IMPACT OF SACCO SOCIETIES ACT ON THE GROWTH OF DEPOSIT TAKING SACCOs IN KENYA

BY

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X50/81413/2015

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A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF
ECONOMICS IN PARTIAL FULFILLMENT OF THE REQUIREMENT
FOR THE AWARD OF DEGREE OF MASTER OF ARTS OF THE
UNIVERSITY OF NAIROBI

NOVEMBER 2019

DECLARATION

This research paper is my original work and has not been submitted to any other college, institution or university other than the University of Nairobi for academic credit.

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DEDICATION

To my late sister, Penina Gati Mwita.

ACKNOWLEDGMENT

A work of this magnitude would not have been successful without the input of various individuals. First, I am indebted to my supervisor, Dr. Ongeri who worked tirelessly to see me through the entire project.

I also thank my good friends Robert Josochi and John Kamau for their support.

Further, I am grateful to SASRA for trusting me with crucial data that provided the key information in my project writing.

Finally, many thanks indeed to my colleagues, classmates and family for their support.

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LIST OF ACRONYMS AND ABBREVIATIONS

CAK- Cooperative Alliance of Kenya

CCD -Commissioner for Cooperative Development

CIC- Co-operative Insurance Society

CIS- Co-operative Insurance Services

DOCD-Department of Cooperative Development

DTS- Deposit Taking SACCOs

FOSA-Front Office Services Activities

GoK- Government of Kenya

ICA-International Co-operative Alliance

KCC- Kenya Co-operative Creameries

KERUSSU - Kenya Rural Savings and Credit Co-operative Societies' Union

KFA- Kenya Farmers Association

KNFC- Kenya National Federation of Co-operatives

KPCU-Kenya Planters Cooperative Union

KUSCO- Kenya Union of Savings and Credit Co-operatives

MFP-Multi-Factor Productivity

NACHU-National Cooperative Housing Union

NACOS-National Co-operatives

NGO-Non-Governmental Organization

OECD-Organisation for Economic Co-operation and Development

OLS-Ordinary Least Squares

SACCO-Savings and Credit Co-operatives

SAP-Structural Adjustment Programs

SASRA- SACCO SOCIETIES REGULATORY AUTHORITY

SME-Small and Medium Enterprises

WOCCU-World Council of Credit Unions

ABSTRACT

The aim of this study was to investigate the impact of Sacco Societies Act, 2008 on the growth of deposit taking SACCOs in Kenya. By using a sample of 10 deposit taking SACCOs, the study conducted a panel regression model to investigate the relationship between savings and the explanatory variables which included gross loans, payout to members, total assets, membership, and financial disclosures for the period 2007-2016. DTS Regulations were found to impact positively on loans, membership, financial disclosures, and total assets and negatively with payout to members of DTSs. The study concluded that Sacco Societies Act, 2008 is an externality which impacts positively on the growth of deposit taking SACCOs in Kenya.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

1.1.1 The Cooperative Movement from a Global Perspective

Following the guidelines of the International Co-operative Alliance (ICA), a cooperative can be defined as an independent group of persons who unite voluntarily and democratically in order to advance a mutual economic, social or cultural goal. Thus, a cooperative is essentially a people's movement characterized by common belief, faith and trust; its major focus being to ensure that its followers advance towards economic growth and development.

Owing to the common aspirations for each cooperative society, this form of association is considered an extended form of modern family. Curl (2010) argued that beyond the family no other solid formal association exists other than a cooperative.

The long history of the cooperative movement date to the 19th century in Europe when the first documented cooperative society, Fenwick Weavers' Society was founded in 1769 (Curl, 2010). In the ensuing years, other societies were formed, notable examples being Lennoxtown Friendly Victualling Society formed in the year 1812; Lockhurst Lane Industrial Co-operative Society formed in 1832, and Hawick Co-operative Society formed in 1839.

Birchall (1997) however notes that as early as 1760 cooperatives had been formed: Dockyard shipwrights of Chatham and Woolwich in the south of England, but these societies were not successful owing to lack of wise and judicious financial policies they adopted (Thompson, 1994).

The development of 'Rochdale principles' in 1844 by Rochdale Society of Equitable Pioneers in Great Britain gave birth to the modern day cooperative movement (Thompson, 1994).These principles have been revised and updated[1], but their objects remain unchanged, and are accepted today as the foundations upon which all cooperatives worldwide operate.

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[1] 'Rochdale principles' were adopted by ICA in 1937. However, they proved difficult to uphold for many non-consumer cooperatives, especially worker and producer cooperatives. As a result, ICA adopted a committee to review the Rochdale principles for purposes of being used broadly. The amended principles were adopted in 1966 and underwent further review in 1995

Cooperatives grew and started providing more services and took on more responsibilities like financing communities to develop a new and modern society. Derr (2013) noted that in the context of the 2008/2009 financial crises, cooperatives proved to be resilient alternatives to the mainstream financing companies and institutions. That notwithstanding, cooperatives continue to be misunderstood, with many governments either wanting to control them or avoiding to support them altogether. However, cooperatives that have adopted and carefully followed the practical idealists from Rochdale have found success in their own time (Thompson, 1994).

The cooperative movement spread to all corners of the world and by close of the 20[th]century, it was recognized as an international movement. The International Co-operative Alliance (ICA), not for profit independent international association was established in 1895 during the first Cooperative Congress in London. This is as an apex organization to advance the cooperative model by providing information, defining and defending the Cooperative principles, and enhancing international trade. Currently, ICA represents 303 members from 105 countries mostly drawn from national level cooperative federations, individual cooperatives, organizations that support cooperatives, and government offices concerned with cooperatives.

In meeting its objectives, ICA advocates for progressive operating environments for cooperatives through collaboration with global and regional authorities, and like-minded institutions.

