in the protection of stakeholders' interests especially those of members. As per the descriptive statistics for financial regulation, 64% of the respondents indicated that financial regulation in the SACCO industry is important, while 36% said that it is not necessary. This further indicates the need for financial regulation for SACCOs in Kenya. It is from this perspective that the enforcement of regulatory rules to ensure total conformity is recommended. Furthermore, simplification of these rules may facilitate compliance, and training of the SACCO leadership may go a long way in helping to achieve this.

7.3.3 Conceptualisation of SACCO governance

The findings of the study indicate that governance is one of the factors that influence a SACCO's financial sustainability. A SACCO's board size was also found to influence financial sustainability; as the board size increases, so financial sustainability also increases. A larger board would result in better decisions being made for the benefit of all the stakeholders, and would increase a SACCO's ability to deal with complex situations. This is the case because board members are sourced from different industries in the economy and are considered to have vast knowledge in the field of management. An audit committee, the other measure of governance,

was also found to exert a significant influence on financial sustainability; SACCOs that had a large number of audit committee members were more likely to be financially sustainable than those that did not. This could be attributed to enhancement of the firm's internal control systems by the audit committees, resulting in accountability of the BOD. Furthermore, the existence of audit committees reduces agency conflict, where the BOD will always work *bona fide* to the benefit of the SACCO for fear of reprisals.

7.3.4 Conceptualisation of SACCO size

The size of a SACCO, as measured by total assets, was found to influence financial sustainability. The implication of this is that large SACCOs are utilising the benefits of economies of scale as they have more assets than other SACCOs. Growth in total assets will also result in high income generation, which further helps in attaining financial sustainability status. The study recommends that SACCO management should always pursue these economies of scale to the benefit of their SACCOs, but at the same time manage their operational costs in order to achieve financial sustainability.

7.3.5 Conceptualisation of a SACCO's age

Age was found to exert a significant influence on financial sustainability; new, mid-age and old SACCOs had significant differences in their financial sustainability. As a SACCO ages, its financial sustainability also improves, which could be attributed to an improvement in performance over time.

7.4 Key contribution of the research

The key contributions of the current study are: contribution to theory, empirics, methodology and practice. These are discussed below.

Contribution to theory: As stated earlier, FSS is measured in monetary terms as per the money measurement concept of accounting. The present study has developed a model that best defines FSS as follows:

FSS = 2.6632 + 1.4222TOT ASST + 0.8126BOD SIZ + 0.7308AUD COM + 0.9998NUM MEM + 1.3875LIC PRO

Where: TOT ASST = Total assets

BOD SIZ = Board size

AUD COM = Audit committee

NUM MEM = Number of members

LIC PRO = Licensing provisions – (Licencing requirements made easier for SACCOs)

The model indicates that non-monetary measures of financial sustainability are also as important, which is a key contribution to the theory of financial sustainability in accounting and finance. These measures are human capital as represented by BOD and audit committees, financial regulations, and financial outreach which brings about confidence in the financial system for the targeted clientele.

Empirics: In the literature review, a number of research gaps were outlined regarding the factors that influence the financial sustainability of SACCOs in Kenya. The study has thus delineated the relationship that exists between financial outreach, financial regulation, corporate governance, size, age and FSS, both individually and simultaneously. The study has also documented the financial sustainability status of SACCOs in Kenya.

Methodology: To the best of the researcher's knowledge, a GLS analysis technique of panel data has not previously been applied to SACCOs in Kenya. A research gap thus existed on the factors influencing financial sustainability individually and simultaneously, as well as the application of the GLS analysis technique. The present study determined financial sustainability factors and developed a model for determining the financial sustainability status for SACCOs, while applying the GLS technique, thus contributing to the methodology. Furthermore, the locale of the study was the Mount Kenya region, which is home to over 50% of SACCOs in Kenya. Panel data for a period of seven years were collected making the current study more reliable, and an overall model that best explains FSS has been developed.

Practice: The study has made an immense contribution to practice by documenting the financial sustainability status of SACCOs in Kenya. The study period incorporated the impact of the global financial crisis contagion; the post-election violence of 2008; the Al-Shabaab attacks; and the banking revolution. From the study findings, SACCOs in Kenya are financially sustainable; therefore the going concern status of these institutions is not threatened. This information is vital and can be used by MIED to build the confidence of the public and other stakeholders on the financial foundation of SACCOs in Kenya. A conceptualisation of financial sustainability factors as well as the managerial implications has been discussed, thus contributing to SACCO policy issues, and SACCO policymakers as well as policymakers in other institutions in the financial sector will find the findings of this study invaluable. Further, the recommendations of the study provide insights into how to rescue ailing SACCOs in Kenya and ameliorate the existing situation.

Still on the study's contribution to practice, the study has developed a model for financial regulation that links the provisions of regulations to FSS analysing financial sustainability. This model can be replicated in other institutions in both financial and non-financial sectors. The study has also developed a model that links SACCOs' corporate governance measures to financial sustainability as measured by FSS, which can be replicated in other financial institutions including banks. Finally, an overall model for financial sustainability has been developed and documented in this study, which considers the determinants of financial sustainability as measured by

FSS when analysed together. It is recommended that the model be used to determine the financial sustainability status of other institutions in the finance sector.

Finally, the study opens the doors for further research by academics and policymakers. This has been achieved by outlining the directions for further research.

7.5 Conclusion

This study sought to determine the factors that influence the financial sustainability of SACCOs in Kenya by checking the influence of the measures of each variable on FSS individually and simultaneously and finally all variables simultaneously. Six hypotheses were formulated to help achieve the stated study objective.

The first secondary objective was to determine the influence of financial outreach on FSS. The first study hypotheses stated that *financial outreach does not exert a significant influence on the financial sustainability of SACCOs*. Based on the study findings the hypothesis was upheld, but only to the extent of total deposits; the numbers of members showed a significant influence on FSS. This conclusion is supported by other studies reviewed.

The second objective sought to determine the influence of financial regulation on FSS. The hypothesis stated that *financial regulation does not exert a significant influence on the financial sustainability of SACCOs*. Financial regulation provisions showed a significant influence on financial sustainability, thus it was concluded that financial regulation exerts a significant influence on FSS, which is as per a number of previous studies.

The third objective sought to determine the influence of SACCOs' corporate governance on financial sustainability. The hypothesis under this objective stated that *corporate governance exerts no significant influence on the financial sustainability of SACCOs*. All the measures of SACCOs' corporate governance indicated significant influence on financial sustainability, thus it was concluded that board size and audit

committees do exert a significant influence on FSS. The results also support the findings of other studies, as reported in Chapter Six.

In the fourth objective, the study sought to determine the influence of a SACCO's size on financial sustainability. The hypothesis stated that s*ize does not exert a significant influence on the financial sustainability of SACCOs.* Total assets were found to significantly influence financial sustainability, i.e. a SACCO's size does exert a significant influence on FSS. A number of studies in the literature reviewed had similar results to those of the present study.

The fifth study objective aimed at determining the influence of age on financial sustainability. The hypothesis stated that *age does not exert a significant influence on financial sustainability.* The null hypothesis was not rejected, thus a SACCO's age does exert a significant influence on FSS. These findings support those of studies described in the literature review.

Finally, the study aimed at determining the influence of the five variables combined on FSS. The hypothesis stated that *the combined factors do not exert a significant influence on financial sustainability.* The null hypothesis was rejected, thus concluding that the combined factors, with the exception of age, exert a significant influence on FSS.

7.6 Limitations of the study

The present study sought to determine the influence of financial outreach, financial regulation, corporate governance, size and age on FSS, and makes important contributions to the management of SACCOs. Despite these, the study was affected by a number of limitations.

First, in terms of secondary data, some SACCOs had not supplied their required financial statements to the Ministry, and some had not filed their financial statements for some years, resulting in gaps in the data collected. Further, during the administration of the questionnaires, it became apparent that some managers were

not familiar with the regulatory rules and provisions, which could have affected the accuracy of the information they provided. Another limitation of the study was that it sampled SACCOs within the Mount Kenya region, which limited the generalisation of the findings. Finally, an accounting perspective was adopted in this study, and both the independent variables and the dependent variable were analysed in accounting terms.

7.7 Recommendations for further research

The following areas are recommended for further research.

First, the study used FSS to measure financial sustainability. It is suggested that other measures of financial sustainability, including operational efficiency, return on assets, and return on equity be used in measuring financial sustainability to confirm or nullify the results of this study.

Accounting-based measures and financial perspectives were used in analysing both the dependent and independent variables, for example financial sustainability measured by FSS is an accounting ratio. It is suggested that other socio-economic variables be included in future studies whose objective is to determine financial sustainability status.

Breadth of financial outreach was considered when measuring financial outreach in this study using number of members and total deposits, however depth of outreach could be measured by load balance and average loan size in future research.

Data for analysis were collected for SACCOs in the Mount Kenya region, thus it is suggested that a study be carried out for SACCOs in other regions in Kenya as well, to determine the significance as well as the financial sustainability status of those SACCOs.

The study has developed three models of testing financial sustainability: the financial regulation model, SACCO governance model and the overall study model. These models can be replicated in other industries including other types of cooperative societies.

References

Abbas, A., Bashir, Z., Manzoor, S., & Akram, M. N. (2013). Determinants of firm's financial performance: An empirical study on textile sector of Pakistan. *Business and Economic Research*, 3(2), 76-86.

Abbott, L. J., Park, Y., & Parker, S. (2000). The effects of audit committee activity and independence on corporate fraud, *Managerial Finance*, 26(11), 55-68

Abdullah, H., & Valentine, B. (2009). Fundamental and ethics theories of corporate governance. *Middle Eastern Finance and Economics*, 4(4), 88-96.

Abraham, A. (2003*). Financial sustainability and accountability: A model for non-profit making organisations.* Paper presented at the AFAANZ 2003 Conference, Brisbane, Australia. Retrieved from http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1781&context=commpapers

Abu-Ali, A., & Al-Bahar, M. (2011). Understanding child survivors of human trafficking: A micro and macro level analysis. *Procedia-Social and Behavioral Sciences*, *30*, 791-796.

Adams, R. B., & Mehran, H. (2012). Bank board structure and performance: Evidence for large bank holding companies. *Journal of Financial Intermediation*, 21(2), 243-267.