With nearly one billion individuals belonging to over 2.6million cooperatives worldwide, and providing in excess of 250 million jobs (KUSCO, 2015), cooperatives have proven to be economically significant in contributing to the economic growth and development globally. So significant is their contribution, that from Grace's (2014) estimation, cooperative enterprises (excluding 982,400 agricultural cooperatives in China) employ about 0.2 percent of the world's population, and generate in excess of USD2.98 trillion in annual revenues. Therefore, the sustainability of cooperatives is worth looking into as their contributions are key.

Historically, cooperatives have been organized differently at different times for different purposes, not necessarily mimicking some ideal form. For most of these periods, no adequate legal structures for cooperatives existed, and none are totally adequate even today (Curl, 2009). In the African context, for example, from 1957 governments assumed a central and dominant

role in the promotion of cooperative societies, which were perceived as important channels for government-sponsored development programs and services (Porvali, 1993). The policy later swayed towards liberalization and back to state control and oscillated around these two foundations depending on the government's agenda (Wanyama, 2007). What remains unclear though, is whether these frequent reviews in the regulatory framework favour the development of cooperatives or otherwise.

1.1.2 The Cooperative Movement in Kenya

Kenya's long history of cooperative activities dates back to 1908 when the first cooperative Lumbwa Dairy Co-operative Society was formed (Nyaga, 2014). In the years that followed, other societies were formed but were majorly marketing affiliated societies; Kenya Planters Cooperative Union (KPCU) (1923), Kenya Farmers Association (KFA)(1923) and Kenya Co - Operative Creameries (KCC) (1925), with consumer cooperatives only gaining much ground in the years preceding independence and majorly concentrated in urban dwellings (Wanyama, 2009). By the time of national independence in 1963, close to 300 primary societies-the great majority of which were coffee marketing cooperatives-had been formed (Porvali, 1993).

The movement's growth momentum was enhanced in the years 1960s and 1970s owing to formation of National Cooperatives (NACOs) (Kenya National Federation of Co-operatives (KNFC) (1964), Cooperative Bank of Kenya (1968), KUSCO (1971), and Co-operative Insurance Services (CIS) (1978) (Divesture et al, 2008), which together with pre-independence associations (KCC- dairy, KPCU-coffee, and KFA-farm input) aggressively advocated for rights of Kenya's cooperative movement (Wanyama, 2009). NACOs draw their membership from cooperative unions and primary cooperatives, and as at current they include Kenya Rural Savings and Credit Co-operative Societies' Union (KERUSSU), Co-operative Insurance Society (CIC), Cooperative Alliance of Kenya (CAK) and National Cooperative Housing Union (NACHU).

The movement has grown tremendously over the years, and as at current, it is entrenched in virtually all sectors of the economy (Okonga and Warwathe, 2014) and contributes enormously to economic growth and development. And given the low penetration of formal financial services in Kenya, the cooperative movement has a wide prospect to complement mainstream

banking sector by enhancing financial intermediation (Mwangi and Wanjau, 2013; (SASRA, 2011) and wealth creation (Okonga and Warwathe, 2014) especially to low-income sections of the population.

According to the World Council of Credit Unions (WOCCU) (2016), the Kenyan cooperative movement has overtaken the rest of Africa as the strongest, commanding total assets in excess of USD 6.3 billion backed by over 6.2million members drawn from 6,468 cooperatives.

In the backdrop of this financially strong sector in Kenya, KUSCO (2015) estimated that Co-operatives (SACCOs) contribute in excess of 45% to Kenya's GDP and provides employment opportunities (directly or indirectly) to over 250,000 people in Kenya.

Table 1. 1Comparison of Cooperatives in Kenya with Selected* African countries

Country	Credit Unions	Members	Savings and Shares (USD)	Loans (USD)	Assets (USD)
Ethiopia	5,500	1,112,195	38,283,824	23,927,287	N/A
Guinea-Bissau	6	9,905	311,511	126,604	386,474
Kenya	**6,468**	**6,272,077**	**4,200,055,451**	**5,177,292,286**	**6,324,267,668**
Mali	70	1,042,995	74,716,100	76,043,772	116,520,267
Seychelles	1	14,889	19,980,575	15,023,271	22,918,963
Tanzania	5,559	1,153,248	283,000,000	545,000,000	599,500,000
Uganda	1,940	1,325,517	163,178,721	168,903,123	136,570,652
Zambia	11	20,767	4,761,899	15,695,323	18,969,316
TOTAL for Africa	**21,724**	**23,248,774**	**5,847,680,494**	**6,901,215,612**	**9,158,929,819**

Source: WOCCU, 2016 Statistical Report.*Shows top four and bottom four African countries in terms of number of credit unions in operation*

As depicted by table (1.1), Kenya has the strongest movement in Africa as per the key performance indicators namely; membership, total assets, savings and loans to members. Seychelles has only one credit union controlling 14,889 members. However, despite the high number of cooperatives, Kenya ranks third in terms of penetration[2] at 13.28%. Togo has the highest penetration levels at 26.68% while Senegal is second with 15.01%. Togo and Senegal have a combined membership of 4,226,681 drawn from 296 credit unions (WOCCU, 2016).

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[2]Penetration is the percentage of the total economically productive populace (between the ages of 15 and 64) belonging to cooperatives

The cooperative movement in Kenya is categorized into financial (best known as SACCOs) and non-financial cooperatives. SACCOs gained much acceptance among the working class in Kenya in the early 1990s, owing to financial restrictions of minimum operating balances that Kenyan commercial banks had imposed on their customers. As a result, SACCOs started offering quasi-banking services at competitive rates, to serve their members (especially middle and low-income earners) who were finding it difficult to operate bank accounts with commercial banks.

SACCOs were formed with a primary objective of accumulating deposits from which members of the SACCO can borrow at competitive rates, whereas non-financial cooperatives comprise of cooperatives formed for various objectives i.e. transport, housing, dairy etc. (SASRA, 2016). SACCOs are further categorized into deposit and non-deposit taking.

A Deposit-Taking (DTS) is a SACCO licenced to undertake quasi-banking activity (SASRA, 2011). Under quasi-banking (Front Office Services Activities (FOSA)) members of a DTS are accorded a chance to operate current accounts with benefits almost similar to those offered by money deposit banks. These benefits include salary and business accounts, salary processing, advances, debit cards, and mobile-enabled services.

The SACCO subsector in Kenya consists of over 50% of all the registered cooperative societies in Kenya and is considered the fastest growing within the cooperative sector (SASRA, 2011). As at December 31st 2010, there were a total of 3,280 active SACCO's out of 6,737 registered cooperative societies. Out of the 3,280 registered SACCO's, there were only 215 active deposit taking while 3,065 were non-deposit taking SACCOs.

Table 1. 2 Comparison of DTS to Non-DTS in Kenya as at December 2010*

Category of SACCO	No. of active SACCOs	Membership	Deposits (in Kes.M)	Gross Loans (in Kes.M)
DTS	215	1,546,966	123,137	123,493
Non-DTS	3,065	351,690	34,403	34,433
TOTAL	**3,280**	**1,898,656**	**157,540**	**157,926**
% of DTS to Total	7%	81%	78%	78%

Source: SASRA, 2011: ***Shows the number of DTS and Non-DTS operating as at the publication of SASRA regulations*

As shown by table (1.2), 215 out of the active 3,280 SACCOs in Kenya, as at 31st December 2010 were deposit taking. Interestingly, the 215 DTS with 81 percent membership share commanded deposits in excess of Kes123 million against Kes34 million commanded by 3,065 non-DTS, representing a very strong market share of 78 percent.

1.1.3 Overview of Regulations in the Kenyan Cooperative Sector

Literature regarding regulations during the pre-independence period is scanty. For example, nothing (or so) is documented between 1908 and 1930. The colonial government only got involved in the affairs of the cooperative movement in 1931 by establishing Co-operative Ordinance of 1931 (Government of Kenya (GoK), 1931); coming in the backdrop of a repressive rule where only the white settlers (and mostly farmers) could join cooperatives (Nyaga, 2014).

However, following growing concerns to have an inclusive cooperative movement to enhance stability and growth of the economy, the pre-independence government through Co-operative Societies' Ordinance of 1946 allowed Africans to join cooperatives (GoK, 1946). It was nonetheless not until in the 1950s through the Swynnerton Plan of 1955 that a significant number of agricultural marketing societies were formed by small-scale African producers to market their crops (GoK, 1955; Porvali, 1993; Nyaga, 2014). This followed a decision by the colonial government to allow African to grow export crops such as coffee and pyrethrum. According to Nyaga (2014), the colonial government allowed Africans to form and join cooperatives mainly to foster national unity as a result of glaring divisions resulting from a struggle to have self-rule in Kenya.

After independence, the government's economic agenda was being swayed towards socialism and the cooperative movement provided an avenue to advance this agenda (Wanyama, 2009). And through Sessional Paper No. 10 of 1965 commonly referred to as "African Socialism", the cooperative movement influenced the approaches the Kenyan economy took: by borrowing heavily from the principles of cooperatives: poverty eradication in the country was given much focus (GoK, 1965).

Further, Sessional Paper No. 8 of 1970 was enacted with the common goal of bringing together all the cooperative activities. The government through this regulation placed more emphasis on management of societies, enhanced education and training not only to members but also to management committee and members of staff managing cooperative societies.

According to Porvali (1993), the period 1967-72 was be regarded as a cooperative consolidation and "institutional engineering" period, in which the government, through the Department of Cooperative Development (DOCD), played a dominant role. The sudden growth of the cooperative movement had brought on a series of management problems caused by the acute shortage of adequately trained staff in the societies, and lack of experience among cooperative leaders. The government's response to these problems was to assume a further increased role in the supervision of cooperatives. Through the Cooperative Societies Act of 1972 (GoK, 1972) the Commissioner for Cooperative Development (CCD) was given a wider mandate. This was mainly achieved through expanding DOCD and a further upgrade to a full ministry in 1973 (Porvali, 1993). The Commissioner's role was expanded from registration of cooperatives to include supervision and overall promotion of the sector.

The period 1980s witnessed fundamental shifts in the Kenyan economy such as the Structural Adjustment Programs (SAP) which were imposed by the World Bank. The economy shifted towards liberalization (Wanyama, 2009), and these changes in economic policy impacted positively on the growth of cooperative activities by redefining the role of government to an advisory one. This paradigm shift was achieved upon publication of Sessional Paper No. 4 of 1987(GoK, 1987) titled "Renewed Growth through the Co-operative Movement".

The push for a fully liberalized movement continued with the enactment of Sessional Paper No.1 of 1994 titled "Recovery and Sustainable Development to the Year 2010". This policy change was geared towards accelerating the growth of cooperatives. Further, through Sessional Paper No. 6 of 1997 on "Co-operatives in a Liberalized Economic Environment", governments' role in running the affairs of cooperatives was reduced to a bare minimum to enhance their competitiveness (GoK, 1997a).

However, the passing and implementation the Co-operative Societies Act (GoK, 1997) led to complete liberalization of the cooperative movement. Government's role was redefined to policy formulation and general oversight (Wanyama, 2009). Cooperatives thus emerged as independent, autonomous and commercialized institutions, and members of cooperatives were empowered to run their own SACCOs through democratically elected management committees.

It is argued that this negatively shocked the cooperative movement and almost brought it down to its knees as many cooperatives reported cases of corruption and mismanagement (Manyara, 2003).