Ademba, C. (2010). *Challenges facing Sacco regulations in Africa.* Presentation to the 11th SACCA Congress, Swaziland. Retrieved from http://www.accosca.org/

Aharony, J., Falk, H., & Yehuda, N. (2006). *Corporate life cycle and the relative value: Relevance of cash flow versus accrual financial information*

(Unpublished paper). Retrieved from http://www.bus.brocku.ca/faculty/documents/Corporate_Life_Cycle.pdf

Ahmed, H., & Javid, A. (2009). Dynamics and determinants of dividend policy in Pakistan: Evidence from Karachi stock exchange non-financial listed firms. *International Research Journal of Finance and Economics*, 29, 110-125.

Akoten, J. E., Sawada, Y., & Otsuka, K. (2006). The determinants of credit access and its impacts on micro and small enterprises: The case of garment producers in Kenya. *Economic development and cultural change*, 54(4), 927-944.

Alecia, E. O. O., Mule, R. K., Nyongesa, D., Aila, F. O., Momanyi, G., Ogut, A. S., & Muchoki, M. M. (2013). Effects of commercial bank loans on financial performance of savings and credit co-operative societies in Kisumu, Kenya. *Greener Journal of Economics & Accountancy*, 3(1), 9-19.

Alila, P., & Obado, P. (1990). *Co-operative credit: The Kenyan SACCOs in a historical and development perspective* (Working paper). Institute for Development Studies, University of Nairobi.

Alin, A. (2010). Multicollinearity. *Wiley Interdisciplinary Reviews: Computational Statistics*, *2*(3), 370-374.

Allen, F. (2012). Commentary: The “Big C”: Identifying and Mitigating Contagion. In *Proceedings-Economic Policy Symposium-Jackson Hole* (pp. 89-96). Federal Reserve Bank of Kansas City.

Allen, L., & Rai, A. (1996). Operational efficiency in banking: An international comparison. *Journal of Banking & Finance*, 20(4), 655-672.

Almajali, A. Y., Alamro, S. A., & Al-Soub, Y. Z. (2012). Factors affecting the financial performance of Jordanian insurance companies listed at Amman Stock Exchange. *Journal of Management Research,* 4(2), 266-289.

Alukwe, G. H., Ngugi, P. K., Ogollah, K., & Orwa, G. (2015). Corporate governance challenge to regulation compliance by deposit taking savings and credit cooperative societies in Kenya. *International Journal of Academic Research in Business and Social Sciences*, 5(3), 179-193.

Amess, K., & Howcroft, B. (2001). Corporate governance structures and the comparative advantage of Credit Unions. *Corporate Governance: An International Review*, 9(1), 59-65.

Anderson, B. S., & Eshima, Y. (2013). The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs. *Journal of Business Venturing Insights*, 28(3), 413-429.

Andreou, P. C., Louca, C., & Panayides, P. M. (2014). Corporate governance, financial management decisions and firm performance: Evidence from the maritime industry. Transportation Research Part E: *Logistics and Transportation Review*, 63, 59-78.

Arun, T. (2005). Regulation for Development: The Case of Microfinance. *The Quarterly Review of Economics and Finance*, 45, 346-357.

Australian Government Productivity Commission. (2006). *Potential benefits of the National Reform Agenda.* Retrieved from http://www.pc.gov.au/research/supporting/national-reform-agenda/nationalreformagenda.pdf

Ayayi, A. G., & Sene, M. (2010). What drives microfinance institution's financial sustainability. *The Journal of Developing Areas*, 44(1), 303-324.

Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2011). *Small vs. young firms across the world: Contribution to employment, job creation, and growth* (WPS5631). Policy Research Working Paper, World Bank.

Azar, S. G., & Webster M. (2009). *Rural outreach through group methodologies: Case studies in Mexico, Peru and the Philippines.* Madison, WI: World Council of Credit Unions.

Babalola, Y. A. (2013). The effect of firm size on firms' profitability in Nigeria. *Journal of Economics and Sustainable Development,* 4(5), 90-94.

Babandi, G. G. (2011). Micro finance institutions in Nigeria outreach and sustainability: Questionnaire, survey findings. *International Journal of Business and Social Science*, 2(9), 126-129.

Baker, A. (2008). Credit union regulation and the financial services authority: Less is more, but better! *International Journal of Law and Management*, 50(6), 301-315.

Balkenhol, B. (2009). *Micro finance and public policy: Outreach, performance and efficiency.* Geneva, Switzerland: Palgrave Macmillan.

Barron, D. N., West, E., & Hannan, M. T. (2015). A time to grow and a time to die: Growth and mortality of credit unions in New York City, 1914-1990. *American Journal of Sociology*, 100(2), 381-421.

Baur, D. G. (2012). Financial contagion and the real economy. *Journal of Banking Finance*, *36*(10), 2680-2692.

Beck, T. (2015). Cross-Border Banking and Financial Deepening: The African Experience. *Journal of African Economies*, 24(1), i32-i45.

Berman, N., & Martin, P. (2012). The vulnerability of sub-Saharan Africa to financial crises: the case of trade. *IMF Economic Review*, *60*(3), 329-364.

Bewick, V., Cheek, L., & Ball, J. (2005). Statistics review 14: Logistic regression. *Critical Care (London, England), 9*(1), 112-118.

Bezboruah, K. C., & Pillai, V. (2014). Exploring the participation of women in financial cooperatives and credit unions in developing countries. *International Journal of Voluntary and Non-profit Organisations,* 26(3), 913-940.

Bhagat, S., & Black, B. (2001). The non-correlation between board independence and long-term firm performance. *Journal of Corporation Law*, 27, 231-73.

Bhagat, S., & Jefferis, R. (2002). *The econometric of corporate governance studies*. Cambridge, MA: MIT Press.

Bhattacharyya, S., & Saxena, A. (2009). *Does the firm size matter? An empirical enquiry into the performance of Indian manufacturing firms* (No. 13029). MPRA Working Paper. Retrieved from https://mpra.ub.uni-muenchen.de/13029/1/MPRA_paper_13029.pdf

Black, E. L. (1998). *Which is more value-relevant: Earnings or cash flows?* Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=118089.

Blinder, A. S. (2010). It's broke, let's fix it: Rethinking financial regulation. *International Journal of Central Banking,* 6(4), 277-330.

Bliss, B. A., Cheng, Y., & Denis, D. J. (2015). Corporate payout, cash retention, and the supply of credit: Evidence from the 2008-2009 credit crises. *Journal of Financial Economics,* 115(3), 521-540.

Bodie, Z., Merton, R. C., & Cleeton, D. L. (2009). *Financial economics* (2nd ed.). London, UK: Pearson.

Brau, J. C., & Woller, G. M. (2004). Microfinance: A comprehensive review of the existing literature. *Journal of Entrepreneurial Finance*, 9(1), 1-27.

Bryman, A. (2008). *Social research methods* (3rd ed.). Oxford, UK: Oxford University Press.

Bwana, K. M., & Mwakujonga, J. (2013). Issues in SACCOS development in Kenya and Tanzania: The historical and development perspectives. *Developing Country Studies*, 3(5), 114-122.

Canback, S., Samouel, P., & Price, D. (2006). Do diseconomies of scale impact firm size and performance? A theoretical and empirical overview. *ICFAI Journal of Managerial Economics*, 4(1), 27-70.

Caprio, G., & Levine, R. (2002). *Corporate governance in finance: Concepts and international observations.* Paper prepared for the 2002 World Bank, IMF and Brookings Institution Conference, "Building the Pillars of Financial Sector Governance: The Roles of the Public and Private Sectors." Retrieved from http://siteresources.worldbank.org.ezproxy.uct.ac.za/DEC/Resources/corporategover_finance.pdf

Carrizosa, M. T. (2007). *Firm growth, persistence and multiplicity of equilibrium: An analysis of Spanish manufacturing and service industries.* (Doctoral thesis). Retrieved from http://dialnet.unirioja.es/servlet/tesis?codigo=8107

Chambers, C., & Ryder, N. (2008). The funding of credit unions: Where has all the money gone? *Journal of Social Welfare and Family Law*, 30(3), 243-252.

Chatfield, C. (2004). *The analysis of time series: An introduction* (6th ed.). New York, NY: Chapman & Hall/CRC.

Chau, G., & Leung, P. (2006). The impact of board composition and family ownership on audit committee formation: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation*, 15(1), 1-15.

Chenuos, N. K., Mohamed, A., & Bitok, S. K. (2014). Effects of corporate governance on Micro finance institutions financial sustainability in Kenya. *European Journal of Business and Management*, 6(30), 71-81.

Cheruiyot, T. K., Kimeli, C. M., & Ogendo, S. M. (2012). Effect of Savings and Credit Co-operative Societies Strategies on Member's Savings Mobilization in Nairobi, Kenya. *International Journal of Business and Commerce*, 1(11), 40-63.

Chiumya, C. (2006). *The regulation of microfinance institutions: A Zambian case study.* (Doctoral thesis). Retrieved from

http://www.microfinancegateway.org/sites/default/files/mfg-en-case-study-the-regulation-of-microfinance-institutions-a-zambian-case-study-2006.pdf

Coad, A. (2007). *Firm growth: A survey.* (Working Paper No. 0703). Papers on Economics and Evolution, Max Planck Institute of Economics, Jena, Germany. Retrieved from http://www.econstor.eu/bitstream/10419/31823/1/543493687.pdf

Coad, A., Segarra, A., & Teruel, M. (2013). Like milk or wine: Does firm performance improve with age? *Structural Change and Economic Dynamics*, 24, 173-189.

Coglianese, C. (2012). *Measuring regulatory performance: Evaluating the performance of regulation and regulatory policy.* (Expert Paper No. 1). OECD, Paris, France. Retrieved from http://www.oecd.org/gov/regulatory-policy/1_coglianese%20web.pdf

Coles, J. L., Daniel, N. D., & Naveen, L. (2008). Boards: Does one size fit all? *Journal of Financial Economics,* 87(2), 329-356.

Conning, J. (1999). Outreach, sustainability and leverage in monitored and peer-monitored lending. *Journal of Development Economics*, 60(1), 51-77.

Conyon, M. J., & Peck, S. I. (1998). Board control, remuneration committees, and top management compensation. *Academy of Management Journal*, 41(2), 146-157.

Cooperative Bank of Kenya (2008). The effectiveness of a SACCO model as a finance service. Cooperative movement: International Labour Office, World Bank.

Copestake, J. (2007). Mainstreaming microfinance: Social performance management or mission drift? *World Development*, 35(10),1721-1738.

Cornelius, S. (2009). Credit unions: Promoting access to consumer savings and credit in South Africa. *Credit Control*, 30(6), 35-40.

Cracknell, D. (2012). *Policy innovations to improve access to financial services in developing countries: Learning from case studies in Kenya.* Retrieved from http://www. cgdev.org/doc/LRS_case_studies/Cracknell_Kenya. Pdf.

Cull, R., & Morduch, J. (2007). Financial performance and outreach: A global analysis of leading micro banks. *The Economic Journal*, 117(517), F107-F133.

Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2009). Microfinance meets the market. *Journal of Economic Perspectives*, 23, 167-92.

Cull, R., Demirgüç-Kunt, A., & Morduch, J. (2011). Does regulatory supervision curtail microfinance profitability and outreach? *World Development*, 39(6), 949-965.

Daily, C. M., Dalton, D. R., & Cannella, A. A. (2003). Corporate governance: Decades of dialogue and data. *Academy of Management Review*, 28(3), 371-382.

Dalton, D. R., Daily, C. M., Johnson, J. L., & Ellstrand, A. E. (1999). Number of directors and financial performance: A meta-analysis. *Academy of Management Journal,* 42(6), 674-686.

Danoshana, M. S., & Ravivathani, M. T. (2013). The impact of the corporate governance on Firm performance: A study on financial institutions in Sri

Lanka. *Merit Research Journal of Accounting, Auditing, Economics and Finance,* 1(6), 118-121.

Darmadi, S. (2011). *Does board size matter? New evidence from two-tier board system*. Paper presented at the 8th International Annual Symposium on Management, University of Surabaya, Indonesia, 19th March. Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1793463

Davis, P., & Brockie, C. (2001). A mis-signalling problem? The troubled performance relationship between credit unions and local government in the UK. *Local Government Studies*, 27(1), 1-18.

Delmar, F., & Wiklund, J. (2008). The effect of small business managers' growth motivation on firm growth: A longitudinal study. *Entrepreneurship Theory and Practice*, 32(3), 437-457.

Djankov, S., McLiesh, C., & Ramalho, R. M. (2006). Regulation and growth. *Economics Letters*, 92(3), 395-401.

Doğan, M. (2013). Does firm size affect the firm profitability? Evidence from Turkey. *Research Journal of Finance and Accounting*, 4(4), 53-59.

Duclos, J. Y. (2002). *Poverty and equity: Theory and estimation*. Canadá: Départament d'économique and CRÉFA, Université Laval.

Equity Bank. (2015). *Equity Bank secures key Tanzania Revenue Authority tax collection appointment.* Retrieved from http://equitybankgroup.com/blog/view/equity-tra.

Erhardt, N. L., Werbel, J. D., & Shrader, C. B. (2003). Board of director diversity and firm financial performance. *Corporate governance: An International Review*, 11(2), 102-111.

Fellegi, I. P. (2003). *Survey methods and practices.* Statistics Canada. Retrieved from http://www.statcan.gc.ca/pub/12-587-x/12-587-x2003001-eng.pdf

Ferguson, C., & McKillop, D. G. (2006). Classifying credit union development in terms of mature, transition and nascent industry types. *The Service Industries Journal*, 20(4), 103-120.

Filene Research Institute. (2011). *Credit union financial sustainability: A colloquium at Harvard University*. Madison, WI: The Institute. Retrieved from https://filene.org/assets/pdf-reports/231_Harvard_Sustainability.pdf

Fisher, F. M., & McGowan, J. J. (1983). On the misuse of accounting rates of return to infer monopoly profits. *The American Economic Review*, *73*(1), 82-97.

Floyd, E., Li, N., & Skinner, D. J. (2014). Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends. *Chicago Booth Research Paper*, 12-01.

Forker, J., & Ward, A. M. (2012). Prudence and financial self-regulation in credit unions in Northern Ireland. *The British Accounting Review*, 44(4), 221-234.

Fort, T. C., Haltiwanger, J., Jarmin, R. S., & Miranda, J. (2013). How firms respond to business cycles: The role of firm age and firm size. *IMF Economic Review*, 61(3), 520-559.

Fox, N., Hunn, A., & Mathers, N. (2007). *Sampling and sample size calculation.* The NIHR Research Design Service for the East Midlands/Yorkshire & the Humber. Retrieved from http//www.webpages.uidaho.edu/ed571/571-modules/m3/nihs-sampling_sample_size_calculation.pdf

Franken, J. R. V., & Cook, M. L. (2013). *Impact of board structure and process on cooperative performances.* Paper presented at the Agricultural & Applied Economics Association's AAEA & CAES Joint Annual Meeting, Washington, DC. Retrieved from http://ageconsearch.umn.edu/bitstream/149420/2/5-21-13,Endogeneity%20of%20Coop%20Gov%20%26%20Performance.pdf

Frielinghaus, A., Mostert, B., & Firer, C. (2005). Capital structure and the firm's life stage. *South African Journal of Business Management*, 36(4), 9-18.

Galema, R., Lensink, R., & Mersland, R. (2012). Do powerful CEOs determine microfinance performance? *Journal of Management Studies*, 49(4), 718-742.

Gallo, P. J., & Christensen, L. J. (2011). Firm size matters: An empirical investigation of organisational size and ownership on sustainability-related behaviours. *Business & Society*, 50(2), 315-349.

Gatimu, E. M., & Frederick, M. K. (2014). Assessing institutional factors contributing to loan defaulting in microfinance institutions in Kenya. *Journal of Humanities and Social Science,* 19, 105-123.

Gaur, J., & Gupta, R. (2011). Comparing firm performance on the basis of age, size, leverage, and group affiliation in Indian IT industry. *Romanian Journal of Marketing*, 3, 8-13.

Gelauff, G., & Lejour, A. (2006). *Five Lisbon highlights: The economic impact of reaching these targets* (No. 104). CPB Netherlands Bureau for Economic Policy Analysis, The Hague, Netherlands. Retrieved from http://www.cpb.nl/en/publication/five-lisbon-highlights-economic-impact-reaching-these-targets

Ghafoorifard, M., Sheykh, B., Shakibaee, M., & Joshaghan, S. (2014). Assessing the relationship between firm size, age and financial performance in listed companies on the Tehran Stock Exchange. *International Journal of Scientific Management and Development,* 2(11), 631-635.

Gibbert, M., Ruigrok, W., & Wicki, B. (2008). What passes as a rigorous case study? *Strategic Management Journal*, 29(13), 1465-1474.

Giroud, X., & Mueller, H. M. (2010). Does corporate governance matter in competitive industries? *Journal of Financial Economics*, 95(3), 312-331.

Glass, J. C., McKillop, D. G., & Rasaratnam, S. (2010). Irish credit unions: Investigating performance determinants and the opportunity cost of regulatory compliance. *Journal of Banking & Finance*, 34(1), 67-76.

Goddard, J. A., & Wilson, J. O. S. (2005). US credit unions: An empirical investigation of size, age and growth. *Annals of Public and Cooperative Economics*, 76(3), 375-406.

Goddard, J. A., McKillop, D. G., & Wilson, J. O. S. (2002). The growth of US credit unions. *Journal of Banking and Finance*, 26(12), 2327-2356.

Gonzalez-Vega, C. (2003). Deepening rural financial markets: Macroeconomic, policy and political dimensions. In *Paving the Way Forward for Rural Finance: An International Conference on Best Practices*, Washington, DC.

Gørgens, T., Paldam, M., & Würtz, A. (2003). *How does public regulation affect growth?* (Working paper). University of Aarhus, Denmark. Retrieved from http://www.martin.paldam.dk/Papers/Growth-trade-debt/regulation-growth.pdf

Guest, P. M. (2009). The impact of board size on firm performance: Evidence from the UK. *The European Journal of Finance*, 15(4), 385–404.

Gweyi, M. O., & Karanja, J. (2014). Effect of Financial Leverage on Financial Performance of Deposit Taking Savings and Credit Co-operatives in Kenya. *International Journal of Academic Research in Accounting, Finance and Management Sciences,* 4(2), 176-184.

Gweyi, M. O., Ndwiga, P. M., & Karagu, J. M. (2013), An Investigation of the impact of the co-operative movement in rural development in Kenya. *International Journal of Business and Commerce*, 3(2), 1-13.

Hafsi, T., & Turgut, G. (2013). Boardroom diversity and its effect on social performance: Conceptualization and empirical evidence. *Journal of Business Ethics,* 112(3):463-479.

Hair, J. F. Jr., Money, A. H. Samouel, P., & Page, M. (2007). *Research Methods for Business*. Chichester, UK: John Wiley and Sons.

Hannig, A., & Katimbo-Mugwanya, E. (2000). *How to regulate and supervise microfinance: Key issues in an international perspective.* Financial System Development Project 2000.

Hantke-Domas, M. (2003). The public interest theory of regulation: Non-existence or misinterpretation? *European Journal of Law and Economics*, 15(2), 165-194.

Hartaska, V., & Nadolnyak, D. (2007). Do regulated microfinance institutions achieve better sustainability and outreach? Cross-country evidence. *Applied Economics*, 39(10), 1207-1222.

Hassan, S. U., & Ahmed, A. (2012). Corporate governance, earnings management and financial performance: A case of Nigerian manufacturing firms. *American International Journal of Contemporary Research*, 2(7), 214-226.

Hasselgren, R. (2010). *Corporate governance in Swenglish: A combination of international corporate governance discipline and Swedish cases.* Stockholm, Sweden: Global Corporate Governance Forum. Retrieved from http://www.ifc.org/wps/wcm/connect/d461cd0048a7e50c9fefdf6060ad5911/BICG_CG%2Bin%2BSwenglish%2BSmall.pdf?MOD=AJPERES

Hermes, N., Lensink, R., & Meesters, A. (2008). *Outreach and efficiency of microfinance institutions* (Working Paper). Retrieved from http://core.ac.uk/download/files/153/6427727

Hermes, N., Postma, T. J., & Zivkov, O. (2007). Corporate governance codes and their contents: An analysis of Eastern European codes. *Journal for East European Management Studies,* 53-74.

Hess, D. (2008). The three pillars of corporate social reporting as new governance regulation: Disclosure, dialogue, and development. *Business Ethics Quarterly*, 18(04), 447-482.