In response to these challenging experiences in the cooperative movement, the 1997 Act was amended in 2004 to enhance government oversight. The CCD was given even a wider mandate over registration, promotion and dissolution of cooperative societies. Under the legislation, government's roles were stipulated to include;

1. Creation of legal policy frameworks to enhance cooperatives development
2. Provision of necessary services to facilitate registration, performance, improvement, and winding up of cooperative societies
3. Developing strategic alliances with cooperative societies to enhance growth through consultative policy formulations

Owing to a conducive operating environment, SACCOs, a sub-sector of the cooperative movement were growing so fast that even the amendments of 2004 were not sufficient to adequately address challenges arising from their rapid growth (SASRA, 2011). In response, the ministry in charge of cooperatives developed a legislation specifically for SACCOs in Kenya: SACCO Societies Act (GoK, 2008), thus ushering in an era of dual regulatory framework in the cooperative movement (SASRA, 2016).

The 2008 Act was part of a wider advancements in the Kenyan financial services industry and were meant to ultimately modernize the SACCO sub-sector. According to SASRA (2013), the reforms in the SACCO sub-sector had two objectives. Firstly to promote and enhance public confidence towards SACCOs, and secondly to mobilize adequate savings (through SACCOs) necessary to stimulate economic growth.

Figure 1. 1 Structure and Regulatory Framework of the Cooperative Movement in Kenya
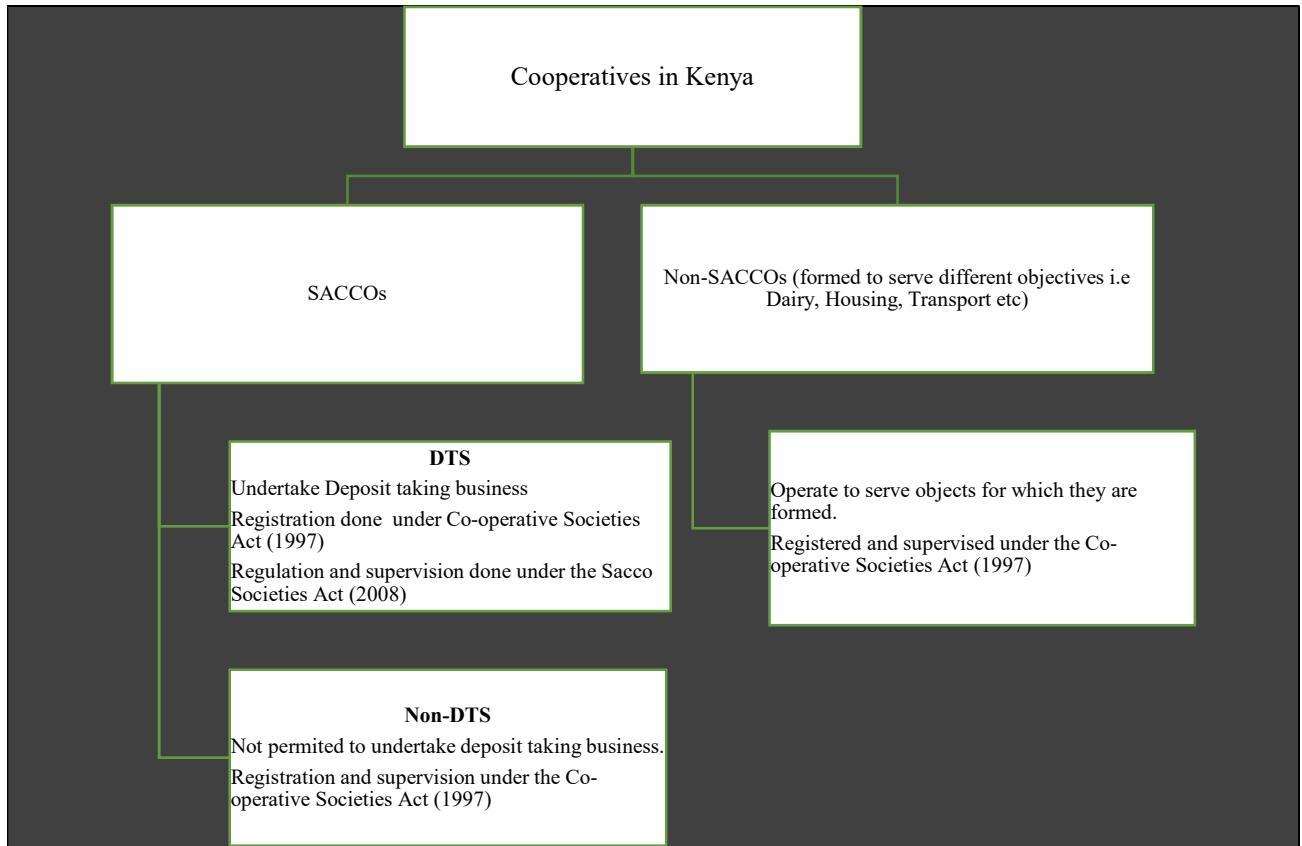
Source: SASRA, 2016

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From figure 1.1, all the cooperatives in Kenya are incorporated under the Cooperative Societies Act. However, licensing and supervision are two-tiered. Whereas both Non-DTS and non-financial cooperatives are supervised by the CCD under the provisions of the Cooperative Societies Act, DTS are licensed and supervised by SASRA under a different regulatory framework; the SACCO Societies Act and the resultant SACCO Societies (Deposit-Taking Business) Regulations, 2010.

It is on the basis of this dual regulatory framework in the Kenyan cooperative movement that this study was anchored. The study therefore aimed at determining the impact of the Sacco Societies Act, 2008 (to be referred as DTS Regulations) on growth of DTS in Kenya.