Hite, J. M., & Hesterly, W. S. (2001). Research notes and commentaries. The evolution of firm networks: From emergence to early growth of the firm. *Strategic Management Journal,* 22(3), 275-286.

Horváth, R., & Spirollari, P. (2012). Do the board of directors' characteristics influence a firm's performance? The US evidence. *Prague Economic Papers*, 4, 470-486.

Hui, H., Radzi, C. W. J. W. M., Jenatabadi, H. S., Abu Kasim, F., & Radu, S. (2013). The impact of firm age and size on the relationship among organisational innovation, learning, and performance: A moderation analysis in Asian food manufacturing companies. *Interdisciplinary Journal of Contemporary Research in Business,* 5(4), 166-174.

Hutcheson, G. D., & Moutinho, L. (2008). *Statistical modelling for management*. Thousand Oaks: Sage.

Huynh, K. P., & Petrunia, R. J. (2010). Age effects, leverage and firm growth. *Journal of Economic Dynamics and Control,* 34(5), 1003-1013.

Jacobzone, S., Steiner, F., Ponton, E., & Job, E. (2010). *Assessing the impact of regulatory management systems* (No. 17). OECD Working Papers on Public Governance, OECD, Paris, France. Retrieved from http://www.oecd.org/gov/regulatory-policy/45405554.pdf

Jaggi, B., & Leung, S. (2007). Impact of family dominance on monitoring of earnings management by audit committees: Evidence from Hong Kong. *Journal of International Accounting, Auditing and Taxation,* 16(1), 27-50.

Jalilian, H., Kirkpatrick, C., & Parker, D. (2007). The impact of regulation on economic growth in developing countries: A cross-country analysis. *World Development*, 35(1), 87-103.

Jazayeri, A. (2000). *Supervision of Savings and Credit Cooperative Societies (SACCOs).* Rural Finance & Investment Learning Centre, FAO, Rome, Italy. Retrieved from http://www.ruralfinanceandinvestment.org/sites/default/files/Supervision__of__Savings_pdf.pdf

Jenkins, D. S., Kane, G. D., & Velury, U. (2004). The impact of the corporate life-cycle on the value-relevance of disaggregated earnings components. *Review of Accounting and Finance*, 3(4), 5-20.

John, K., Litov, L., & Yeung, B. (2008). Corporate governance and risk-taking. *The Journal of Finance*, 63(4), 1679-1728

Johnson, S. (2004). The impact of microfinance institutions in local financial markets: A case study from Kenya. *Journal of International Development*, 16(3), 501.

Johnson, S., & Nino-Zarazua, M. (2007). *Financial exclusion in Uganda: An analysis of financial service use.* A report prepared for Financial Sector Deepening, Uganda (FSDU). Retrieved from http://www.fsdu.or.ug/pdfs/Financial%20Exclusion%20in%20Uganda%20-%20An%20analysis%20of%20financial%20use.pdf

Johnson, S., & Nino-Zarazua, M. (2011). Financial access and exclusion in Kenya and Uganda. *The Journal of Development Studies*, 47(3), 475-496.

Joppe, M. (2000). *The research process.* Retrieved from https://www.uoguelph.ca/hftm/research-process

Kalkan, A., Erdil, O., & Çetinkaya, Ö. (2011). The relationships between firm size, prospector strategy, architecture of information technology and firm performance. *Procedia - Social and Behavioural Sciences*, 24, 854-869.

Karanja, J. N. (2013). *The Relationship between size and cost efficiency of SACCOs with front office service activity in Kenya* (MBA Project). University of Nairobi, Kenya.

Kaushik, S. K., & Lopez, R. H. (1994). The structure and growth of the credit union industry in the United States: Meeting challenges of the market. *American Journal of Economics and Sociology*, 53(2), 219-243.

Keating, M. O., & Keating, B. P. (2011). Invidious competition or benevolence: Does not-for-profit status constrain the behaviour of credit unions? *Journal of Applied Business Research*, 5(2), 49-55.

Kereta, B. B. (2007). *Outreach and financial performance analysis of microfinance institutions in Ethiopia.* Paper presented at the African Economic Conference, "Opportunities and Challenges of Development for Africa in the Global Arena", Addis Ababa, Ethiopia. Retrieved from http://repository.uneca.org/bitstream/handle/10855/1309/Bib-12958.pdf?sequence=1

Kiel, G. C., & Nicholson, G. J. (2003). Board composition and corporate performance: How the Australian experience informs contrasting theories of corporate governance. *Corporate Governance: An International Review*, 11(3), 189-205.

Kiganda, E. O. (2014). Effect of macroeconomic factors on commercial banks profitability in Kenya: Case of equity bank limited. *Journal of Economics and Sustainable Development*, 5(2), 2222-1700.

Kilonzi, B. K. (2012). *The impact of SASRA regulations on the financial performance of Sacco's in Kenya* (MBA Project). University of Nairobi, Kenya.

Kimoi, A., Ayuma, C., & Kirui, K. (2016). Assessment of credit risk management practises on organizational performance: A survey of savings and credit co-operative societies in Eldoret town, Kenya. *International Journal of Scientific & Engineering Research*, 7(5), 416-425.

Kinde, B. A. (2012). Financial sustainability of microfinance institutions in Ethiopia. *European Journal of Business Management*, 4(15), 1-11.

Kipesha, E. F. (2013). Impact of size and age on firm performance: Evidences from microfinance institutions in Tanzania. *Research Journal of Finance and Accounting*, 4(5), 105-117.

Klapper, L., Laeven, L., & Rajan, R. (2006). Entry regulation as a barrier to entrepreneurship. *Journal of Financial Economics*, 82(3), 591-629.

Krosnick, J. A., & Presser, S. (2010). Question and questionnaire design. In P. V. Marsden & J. D. Wright (eds.). *Handbook of survey research* (2nd ed.). Bingley, UK: Emerald.

Kumar, K. B., Rajan, R. G., & Zingales, L. (1999). *What determines firm size?* (No. w7208). National Bureau of Economic Research. Retrieved from http://ssrn.com/abstract=227556.

Lafourcade, A., Isern, J., Mwangi, P., & Brown, M. (2005). *Overview of the outreach and financial performance of microfinance institutions in Africa.* Retrieved from http://afraca.org/download/afraca_kmp's_regional_experiences/Outreach-and-Financial-Performance-of-Microfinance-Institutions-in-Africa-An-Overview-by-Anne-Lucie-Lafourcade-et-al.pdf

Laing, D., & Weir, C. M. (1999). Governance structures, size and corporate performance in UK firms. *Management Decision*, 37(5), 457-464.

Larcker, D. F., & Richardson, S. A. (2004). Fees paid to audit firms, accrual choices, and corporate governance. *Journal of Accounting Research*, 42(3), 625-658.

Lattimore, D., Baskin, O., Heiman, S. T., & Toth, E. L. (2012). *Public relations: The profession and the practice* (4th ed.). New York, NY: McGraw-Hill.

Lefort, F., & Urzúa, F. (2008). Board independence, firm performance and ownership concentration: Evidence from Chile. *Journal of Business Research*, 61(6), 615-622.

Leitch, G., & Tanner, J. E. (1991). Economic forecast evaluation: Profits versus the conventional error measures. *The American Economic Review*, 580-590.

Lel, U., & Miller, D. P. (2008). International cross-listing, firm performance, and top management turnover: A test of the bonding hypothesis. *The Journal of Finance,* 63(4), 1897-1937.

Leung, D., Meh, C., & Terajima, Y. (2008). Productivity in Canada: Does firm size matter? *Bank of Canada Review*, Autumn, 5-14. Retrieved from http://www.bankofcanada.ca/wp-content/uploads/2010/06/leung2.pdf

Lin, J. W., Li, J. F., & Yang, J. S. (2006). The effect of audit committee performance on earnings quality*. Managerial Auditing Journal*, 21(9), 921-933.

Lind, J., Mutahi, P., & Oosterom, M. (2015). *Tangled Ties: Al-Shabaab and Political Volatility in Kenya.* (IDS Evidence Report; 130). Retrieved from https://opendocs.ids.ac.uk/opendocs/handle/123456789/6018

Llewellyn, D. (1999). *The economic rationale for financial regulation*. London: Financial Services Authority.

Lloyd, L. E. (1961). The Theory of the Growth of the Firm. *Journal of Marketing,* 5(3), 105.

Loayza, N. V., Oviedo, A. M., & Servén, I. (2004), *Regulation and macroeconomic performance*. (Policy Research Working Paper). Washington, DC: World Bank.

Loderer, C., & Waelchli, U. (2009). *Firm age and performance*. (Working paper). Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1342248

Louis, P., Seret, A., & Baesens, B. (2013). Financial efficiency and social impact of microfinance institutions using self-organising maps. *World Development*, 46, 197-210.

Lozano, R., Carpenter, A., & Huisingh, D. (2015). A review of 'theories of the firm' and their contributions to Corporate Sustainability. *Journal of Cleaner Production*, 106, 430-442.

Lukason, O. (2012). Financial performance before failure: Do different firms go bankrupt differently? *International Journal of Trade, Economics and Finance*, 3(4), 305-310.

Lukhele, A. K. (1990). *Stokvels in South Africa: Informal savings schemes by blacks for the black community*. Johannesburg, SA: Amagi Books.

Lundvall, K., & Battese, G. E. (2000). Firm size, age and efficiency: Evidence from Kenyan manufacturing firms. *The Journal of Development Studies*, 36(3), 146-163.

Magali, J. J. (2013). Factors affecting credit default risks for rural savings and credit cooperative societies (SACCOs) in Tanzania. *European Journal of Business and Management,* 5(32), 60-73.

Mai, L., & Li, H. (2016). Optimizing the capital rationing decision with uncertain returns. *The Engineering Economist*, 61(2), 128-143.

Majumdar, S. K. (1997). The impact of size and age on firm-level performance: Some evidence from India. *Review of Industrial Organisation*, 12(2), 231-241.

Makina, D., & Malobola, L. M. (2004). Impact assessment of microfinance programmes, including lessons from Khula Enterprise Finance. *Development Southern Africa*, 21(5), 799-814.

Makori, J., Munene, C., & Muturi, W. (2013). The challenges facing deposit-taking savings and credit-cooperative societies' regulatory compliance in Kenya.

A case of the Gusii Region. *Interdisciplinary Journal of Contemporary Research in Business,* 4(12), 1013-1081.

Malhotra, N. K. (1999). *Marketing research: An applied orientation* (3rd ed.). Harlow, UK: Prentice Hall.

Manos, R., & Yaron, J. (2009). Key issues in assessing the performance of microfinance institutions. *Canadian Journal of Development Studies*, 29(1-2), 101-122.

Mashayekhi, B., & Bazaz, M. S. (2008). Corporate governance and firm performance in Iran. *Journal of Contemporary Accounting & Economics*, 4(2), 156-172.

Matumo, N. G., Maina, K. E., & Njoroge, N. N. (2013). The impact of front office Sacco activity on Sacco performance in Kenya; A case study of Meru South and Maara district in Tharaka Nithi County in Kenya. *Global Advanced Research Journal of Management and Business Studies,* 2(5), 285-290.

Mbogo, M., & Ashika, C. (2011). Factors influencing product innovation in micro finance institutions in Kenya: A case study of MFIs registered with the Association of Microfinance Institutions. *ICSB World Conference Proceedings*, 1. International Council for Small business (ICSB).

McKillop, D., & Ferguson, C. (1998). An examination of borrower orientation and scale effects in UK credit unions. *Annals of Public and Cooperative Economics*, 69(2), 219-242.

McKillop, D., Ward, A. M., & Wilson, J. O. S. (2011). Credit unions in Great Britain: Recent trends and current prospects. *Public Money & Management*, 31(1), 35-42.

Mersland, R., & Strøm, R. Ø. (2009). Performance and governance in microfinance institutions. *Journal of Banking and Finance*, 33(4), 662-669.

MIED. (2012). *SACCOs in Kenya*. Nairobi: Government Printer.

Miriti, J. M. (2014). *Factors influencing financial performance of savings and credit cooperative societies: A case of Capital SACCO, Meru County, Kenya* (MBA Project). University of Nairobi, Kenya. Retrieved from http://erepository.uonbi.ac.ke/bitstream/handle/11295/74255/Miriiti_Factors%20influencing%20financial%20performance%20of%20savings%20and%20credit%20cooperative%20societies.pdf?sequence=1

Mishra, P., & Chandra, T. (2010). Mergers, acquisitions and firms' performance: Experience of Indian pharmaceutical industry. *Eurasian Journal of Business and Economics,* 3(5), 111-126.

Moeinaddin, M., Dehnavi, H. D., & Abadi, H. Z. (2012). The relationship between firm size, debt contracts and the nature of the operations with the accounting conservatism. *Interdisciplinary Journal of Contemporary Research in Business*, 4(6), 628-645.

Moeller, S. B., Schlingemann, F. P., & Stulz, R. M. (2004). Firm size and the gains from acquisitions. *Journal of Financial Economics*, 73(2), 201-228.

Mori, N., Golesorkhi, S., Randøy, T., & Hermes, N. (2015). Board Composition and Outreach Performance of Microfinance Institutions: Evidence from East Africa. *Strategic Change*, 24(1), 99-113.

Moturi, C., & Mbiwa, P. (2015). An evaluation of the quality of management information systems used by SACCOs in Kenya. *The TQM Journal,* 27(6), 798-813.

Mudibo, E. K. (2005). *Report on corporate governance in co-operatives: The East African experience.* Paper presented at the 3rd Pan-African Consultative Forum on Corporate Governance, Dakar, Senegal.

Mudibo, E. K. (2006). *Challenges and opportunities facing the Kenyan savings and credit co-operative movement*. Paper presented at the Africa Savings and Credit Co-operatives Conference, Nairobi, Kenya.

Mueller, S. D. (2011). Dying to win: Elections, political violence, and institutional decay in Kenya. *Journal of Contemporary African Studies*, 29(1), 99-117.

Mugenda, O., & Mugenda, A. (2003). *Research methods: Quantitative and qualitative approaches*. Nairobi, Kenya: African Centre for Technology Studies.

Muhammad, A., D'Souza, A., & Amponsah, W. (2013). Violence, instability, and trade: Evidence from Kenya's cut flower sector. *World Development*, 51, 20-31.

Mumanyi, E. A. L. (2014). Challenges and opportunities facing SACCOs in the current devolved system of government of Kenya: A case study of Mombasa County. *International Journal of Social Sciences and Entrepreneurship*, 1(9), 288-314.

Muriuki, D. M., Nganga, S. I., & Kyalo, T. N. (2014). Analysis of factors influencing investment decisions of SACCO funds in Kenya. *International Journal of Research in Commerce and Management,* 5(7), 1-9.

Muriuki, K. M., & Ragui, M. (2013). Impact of the SACCO Societies Regulatory Authority (SASRA) legislation on corporate governance in Co-operatives in Kenya. *Public Policy and Administration Research*, 3(6), 65-70.

Nair, A., & Kloeppinger-Todd, R. (2007). Reaching rural areas with financial services: Lessons from financial cooperatives in Brazil, Burkina Faso, Kenya, and Sri Lanka. *Agriculture and Rural Development Discussion Paper*, (35).

Navajas, S., Schreiner, M., Meyer, R. L., Gonzalez-Vega, C., & Rodriguez-Meza, J. (2000). Microcredit and the poorest of the poor: Theory and evidence from Bolivia. *World Development*, 28(2), 333-346.

Ndambu, B. J. (2011). *Does regulation increase microfinance performance in Sub-Saharan Africa?* (Technical Note No. 3/2011). Frankfurt School of Finance & Management. Retrieved from http://www.microfinancegateway.org/sites/default/files/mfg-en-paper-does-regulation-increase-microfinance-performance-in-sub-saharan-africa-jul-2011.pdf

Ngugi, S. M., & Afande, F. O. (2015). Challenges Facing Deposit Taking Savings and Credit Co-Operatives' Compliance with the Sacco Societies' Act Number 14 (2008) in Nyeri County. *Journal of Poverty, Investment and Development,* 11, 1-20.

Nichter, S., & Goldmark, L. (2009). Small firm growth in developing countries. *World Development*, 37(9), 1453-1464.

Njuguna, P. (2012). *Impact of regulations on SACCO performance in Kenya.* Paper presented at the 13th ACCOSCA SACCA Congress, Entebbe, Uganda.

Noordin, M. A., & Mohtar, D. S. (2014). Age: Does it matter for firms to perform? *International Journal of Academic Research in Business and Social Sciences*, 4(3), 252-260.

Nuhu, E., Musah, A., & Senyo, D. B. (2014). Determinants of Dividend Payout of Financial Firms and Non-Financial Firms in Ghana. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4(3), 109-118.

Nur'ainy, R., Nurcahyo, B., Kurniasih, S. A., & Sugiharti, B. (2013). Implementation of good corporate governance and its impact on corporate performance: The mediation role of firm size (Empirical study from Indonesia). *Global Business and Management Research*, 5(2/3) 91-104.

Nurmakhanova, M., Kretzschmar, G., & Fedhila, H. (2015). Trade-off between financial sustainability and outreach of microfinance institutions. *Eurasian Economic Review*, 1-20.

Nwankwo, F., Ewuim, N., & Asoya, N. P. (2013). Effect of cooperatives on the savings behaviour of members in Oyi local government area, Anambra State, Nigeria. *African Research Review*, 7(1), 209-227.

Nyamsogoro, D. G. (2010). *Financial sustainability of rural microfinance institutions (MFIs) in Tanzania.* (Doctoral thesis). University of Greenwich, UK. Retrieved from http://gala.gre.ac.uk/6366/1/Ganka_Daniel_Nyamsogoro_2010.pdf

Nyangeri, F. O. (2014). *The effect of firm characteristics on the financial performance of pension schemes in Kenya.* University of Nairobi, Kenya.

Odera, O. (2012). Corporate governance problems of savings, credit and cooperative societies. *International Journal of Academic Research in Business and Social Sciences,* 2(11), 89-103.

Oh, J. (2001). International trade in film and the self-sufficiency ratio. *The Journal of Media Economics,* 14(1), 31-44.

Okibo, B. W., & Chepkwei, A. K. (2013). The role of corporate strategy on compliance with government regulations among Saccos in Kenya, *Journal of Research in Marketing*, 1(3), 79-89.

Okumu, L. J. (2007). *Microfinance industry in Uganda: Sustainability, outreach and regulation*. (Doctoral thesis). University of Stellenbosch, South Africa. Retrieved from sun.ac.za/bitstream/handle/10019.1/1091

Olando, C. O., Mbewa, M. O., & Jagongo, A. (2012). Financial practice as a determinant of growth of savings and credit co-operative societies' wealth: A pointer to overcoming poverty challenges in Kenya and the region. *International Journal of Business and Social Science,* 3(24), 204-219.

Olivares-Polanco, F. (2005). Commercialising microfinance and deepening outreach? Empirical evidence from Latin America. *Journal of Microfinance/ESR Review*, 7(2), 5.

Onchangwa, G. A., Ongoncho, S., Onchonga, D. M., & Njeri, B. (2013). Influence of cooperatives policy framework on members' investment in Kenya. *International Journal of Social Sciences and Entrepreneurship*, 1(7), 564-570.

Ong'wen, B. O. (2010). *Corporate governance and financial performance of companies quoted in the Nairobi Stock Exchange* (MBA Project). University of Nairobi, Kenya.

Ongore, V. O. (2001). *Managerial response to the deregulation of the co-operative sector: The case of SACCOS in Nairobi* (Master's thesis). University of Nairobi, Kenya.

Ongore, V. O., & Kusa, G. B. (2013). Determinants of financial performance of commercial banks in Kenya. *International Journal of Economics and Financial Issues,* 3(1), 237-252.

Onsase, A., Okioga, C., Okwena, D. K., & Ondieki, A. N. (2012). *Assessment of the effects of performance management practices on provision of financial services by savings and credit cooperative societies: A case of Gusii Mwalimu Sacco, Kisii Central District, Kenya.* Proceedings of the JKUAT Scientific, Technological and Industrialisation Conference. Retrieved from http://elearning.jkuat.ac.ke/journals/ojs/index.php/jscp/article/view/850/761

Orlitzky, M. (2001). Does firm size confound the relationship between corporate social performance and firm financial performance? *Journal of Business Ethics,* 33(2), 167-180.