1.1.4 The SACCO SOCIETIES REGULATORY AUTHORITY (SASRA)

SASRA is established under Section 4 of the SACCO Societies Act, 2008 of the Laws of Kenya. Section 68 of the Act mandated the Minister responsible for cooperatives to make specific guidelines for effective implementation of the 2008 Act. The resultant regulations; SACCO Societies (Deposit-Taking Business) Regulations, 2010 were operationalized on 18th of June 2010 upon gazettement, and SASRA became responsible for their implementation.

As provided under section 3 (1b) of the Act, SACCOs undertaking and some not undertaking deposit taking were expected to be regulated by SASRA. However, guidelines on non-deposit taking SACCOs have not been developed (SASRA, 2017). SASRA therefore licenses and regulates DTS only whose number stood at 218 as at date of full implementation of the DTS regulations (SASRA, 2011).

1.1.5 Licensing of Deposit Taking SACCOs

Licensing of SACCOs to undertake deposit-taking is stipulated under Section 4 of the Regulations and Section 24 of the Act, and is renewable annually.

Under Section 69 of the SACCO Societies Act, 2008 all DTS were required to apply for a licence under the Act within one year from the date of its publishing. However, by virtue of Section 68 of the Act, this period ended in June 2011. As at this date, a total of 200 SACCOs undertaking deposit-taking business had made applications for license, and an additional 15 applications to start deposit-taking business (SASRA, 2011).

Even though licensing commenced in June 2011, DTS were allowed a four year grace period to comply with the provisions of the Act. This period ended on 18th June 2014 by which only 124 SACCOs had been licenced. As at December 31st, 2016 there were only 176 SACCOs licenced to carry undertake deposit-taking.

Specific Licensing Requirements for SACCOs

The requirements for licensing include;

1. Capital Requirements

   Under Section 9 of the Regulations, SACCOs must always maintain core capital of at least Kes10m, and three capital adequacy ratios (core capital/total assets of 10% and more, core capital/total deposits of above 8%, and institutional capital/total assets exceeding 8%). It is however worth noting that SASRA may require higher ratios where a SACCO society exhibits tendencies of rapid growth without adequate capitalization, or there is a likelihood of losses to be incurred resulting from operations of associates or subsidiaries or poor investments.

2. The Fit & proper test

   Both directors and management (senior managers i.e chief executive officer and their deputy, heads of finance, audit, and any other departmental head as SASRA may determine) are subject to vetting to determine their moral and professional suitability.

3. Business plan

   A three-year business plan and feasibility study, including scope and nature of business, and projected profitability is required.

1.1.6 Supervision of Deposit Taking SACCOs

Supervision of DTS commences upon of issuance of a licence and renewals thereon. SASRA engages in both onsite (majorly through periodic and unplanned visits to areas of operations of DTS) and offsite (review of monthly and quarterly periodic reports required to be submitted by all DTS to SASRA) inspections to ensure compliance with the Act and Regulations (SASRA, 2011). To enhance quality of offsite supervision, SASRA in 2012 adopted CAMEL (a financial analysis tool for *Capital Adequacy, Asset Quality, Management capacity, Earnings, and Liquidity*) for the analysis and monitoring of financial conditions of licenced DTS (SASRA, 2013).

1.1.7 Performance Trends under the Regulations (Sacco Societies Act)

Figure 1. 2 Trends of Key Performance Indicators of DTS in Kenya, 2006-2016
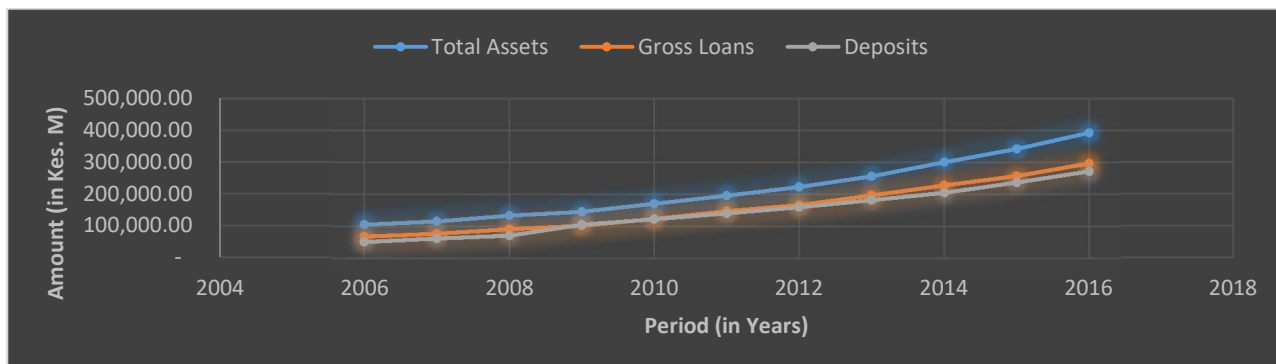
Source: SASRA, Supervision Reports (2010-2017)

As shown by figure (1.2), there is a clear indication that DTS are experiencing a rising trend in growth based on key performance indicators namely; deposits, loans and total assets. These growth trajectories is a manifestation that DTS will continue to play a big role in enhancing financial inclusion. However because of factors like increased costs to compliance and inability to meet regulatory requirements, the number of licensed DTS continue to reduce, fluctuating between 135 and 215 (as shown by table (1.3)), signalling how stringent the regulations are.

Table 1. 3 Total number of DTS in Kenya, 2009 – 2016

Year	2009	2010	2011	2012	2013	2014	2015	2016
No. of DTS (*Operating*)	218	215	215 110*	215 124*	135*	181*	177*	176*

Source: SASRA, SACCO supervision reports (2010-2017): *Shows the number of licenced SACCOs to undertake deposit-taking*

As depicted by table (1.3), only 110 DTS met licensing requirements for 2011 and 124 in 2012. However, due to a four-year grace period, strict licencing started on June 18th 2014 and only 135 DTS met the criteria. As at end of December 2014 the number increased to 181.The years 2015 and 2016 saw licences of some SACCOs revoked due non-compliance thus reducing the total number of licenced DTS to 177 and 176 respectively.