Osmundsen, P., Løvås, K., & Emhjellen, M. (2017). *Petroleum tax competition subject to capital rationing* (Working paper). Centre for Economic Studies & Ifo Institute.

Osotimehin, K. O., & Jegede, C. A. (2011). Determinants of microfinance outreach in south western Nigeria: An empirical analysis. *Interdisciplinary Journal of Contemporary Research in Business,* 3(8), 780-797.

Otieno, K., Mugo, R., Njeje, D., & Kimathi, A. (2015). Effect of corporate governance on financial performance of SACCOS in Kenya. *Research Journal of Finance and Accounting,* 6(2), 48-59.

Otieno, S., Okengo, B. O., Ojera, P., & Mamati, F. (2013). An Assessment of Effect of Government Financial Regulations on Financial Performance in Savings and Credit Cooperative Societies (SACCOs): A study of SACCOs in Kisii Central, Kenya. *International Journal of Business and Social Science* 4(3).

Ouattara, K., Gonzalez-Vega, C., & Graham, D. H. (1999). *Village banks, caisses villageoises, and credit unions: Lessons from client-owned microfinance organizations in West Africa.* Economics and Sociology Occasional Paper No, 2523.

Ouma, W. N., & Muriu, P. (2014). The impact of macroeconomic variables on stock market returns in Kenya. *International Journal of Business and Commerce*, 3(11), 1-31.

Owen, G. (2007). *Rural outreach and financial cooperatives: SACCOs in Kenya.* Washington, DC: Agriculture and Rural Development Department, World Bank,.

Oyoo, M. (2002). *Evaluation of financial performance of savings and credit co-operative societies before and after deregulation: The case of SACCOS based in Nairobi* (Master's thesis). University of Nairobi, Kenya.

Pagano, P., & Schivardi, F. (2003). Firm Size Distribution and Growth. *The Scandinavian Journal of Economics*, 105(2), 255-274.

Paradi, J. C., & Zhu, H. (2013). A survey on bank branch efficiency and performance research with data envelopment analysis. *Omega*, 41(1), 61-79.

Parker, D., & Kirkpatrick, C. (2012). *Measuring regulatory performance: The economic impact of regulatory policy: A literature review of quantitative evidence* (Expert Paper No. 3). OECD. Retrieved from http://www.oecd.org/gov/regulatory-policy/3_Kirkpatrick%20Parker%20web.pdf

Parveen, J. A. (2009). Sustainability issues of interest-free microfinance institutions in rural development and poverty alleviation in Bangladesh. *Theoretical and Empirical Researches in Urban Management*, 2(11), 112-133.

Pathak, R. D., & Kumar, N. (2008). The key factors contributing to successful performance of cooperatives in Fiji for building a harmonious society. *International Journal of Public Administration*, 31(6), 690-706.

Paxton, J. (2002). Depth of outreach and its relation to the sustainability of microfinance institutions. *Savings and Development*, 69-86.

Peasnell, K. V. (1982). Some formal connections between economic values and yields and accounting numbers. *Journal of Business Finance & Accounting*, 9(3), 361-381.

Peng, C. J., & So, T. H. (2002). Logistic regression analysis and reporting: A primer. *Understanding Statistics,* 1(1), 31-70.

Peng, C. J., Lee, K. L., & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The Journal of Educational Research,* 96(1), 3-14.

Penrose, E. T. (1952). Biological analogies in the theory of the firm. *The American Economic Review*, 804-819.

Penrose, E. T. (1995). *The theory of the growth of the firm.* New York, NY: Oxford University Press.

Plyler, M., Haas, S., & Nagarajan, G. (2010). *Community-level economic effects of M-PESA in Kenya: Initial findings.* Financial Services Assessment Project. Retrieved from http://www.fsassessment.umd.edu/publications/pdfs/Community-Effects-MPESA-Kenya.pdf

Pollet, I. (2009). *Cooperatives in Africa: Synthesis of a survey in nine African countries.* (No. 7). CoopAfrica Working Paper. Retrieved from http://www.ilo.org/public/english/employment/ent/coop/africa/download/wp7_ageofreconstructon.pdf

Postma, T. J. B. M., van Ees, H., & Sterken, E. (2001). *Board composition and firm performance in the Netherlands.* Research Institute SOM, University of Groningen, Netherlands. Retrieved from http://www.rug.nl/research/portal/files/3097528/01E01.pdf

Pradhan, N. C. (2012). Microfinance: Issues on outreach, sustainability and ethical practices. *National Monthly Refereed Journal of Research in Arts and Education* 1(1), 1-9.

Qin, X., & Ndiege, B. O. (2013). Role of financial development in economic growth: Evidence from savings and credits cooperative societies in Tanzania. *International Journal of Financial Research*, 4(2), 115-125.

Quayes, S. (2012). Depth of outreach and financial sustainability of microfinance institutions. *Applied Economics*, 44(26), 3421-3433.

Rahman, R. A., & Ali, F. H. M. (2006). Board, audit committee, culture and earnings management: Malaysian evidence. *Managerial Auditing Journal,* 21(7), 783–804.

Rainsbury, E. A., Bradbury, M., & Cahan, S. F. (2009). The impact of audit committee quality on financial reporting quality and audit fees. *Journal of Contemporary Accounting & Economics,* 5(1), 20-33.

Rajan, R., Servaes, H., & Zingales, L. (2000). The cost of diversity: The diversification discount and inefficient investment. *The Journal of Finance*, 55(1), 35-80.

Ralston, D., Wright, A., & Garden, K. (2001). Can mergers ensure the survival of credit unions in the third millennium? *Journal of Banking & Finance*, 25(12), 2277–2304.

Ralston, D., Wright, A., & Garden, K. (2001). Can mergers ensure the survival of credit unions in the third millennium? *Journal of Banking & Finance*, 25(12), 2277-2304.

Rashid, A., & Koire, T. (2013). Exploring the determinants of the productivity of Indian microfinance institutions. *Theoretical and Applied Economics*, 20(12), 83-96.

Reddy, K., Locke, S., & Scrimgeour, F. (2010). The efficacy of principle-based corporate governance practices and firm financial performance: An empirical investigation. *International Journal of Managerial Finance*, 6(3), 190-219.

Rehman, A., & Haruto T. (2012). Determinants of dividend payout ratio: Evidence from Karachi Stock Exchange (KSE). *Journal of Contemporary Issues in Business Research* 1(1), 20-27.

Rezaee, Z., Olibe, K. O., & Minmier, G. (2003). Improving corporate governance: the role of audit committee disclosures. *Managerial Auditing Journal*, 18(6/7), 530-537.

Rock, R., Otero, M., & Saltzman, S. (1998). *Principles and practices of microfinance governance.* Development Alternatives, Incorporated, Bethesda, USA.

Rose, C., Munch-Madsen, P., & Funch, M. (2013). Does board diversity really matter? Gender does not, but citizenship does. *International Journal of Business Science and Applied Management,* 8(1), 15-27.

Rose, R. C., Abdullah, H., & Uli, J. (2010). The relationship between organisational competitive advantage and performance. *Asian Academy of Management Journal,* 3(4), 191-196.

Ryder, N. (2003). The Financial Services Authority and credit unions: A new era in regulation? *Journal of Financial Regulation and Compliance*, 11(3), 241-249.

Said, R. M., & Tumin, M. H. (2011). Performance and financial ratios of commercial banks in Malaysia and China. *International Review of Business Research Papers*, 7(2), 157-169.

Saleemi, N. A. (2010). *Taxation Simplified: Volume 1.* Nairobi, Kenya: Saleemi Publications.

Saleemi, N.A. (2008a). *Financial accounting: Simplified.* Nairobi, Kenya: Saleemi Publications.

Saleemi, N.A. (2008b). *Quantitative techniques: Simplified.* Nairobi, Kenya: Saleemi Publications.

Salehi, M., Mansoury, A., & Pirayesh, R. (2009). Firm size and audit regulation and fraud detection: Empirical evidence from Iran. *ABAC Journal*, 29(1), 53-65.

Sami, H., Wang, J., & Zhou, H. (2011). Corporate governance and operating performance of Chinese listed firms. *Journal of International Accounting, Auditing and Taxation,* 20(2), 106-114.

SASRA. (2010). *SACCO Supervision report*: *Deposit taking Saccos*. Retrieved from http://www.sasra.go.ke/index.php/resources/publications#.V6dsXFqKQj8

Schiffer, M., & Weder, B. (2001). *Firm size and the business environment: Worldwide survey results*. Washington, DC: World Bank.

Schram, A. (2005). Artificiality: The tension between internal and external validity in economic experiments. *Journal of Economic Methodology*, 12(2), 225-237.

Searle, S. R., Casella, G., & McCulloch, C. E. (1992). *Variance components.* New York, NY: John Wiley and Sons.

Sebhatu, K. T. (2011). Management of savings and credit cooperatives from the perspective of outreach and sustainability: Evidence from Southern Tigrai of Ethiopia. *Research Journal of Finance and Accounting*, 2(7-8), 10-23.

Sekaran, U. (2006). *Research methods for business: A skill building approach* (4th ed.). New Delhi, India: Wiley.

Siele, W. (2009). *An empirical investigation of the relationship between selected macroeconomic variables and the Nairobi Stock Exchange-20 (NSE) share index* (MBA Project). University of Nairobi, Kenya.

Spear, R. (2004). Governance in democratic member-based organisations. *Annals of Public and Cooperative Economics*, 75(1), 33-60.

Stimpert, J. L., & Laux, J. A. (2011). Does size matter? Economies of scale in the banking industry. *Journal of Business & Economics Research*, 9(3), 47-56.

Tache, G. A. (2006). *Sustainable SACCO development: Training material.* Rural Savings Promotion & Enhancement of Enterprise Development (Rural SPEED). Retrieved from http://pdf.usaid.gov/pdf_docs/Pnadk962.pdf

Takhtaei, N. (2014). Relationship between firm age and financial leverage with dividend policy. *Asian Journal of Finance & Accounting*, 6(2), 53-63.

Thornhill, S., & Amit, R. (2003). Learning about failure: Bankruptcy, firm age, and the resource-based view. *Organization Science*, 14(5), 497-509.

Torres-Reyna, O. (2007). *Panel data analysis fixed and random effects using Stata (v. 4.2).* Princeton University. Retrieved from https://www.princeton.edu/~otorres/Panel101.pdf

Tricker, R. I. (2015). *Corporate governance: Principles, policies, and practices.* New York, NY: Oxford University Press.

Turner, J. W. (1996). Credit unions and banks: Turning problems into opportunities in personal banking. *International Journal of Bank Marketing*, 14(1), 30-40.

Turtiainen, T. (2008). *Financial cooperatives and rural outreach in developing countries: A tool to involve rural poor in economic life.* Paper presented at the ICA Research Conference: The Role of Cooperatives in Sustaining Development and Fostering Social Responsibility, Trento, Italy,

Uluma, P. U. (2013). *An assessment of the determinants of growth of savings and credit co-operatives in Dagoretti District, Kenya* (MBA Project). Kenyatta University, Kenya. Retrieved from http://ir-library.ku.ac.ke/bitstream/handle/123456789/7209/Philip%20Ukhevi%20Uluma.pdf?sequence=1

UN. (2010). *Proclaiming 2012 the year of cooperatives: Cooperatives in social development.* Resolution adopted by the General Assembly, February 2010, New York.

Van Ness, R. K., Miesing, P., & Kang, J. (2010). Board of director composition and financial performance in a Sarbanes-Oxley world. *Academy of Business and Economics Journal*, 10(5), 56-74.

Vento, G. (2006). Sustainability and outreach: The goals of microfinance. *Microfinance*, 54-70.

Vilkko, V. (2011). *Al-Shabaab: From external support to internal extraction.* Department of Peace and Conflict Research, Uppsala University. Retrieved from http://www. uu. se/digitalAssets/57/57537_MFS_paper_Vilkko. pdf.

Vlachvei, A., & Notta, O. (2008). *Firm growth, size and age in Greek firms*. Proceedings of International Conference on Applied Economics, ICOAE 2008 (pp. 915-921). Retrieved from http://kastoria.teikoz.gr/icoae2/wordpress/wp-content/uploads/articles/2011/10/107-2008.pdf

Wale, L. E. (2009). *Performance analysis of sample microfinance institutions of Ethiopia.* http://dx.doi.org/10.2139/ssrn.1398167

Walliman, N. (2009). *Your research project: A step-by-step guide for the first-time researcher (3rd ed.)*. Thousand Oaks, CA: Sage.

Wambua, V. M. (2016). Effect of dividend pay out on the liquidity of licensed non-deposit taking SACCOs in Nairobi County. *Strategic Journal of Business & Change Management*, 3(4), 1260-1274.

Wanjau, J. N. (2007). *A survey of relationship between corporate governance and performance in microfinance institutions in Kenya* (MBA Project). University of Nairobi, Kenya. Retrieved from http://erepository.uonbi.ac.ke/bitstream/handle/11295/7844/FULL%20TEXT..pdf?sequence=4

Wanyama, F. O., Develtere, P., & Pollet, I. (2009). Reinventing the wheel? African cooperatives in a liberalised economic environment. *Annals of Public and Cooperative Economics*, 80(3), 361-392.

Wanyoike, S. W. (2013). *Effect of compliance to SASRA regulations on financial performance of savings and credit co-operatives in Kenya: A survey of deposit taking SACCOs in Nairobi County.* Kabarak University, Kenya.

Ward, A. M., & McKillop, D. G. (2005). An investigation into the link between UK credit union characteristics, location and their success. *Annals of Public and Cooperative Economics*, 76(3), 461-489.

Warue, B. N. (2012). Factors affecting loan delinquency in microfinance institutions in Kenya. *International Journal of Management Sciences and Business Research*, 1(12), 27.

Waweru, G., Mbogo, J., & Shano, M. (2013). *An introduction to taxation in Kenya*: *Incorporating provisions of the new constitution.* Njoro, Kenya: Pangolin Publishers..

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, 5(2), 171-180.

Wheelock, D. C., & Wilson, P. W. (2011). Are credit unions too small? *Review of Economics and Statistics*, 93(4), 1343-1359.

Williams, K.S. (2014). *Non-profit financial sustainability*. Victoria, Canada: Royal Roads University. Retrieved from https://dspace.royalroads.ca/docs/bitstream/handle/10170/747/williams_kristin.pdf?sequence=1

WOCCU. (2014). *Statistical report*. Madison, WI: World Council of Credit Unions. Retrieved from http://www.woccu.org/publications/statreport

Woller, G., & Schreiner, M., (2002). *Poverty lending, financial self-sufficiency, and the six aspects of outreach.* Washington, DC: The SEEP Network: Poverty Lending Working Group. Retrieved from www.seepnetwork.org

Wood, F., & Sangster, A. (1999). *Business accounting*. Harlow, UK: Prentice Hall.

Wu, W., Rui, O. M., & Wu, C. (2012). Trade credit, cash holdings, and financial deepening: evidence from a transitional economy. *Journal of Banking & Finance,* 36(11), 2868-2883.

Xu, M., & Banchuenvijit, W. (2012). *Factors affecting financial performance of firms listed on Shanghai Stock Exchange 50 (SSE 50)*. Retrieved from http://www.utccmbaonline.com/Journalsys/Upload_Arti/2015-02-02_14:57:09.pdf

Yildiz, O., Bozkurt, Ö. Ç., Kalkan, A., & Ayci, A. (2013). The relationships between technological investment, firm size, firm age and the growth rate of innovational performance. *Procedia: Social and Behavioral Sciences*, 99, 590-599.

Yount, R. (2006). *Research design and statistical analysis in Christian ministry* (4th ed.). Fort Worth, Texas: Southwest Baptist Theological.

Zaigham, R., & Asgar, N. (2011). Sustainable micro finance banks: A comparative case study from Pakistan. *Interdisciplinary Journal of Contemporary Research in Business,* 3(8), 570-584.

Zaki, N., Jovanovic, A., & Stamatovic, M. (2008). External and internal factors affecting the product and business process innovation. *Facta Universitatis: Economics and Organization*, 5(1), 17-29. Retrieved from http://facta.junis.ni.ac.rs/eao/eao200801/eao200801-03.pdf

Zeller, M., Sharma, M., Henry, C., & Lapenu, C. (2003). *An operational method for assessing the poverty outreach performance of development projects: Results from four case studies in Africa, Asia and Latin America.* Paper presented at the 25th International Conference of Agricultural Economists (IAAE), Durban, South Africa. Retrieved from http://ecsocman.hse.ru/data/421/661/1219/135

Zerai, B., & Rani, L. (2012). Is there a trade-off between outreach and sustainability of micro finance institutions? Evidence from Indian microfinance institutions (MFIs). *Research Journal of Finance and Accounting*, 2(11), 32-41.

Zhang, Y., Zhou, J., & Zhou, N. (2007). Audit committee quality, auditor independence, and internal control weaknesses. *Journal of Accounting and Public Policy*, 26(3), 300-327.

Zhou, H., & Wit, G. (2009). *Determinants and dimensions of firm growth.* Retrieved from http://core.ac.uk/download/files/153/7074496.pdf

Appendices

Appendix A: Editor's letter

PO Box 68648
Bryanston
2021

6 December 2017

To whom it may concern,

This letter is to confirm that I am a professional editor and proof reader and that I have edited Gabriel Waweru's thesis, the title being: *An Assessment of the Financial Sustainability of Savings and Credit Cooperative Societies in Kenya.*

For any queries, please contact me on jenniferrenton@live.com.

Yours sincerely,
Jennifer Renton

Appendix B: Introduction letters

GABRIEL WAWERU

MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY

P.O. BOX 972 - 60200

MERU

12th March 2015

Dear Sir/Madam,

RE: PhD RESEARCH

I am a post-graduate student studying towards a PhD in Business Administration at The Graduate School of Business, University of Cape Town.

The topic of my academic research is **AN ASSESSMENT OF THE FINANCIAL SUSTAINABILITY OF SAVINGS AND CREDIT COOPERATIVE SOCIETIES IN KENYA.**

The data being solicited will be used strictly for academic purpose only and will be treated with utmost confidentiality. I believe that the findings of the study will make an invaluable contribution towards improving the financial sustainability of SACCOS in Kenya.

Any assistance accorded will be highly appreciated.

Thank you.

Yours faithfully,

Signed by candidate Signature Removed

Gabriel Waweru

Appendix Removed Due to a Visible Signature

Appendix C: Letters of authority to collect data

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Appendix removed due to visible signatures

Appendix D: Questionnaire

SECTION A: GENERAL SACCO INFORMATION

Name of the SACCO ……

C/S Number ……

Physical Address ……

Postal Address ……

County ……

SECTION B: INFORMATION ON SACCO REGULATION

SACCO LICENSING

1. Is the SACCO operating front office service activity (FOSA)?

Yes ☐ No ☐

2. Use the rankings below to answer the following (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Statement	**01**	**02**	**03**	**04**	**05**
a	Time taken to acquire a license is too long					
b	License fee of KES50,000 for SACCO head office and KES20,000 for a branch is very high for SACCOs					
c	The annual SACCO license renewal requirement is not necessary					
d	Licensing procedure is tedious and tiresome					

CAPITAL ADEQUACY

3. The following capital adequacy conditions have helped in enhancing financial sustainability of SACCOs. Use the rankings below to answer (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Requirement	**01**	**02**	**03**	**04**	**05**
a	Maintenance of core capital of not less than KES10 million					
b	Maintenance of core capital of not less than 10% of the total assets					
c	Requirement to maintain institutional capital of not less than 8% of the total deposits					
d	Requirement to maintain core capital of not less than 8% of the total deposits					
e	Requirement to submit a return on capital adequacy on or before the 15th day of the following month					
f	Sanctions to be imposed for failure to comply with capital adequacy requirements, including suspension					

LIQUDITY PROVISIONS

4. The following liquidity provisions have a positive impact on the financial sustainability of SACCOs. Use the rankings below to answer (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Provision	**01**	**02**	**03**	**04**	**05**
a	Appointment of a person to be in charge of SACCO liquidity by the board of directors					
b	Requirement to maintain 15% of the deposits and short term liabilities in liquid assets					
c	Maintenance of a contingency plan to handle liquidity crises					
d	Submission of liquidity statement to SASRA by 15th day of the following month					
e	Penalties prescribed in the Kenyan SACCO Act for failure to comply with liquidity provisions, including suspension and prohibition to declare dividends					