1.2 Statement of the Problem

Adoption of the Cooperative Societies Act, 1997 and further amendments in 2004 brought in a new chapter of state intervention in cooperative enterprises in Kenya. However, the rapid growth of SACCOs came with increased challenges of which even the amendments of 2004 could not sufficiently address (SASRA, 2011). As a result, SACCO Societies Act, 2008 was formulated to provide a legal framework for promotion and supervision of SACCOs, culminating into SACCO Societies (Deposit-Taking Business) Regulations, 2010 coming into operation on June 18th 2010 upon gazettement.

These prudential guidelines were aimed at ensuring financial stability of the sector thereby securing member deposits. This (it was believed) would, in turn, promote public confidence towards SACCOs, and mobilize adequate savings to finance and sustain development of Small and Medium Enterprises (SMEs) (SASRA, 2011). However, 10 years under these DTS specific Regulations, little is known about their impact, that notwithstanding a positive effect found by studies done on this subject in spite of their narrow scope (Buluma and Kungú, 2017; Waiganjo et al, 2015; Biwott, 2014 and Kiragu, 2014), or limited data used (Ngaira, 2011), and hence their findings could be misleading (Coglianese, 2012).

Given the circumstances therefore, the real impact of the SACCO Societies Act (DTS Regulations) is not clear. This study is aimed at evaluating the impact of the 2008 Act on growth of Deposit-Taking SACCOs in Kenya by employing secondary data for a relatively longer period (specifically from the year 2007-2016).

1.3 Objectives of the Study

The general objective of the study is to determine the impact of DTS Regulations on the growth of DTS in Kenya.

Specifically, the study aims at:

i. Determining the factors which affect growth of DTS in Kenya
ii. Determining the level to which DTS Regulations affect gross loans, rebates payout, membership growth, total assets, and financial disclosures within DTS in Kenya

1.4 Research Questions

The study seek to answer the following questions:

i. What factors determine the growth of DTS in Kenya?

ii. What impact does DTS Regulations have on growth of DTS in Kenya?

iii. How does the DTS Regulations impact gross loans, rebates payout, membership growth, total assets and financial disclosures within DTS in Kenya?

1.5 Significance of the Study

The study findings will be beneficial to many players in the cooperative movement. These include; SACCOs in general, the general public, NACOs and the SACCO specific regulatory authorities in Kenya. Additionally, the study contributes to the existing literature on the roles SACCOs play in growing the economy. The study also forms the basis for future research by improving and adding to the literature.

1.6 Scope and Organization of the Study

This study covered a period of ten years from 2007 to 2016 and utilized panel annual data. Data collection was based on Stratified sampling. 2 DTS were selected from each initial defined common bond (government affiliated, private sector, farmer, community based and teacher affiliated), with one DTS belonging to either large (asset base above Kes5 billion) or small (asset bases below Kes5 billion) as at December 31st 2017 for each category, making a total of 10 DTS. Data was obtained from SASRA database.

This study is organized into five chapters with part one covering areas including; background to the study, statement of the problem, objectives and study justification. Chapter two critically examines both theoretical and empirical literature on the subject while chapter three focusses on research methodology. Chapter four outlines the findings while chapter five presents conclusion and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter provides theoretical and empirical literature of the study. The first part presents a detailed theoretical review on regulation while the second outlines relevant studies on the subject. The final part presents a summary of the literature reviewed that helps to strengthen the study gaps.

2.2 Theoretical Review

Regulation as a concept remains contested, its inherent attributes forming part of an unending debate and for this reason, regulation has no generally accepted definition (Moran, 1986). For purposes of this study, the definition by Posner (1974) was adopted that defined regulation as levies and grants of all nature, as well as well-defined administrative authority over rates, entry and other facets of an economic activity.

Hertog (2010) presented two arguments as relates to economic regulation. The first part touches on existence of regulators, presence of perfect information among the regulators, and full authority among the regulators to promote social welfare. In addition, an assumption is made that the regulators act with all the good intention to protect public interests. This argument gives rise to the first set of economic regulation theories referred to as *'public interest theories'*.

From the second argument, an assumption is made that firms keep private the information relating to their behavior as regards quality of production, quantity demanded, cost of production etc. As such, regulatory agencies can only act (if they decide to) imperfectly in promoting public interests. Additionally, it is assumed (and more importantly) that economic agents pursue their own interests away from public interests. These assumptions give rise to the second theories commonly known as *'private interest or regulatory capture'*.

2.2.1 Public Interest Theory

Fundamental to this theory is a competent regulatory authority (mostly government) working to correct market inefficiencies (Hertog, 2010). According to this theory, regulation is a reactionary approach to correct ineffective or discriminatory market practices (Posner, 1974), resulting from either imperfect competition, externalities or information asymmetry. Thus, regulation is motivated by societal (public) interests and aim at correcting market failure towards increasing social welfare.

Public interest theory has two underlying assumptions;

- Full market liberalization is extremely delicate and has the tendency to move towards inefficiency
- There is no cost (virtually) associated with government interventions

However, empirical evidence suggests that these assumptions are twofold. One end, the assumptions do not hold. To illustrate, there are costs associated with regulation (Hui et al, 2016; SASRA, 2011) whereas perfect competition may push markets to operate efficiently (see the theory of markets).

On the other hand, full market liberalization may work against the public thus prompting the need for regulation. For example, through the Cooperative Societies Act, 1997 (GOK, 1997) direct role of government in the management of cooperatives was removed. Even though this move was seen as the best practice in making cooperatives autonomous, it is argued that this negatively shocked the cooperative movement and almost brought it down to its knees (GOK), as many cooperatives reported cases of corruption and mismanagement (Manyara, 2003).

According to SASRA (2011), the prudential guidelines on DTS are aimed at ensuring financial stability of the sector (public interests) thereby protecting member deposits. This argument in favour of regulation is consistent with the assertions of Nyaga (2014) who argues that understaffing and inadequacy of qualified personnel at the ministry proved difficult to monitor operations of some DTS like Harambee, Mwalimu, and Afya SACCO which were bigger than some mid-tier banks, thereby prompting a review of legislation to establish another agency to oversee operations of DTS.

2.2.2 Capture Theory (Private Interest Theory)

This theory originated from a rare mixture of Marxists, free-market economists, muckrakers and welfare state liberals (Posner, 1974). Because of the different group of scientists who made contributions towards the development of this theory, there exist wide differences in terms of underlying fundamentals. Much focus is however given to the version created by economists.

The theory holds that regulation is motivated by the ever competing private interest groups working with a view to maximizing welfare of their members (Posner, 1974). Becker (1983) adds to this argument by noting that regulations are drafted in such a way that their benefits accrue mostly to the group being targeted by the very regulations.

To illustrate this hypothesis, Becker (1983) presents the following model;

$$W = f\,(C, S_i)\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{(1)}$$

Where,

W = welfare or wealth accumulated by the capturing group
C = a dummy variable (typically) having a value of 1or 0 depending on whether regulation is favorable or detrimental
S_i = other independent variable(s) affecting the group's wealth accumulation or welfare

According to Becker (1983), this theory is best practiced as a barrier to entry. Hence, various licensing requirements like registration fees, license fees, inspection (prior to approval) fees, etc are desired by the already existing groups since they lock out new entrants. Taken on its face value, this argument could explain why there have been few SACCOs licensed to undertake deposit-taking business (see table 1.3) as a result of barriers to entry.

Owing to its underlying principle, this theory assumes that public interests have no role whatsoever to play in as far as regulations is concerned, and to that end, Marxists' version of the theory asserts that capitalists capture regulations to the sidelines of the regulator. Those assertions are consistent with those of political scientists who argue that in meeting their own private interests, regulated firms end up dominating the regulators and thus influence their industry-specific legislation.

2.3 Economic Regulation and Its Impact

In theory, regulations are desired since they tend to correct market inefficiencies, as well as advancing other public interest policies (Coffey et al, 2016). A well-functioning regulation is, therefore, a necessary impetus for efficient markets and other institutions.

The nature of the cooperative model is that decision making mostly follows a bottom-up approach, and this can pose a danger to absolute democracy. Therefore, the need to enhance competition and governance structures require continuous review of SACCO business through enhanced regulations (Njuguna, 2012). Here, a progressive regulatory model is beneficial to the sector.

For firms operating under regulatory regimes, decisions made by regulatory bodies augment other factors of production i.e. demand, price and technology to maximize output and net revenues (Bower, 1980). According to SASRA (2013), such decisions are normally geared towards promoting governance by enforcing openness and accountability in how SACCO business is conducted.

For SACCOs to be competitive enough and grow sustainably, good governance is very important. However, this can only be achieved through regulations (Ragui and Muriuki, 2013). Njuguna (2012) notes that without regulations, there are tendencies for management and the board to mismanage public institutions and once that happens, it is even more difficult to get them back to normal operation. Therefore, continuous improvement in governance of SACCOs through regulation enhances business continuity as well as competition in the SACCO subsector.

Almost all regulations are well intended and aimed at solving complex problems. However, regulations can be particularly burdensome. Ferri and Kalmi (2014) for example notes that over 50% of past corporate mergers (and prospective ones for that matter) in Canada are motivated by regulatory requirements. Further, regulations may be captured to serve interests of a few at the expense of public social welfare and may also result in adverse consequences like a deepening market failure instead of correcting one (Stigler, 1971; Peltzman, 1975).

Additionally, regulations are costly. Regulatory requirements tend to bloat costs associated with business operations (Hui et al., 2016). To illustrate, firms report reduced net incomes as they pile compliance related expenses including hiring new staff, and reduction of working capital to cater

for regulatory costs. According to SASRA (2011), some of these regulatory related costs are required immediately upon application for license, and this has the potential to distort business models as resources are directed towards compliance other than the core business of the institution.

Regulations also have a negative effect on credit unions' business operations (Ferri and Kalmi, 2014). Firstly, regulators are seen as inconsequential and only aimed at micromanaging the credit unions by distorting their business model and mission. Secondly, regulations constrain the credit unions ability to redistribute earnings to their members by forcing them to retain part of the surplus to bolster capital. Thirdly, regulations inhibit new product innovation thereby limiting competitiveness and the scope of services to members.

2.4 Empirical Literature Review

Giuseppe and Stefano (2003) used data of over twenty years to empirically investigate how manufacturing and services industries growths in Organisation for Economic Co-operation and Development (OECD) countries are affected by regulations, and found that economic market liberalization and private-governance related reforms stimulates and improves Multi-Factor Productivity (MFP). From these findings, regulations promoting free market mechanisms have a positive and significant impact in determining productivity, and this cuts across all sectors.

Using panel annual data from three countries covering the period 1993-2011, Acikgoz et al. (2014) investigated what impacts regulation and taxes have on long term economic growth and found a significant positive correlation between growth and government interventions through taxes and regulation. However, unlike tax burdens, government regulations were only found to have worked positively for two-county groups implying that diversity of regulations work differently for different business regimes.

Djankov et al. (2006) sampled 135 countries with heterogeneous economic regulations to investigate how such regulatory regimes affect economic growth. From their findings, there was a 2.3 percent rise in economic growths annually for countries that had 'improved' regulations. This shows that progressive government regulations impacts growth positively.