SHARES AND DEPOSITS

5. The following shares and deposits requirements have impacted positively on the performance of SACCOs. Use the rankings below to answer (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Condition	**01**	**02**	**03**	**04**	**05**
a	Prohibition of SACCO members to use their shares as collateral					
b	Existence of non-withdrawal deposit accounts					

c	Submit a statement of non-withdrawal deposit accounts by 15th day of the following month					

CREDIT MANAGEMENT

6. The following credit management policies have greatly influenced SACCO liquidity and the reduction of bad debts and non-performing loans. Use the rankings below to answer (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Condition	**01**	**02**	**03**	**04**	**05**
a	Requirement for a SACCO to seek SASRA approval prior to introduction of a new loan product					
b	Loan approval for directors/employees to be approved by the board of directors in absence of the concerned director/employee					
c	No bad debts to be written off relating to directors/ employees					
d	SACCO not to acquire external borrowing in excess of 25% of the total assets					

PROVISION FOR BAD DEBTS AND NON PERFORMING LOANS

7. The following requirements have helped in the reduction of bad debts and non-performing loans. Use the rankings below to answer (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Condition	**01**	**02**	**03**	**04**	**05**
a	Classification of loans into 5 categories namely: • Performing • Watch • Substandard • Doubtful • Loss/Written off					
b	Obtaining collateral for a loan issued duly charged and insured					
c	Provision for bad debts as follows: • 1% general provision for performing loans • 25% for substandard loans • 50% of the doubtful loans • 100% of bad debts written off					

FUNDS INVESTMENT

8. Rules concerning SACCO investment have hindered financial performance and growth. Use the rankings below to answer (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Rule	**01**	**02**	**03**	**04**	**05**
a	The prohibition by law of SACCOS to invest in non-earning assets including land, except for expansion purposes, is hindering SACCO growth.					
b	Requirement for SACCOS not to hold securities for profit-making purposes is limiting SACCO growth					
c	Disclosure of related-party transactions, including those with family members, is hindering performance and growth					

FINANCIAL DISCLOSURE

9. Financial disclosure requirements have a positive impact on the financial performance of SACCOs. Use the rankings below to answer (tick where appropriate).

Strongly agree - 01, agree - 02, strongly disagree - 03, disagree - 04, no effect - 05.

	Disclosure	**01**	**02**	**03**	**04**	**05**
a	SASRA's right to inspect the books and accounts of SACCOs has enhanced accountability and transparency					
b	Oversight role by SASRA, including prohibition to pay dividends to members if undercapitalized, has led to interference with SACCO management					

c	The power of the Regulator to intervene in SACCO management is adversely affecting SACCO performance					
d	Publication of any information received from a SACCO by SASRA will enhance proper management and accountability of the SACCO					
e	The establishment of a deposit guarantee fund to which SACCOS must contribute will enhance and safeguard members' funds and deposits					
f	Submission of Income and Expenditure (I&E) to SASRA every month has helped in enhancing better financial performance					
g	Existence of an external auditor duly appointed at an AGM has enhanced the protection of members' funds					
h	Financial statements submission to SASRA annually including: • P&L • Balance sheet • Cash flow statement • Statement of changes in equity • Auditors opinions and • Directors responsibilities, have enhanced accountability and transparency					

Designation of the respondent……

Thank you very much for your time.

Appendix E: Ethics and research form

UNIVERSITY OF CAPE TOWN

FACULTY OF COMMERCE

Igniting Knowledge and Opportunity

Commerce Faculty Ethics in Research Committee

Updated Ethics in Research Form January 2013

Any individual in the Faculty of Commerce at the University of Cape Town undertaking any research that involves the use of human subjects, or research that may hold ethical consequences for the University of Cape Town, is required to complete this form. The completed form should be submitted to departmental Ethics Committee representatives for submission to the Commerce Faculty Ethics in Research Committee

PLEASE TAKE NOTE OF THE FOLLOWING REQUIREMENTS:

1. **All sections** of this form must be completed
2. This form should be completed **electronically**and emailed to your departmental Ethics Committee representative in the Commerce Faculty Ethics in Research Committee
3. To select the various options please double click the appropriate box and select the option 'checked' under the heading default options – then click 'ok'
4. You should include your **electronic signature**under section 8
5. You are required to **attach** your research proposal, questionnaire(s) with cover letter(s), informed consent forms, organisational consent documentation, and/or interview schedules
6. **NO RESEARCH CAN BE CONDUCTED UNLESS YOU HAVE RECEIVED ETHICAL APPROVAL FROM YOUR EIR REP**

1. PROJECT DETAILS

Project title:	**AN ASSESSMENT OF FINANCIAL SUSTAIANABILTY OF SACCOS IN KENYA**		
Principal Researcher/s:	**GABRIEL WAWERU**	**Email address(es):**	**gabuwaweru@yahoo.com**
Research Supervisor:	**Dr. KUTLWANO RAMABOA**	**Email address(es):**	**kutlwano.ramaboa@gsb.uct.ac.za**
Co-researcher(s):	_____	**Email address(es):**	_____

Brief description of the project:

THIS IS AN INVESTIGATION OF THE FACTORS THAT AFFECT FINANCIAL SUSTAINABILITY OF SACCOS IN KENYA.

Data collection:(please select by double clicking the box which you would like to select – and clicking the default value - checked option)

☐Interviews ☒Questionnaire ☐Experiment ☒Secondary data ☐Observation

☐ Other (please specify): _____

Procedure:(please describe)

Questionnaires will be dropped to the respondents and collected after some time. For respondents at a far distance, questionnaires will be posted to them.

_____

Please remember to attach your research proposal OR a literature review with research methodology

2. PARTICIPANTS

Characteristics of participants:

Gender:	men and women
Race / Ethnicity:	Kenyans
Age range:	adults
Location:	Kenya
Other:	N/A

Race / Ethnicity:

Have you included a "**Prefer not to Answer**" response category in your questionnaire? (please select)

☐Yes☐No ☒Not applicable

If you answered 'No' why not?

_____

Affiliations of participants:(please select)

☐Company employees☒General public ☐UCT staff☐UCT Students

☐ Other (please specify): _____

If your sample includes children (aged 18 and below), mentally incompetent persons, or legally restricted groups please explain below why it is necessary to use these particular groups. If subjects are minors or mentally incompetent, please describe how and by whom permission will be granted? If you are including children under the age of 18 and are not getting parental consent, please explain why you believe that their parents would consent if it was possible to contact them.

_____

☒Not applicable

3. ORGANISATIONAL PERMISSION

If your research is being conducted within a specific organisation, please state how organisational permission has beenobtained:

An introduction letter from the university will serve the purpose for introduction._____

If you cannot obtain organisational permission, please justify why below:

_____

Have you attached the letter from the organisation granting permission?(please select)

☒Yes☐No☐Not applicable

Are you making use of UCT students as respondents for your research? (please select)☐Yes☒No

If yes, please get your supervisor to sign below:

I Miss/Mrs/Mr/Dr/ Prof_____**(insert name)as supervisor(s) to** _____**(insert researcher's name)agree to ensure that approval is grantedby the Executive Director: Student Affairs prior to the researcher conducting the study.**

Insert electronic signature below

Are you making use of UCT students as respondents for your research? (please select)☐Yes☒No

If yes, please get your supervisor to sign below:

I Miss/Mrs/Mr/Dr/ Prof_____**(insert name)as supervisor(s) to** _____**(insert researcher's name)agree to ensure that approval is grantedby the Executive Director:Human Resourcesprior to the researcher conducting the study.**

Insert electronic signature below

Contact Emails: *Executive Director: Student Affairs (**Moonira.Khan@uct.ac.za)**

Executive Director: Human Resources (Miriam.Hoosain@uct.ac.za)**

4. INFORMED CONSENT

What type of consent will be obtained from study participants?

☐Oral Consent

☐Written Consent

☒Anonymous questionnaire (covering letter required, no consent form needed)

☐ Other (please specify): _____

If you are making use of oral consent, please explain by written consent is not an option:

_____

How and where will consent/permission be recorded?

_____

5. CONFIDENTIALITY OF DATA

What precautions will be taken to safeguard identifiable records of individuals? Please describe specific procedures to be used to provide confidentiality of data by you and others, in both the short and long run. This question also applies if you are using secondary sources of datathat is not anonymous.

Anonymous questionnaires will be issued

6. RISK TO PARTICIPANTS

Does the proposed research pose any physical, psychological, social, legal, economic, or other risks to study participants you can foresee, both immediate and long run? **(please select)**

☐Yes ☒No

If yes, answer the following questions:

1. _____

2._____

3._____

7. AUTHORSHIP

What authorship agreement have you reached with your co-researchers or supervisor?

☐ This research is not intended for publication

☒Standard authorship agreement (principal researcher first author, co-researcher(s) and supervisor(s) co-authors)

☐Customised agreement (please specify below):

_____

8. DECLARATION

I certify that we have read the UCT Authorship Policy, and Commerce Faculty Authorship Guidelines ☐ (http://www.commerce.uct.ac.za/Commerce/Information/research.asp)

I certify that that the material contained herein is truthful and that all co-researchers and supervisors are ☐aware of the contents thereof.

I understand that it is my responsibility to conduct research in accordance with the ethical requirements of ☐UCT.

Signed by candidate Signature Removed

Applicant's electronic signature

Date: 9/9/2013

CHECKLIST	**SELECT**
A full copy of a research proposal or a literature review with methodology is attached	☒
Interview schedules / cover letters / questionnaires / informed consent forms and other materials used in the study are attached	☐
Organisational consent letter / UCT student or staff approval letter	☐

On your cover letter to your questionnaire have you included the following?

1. **The following UCT Logo** **NA** ☐

2. **A sentence explaining the aim of the research**

3. **Sentences of a similar nature to below must be included in the cover letter or consent form:** ☐

   This research has been approved by the Commerce Faculty Ethics in Research Committee.

   Your participation in this research is voluntary. You can choose to withdraw from the research at any time. ☐

   The questionnaire will take approximately Xminutes to complete

   You will not be requested to supply any identifiable information,ensuring anonymity of your responses.

   Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only. ☐

   Should you have any questions regarding the research please feel free to contact the researcher (insert contact details). ☐

4. **Have you scanned in your signature for the last section of the form?** ☐

OR

☐

☐

☐

For Ethics committee representative only

Recommendation(s): **Signature:** **Date:**
For Ethics committee chairperson only **Recommendation:** **Signature:** **Date:**