Despite the positive effect associated with regulations, some researchers have found regulations to be detrimental. Dawson and Seater (2013) found a statistically negative correlation between US federal regulations and macroeconomic performance. From their analysis, regulations have the potential to substantially affect total factor productivity (i.e labour and capital) and these effects are manifested in the firms' final output. Specifically, regulations were found to induce significant variations in output and factors that produce it (labour and capital).

Additionally, Loayza et al, (2005) found that a heavier regulatory burden impacted growth negatively. Regulations specifically in labour and products markets promotes informality and this has a long run impact on growth. These effects are however reduced as the overall operating legal framework improves signifying a positive correlation between growth and a 'progressive' regulation. These results were confirmed by the findings by Jalilian et al, (2006) who observed that economic performance in developing countries is majorly affected by their quality of regulations. Thus, a conservative regulation affects performance negatively.

2.5 Overview of the Literature

It is evident from both theoretical reviews and empirical studies that the impact of regulation is generally inconclusive.

On one hand, regulation is desired. It reinforces professionalism in the management of institutions by providing comprehensive performance standards, continuous monitoring and evaluation through regulatory reports. This, in turn, ensures uniformity and continuity in the management of corporate entities.

Regulation, however, may have negative effects on businesses. For example, the development of regulations over time may lead to repetitive, outdated, and even conflicting set of rules, which may complicate and distort business decisions (Coffey et al, 2016). Since business may vary their investment decisions so as to meet compliance requirements, such actions may have negative long run effects on businesses and the economy in general.

This study thus sought to investigate the impact of DTS Regulations on growth of DTS in Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section of the study presents the theoretical framework, the empirical model, description of variables and measurement. The last two sections includes data types and sources.

3.2 Theoretical Framework

Virtually all activities undertaken by economic agents are associated with externalities (positive and/or negative). Following Buchanan and Stubblebine (1962), an externality can be defined as an involuntary opportunity foregone or advantage gained as a result of interventions by a competent authority.

Other than resulting in a general market failure, externalities also represent a government's inefficiency. The most notable example of government failure associated with externalities is regulatory capture. In this context, regulated firms may sway policy options in their favor resulting in market inefficiency.

Following Becker (1983), this study adopted a simple multifactor production function model to specifically measure the impact of Regulations and subsector-specific factors that affect welfare of DTS (Giuseppe and Stefano, 2003). Therefore, as Regulations become more and more favorable to the capturing group, their welfare or wealth increases, and hence;

$$W = f\ (C, S_i) \dotfill (2)$$

Where,

W = welfare or wealth accumulated by the capturing group

C = a dummy variable (typically) having a value of 1or 0 depending on whether Regulations are favorable or detrimental

S_i = other independent variable(s) affecting the group's wealth accumulation or welfare

Assuming that SACCO members' only motivation to save is credit (loan) to be advanced to them or return (rebates/interest on savings) they get, then S_i can further be decomposed as

$$S_i = f(L, P) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ (3)}$$

Combining equation (2) and (3) we get;

$$W = f(C, L, P) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ (4)}$$

Since savings in DTS represents member's wealth which is accumulated over time (and mostly on a monthly basis), substituting Wealth (W) in equation (4) with Savings (S) we get;

$$S = f(C, L, P) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ (5)}$$

DTS Regulations have the potential to affect DTS positively on governance, credit management, MIS, marketing and product development, and HRM (SASRA, 2014) which in turn increases the perception of 'well-managed' institutions thereby accelerating membership growth, savings accumulation, and easy access to credit.

Consequently, DTS Regulations may impact negatively on the growth of DTS resulting from increased costs towards compliance, bureaucracy in product development and more retention of surplus leading to low payments. These negative effects may make members withdraw thereby affecting negatively membership growth, savings mobilization, issuance of loans, assets growth etc.

DTS Regulations are thereby modeled to represent an externality (positive and/or negative).

By substituting (C) in equation (5) with an externality (E) associated with DTS Regulations, we get;

$$S = f(L, P, E) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{ (6)}$$

Savings accumulation in DTS can therefore be modeled as a function of loan disbursements, rebates/dividends paid to members on their investment and externality (positive or negative) associated with enhanced Regulations (DTS Regulations).

For simplicity and due to lack of data on rebates/dividends payout, we shall use a proxy (total income), and hence

$$S = f(L, P, E) = L^\alpha P^\beta E^{1-\alpha-\beta} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (7)$$

Where S is gross savings, L is the gross loans, P is the payout to members (total income), and E refers to the externality generated by DTS Regulations while α and β represent the shares of loans and payout respectively.

By offering quasi banking services, DTSs are able to offer additional credit facilities in FOSA without necessarily resulting in a proportionate increase in member's wealth (savings). Therefore, α and β are jointly less than 1.

Further, the externality associated with DTS Regulations can affect DTS in three ways;

    i.   It can lead to a change in membership (positively or negatively)

    ii.   DTS may accumulate more assets or reduce the same to comply with the guidelines, or

    iii.   It affects the level of disclosures within the DTS

Since the level of disclosures cannot be measured, the study used share capital as a proxy. Share capital was chosen for two reasons. Firstly, DTS Regulations requires that DTS observe three capital adequacy ratios[3] two of which have a component of share capital. Share capital thus augments core capital. Secondly, data on institutional capital prior to DTS Regulations is very scanty.

The externality associated with DTS Regulations can further be modeled using a Cobb-Douglas function:

$$E = f(M, T_a, C_k) = (M, T_a, C_k)^\emptyset \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (8)$$

Where $\emptyset$ is the responsiveness of membership growth (M), total assets (T_a) and core capital (C_k) to DTS Regulations. If $\emptyset > 0$, then DTS Regulations has a positive effect on the growth of savings and hence growth of DTS. If however $\emptyset < 0$, then DTS Regulations has less than proportionate

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[3]The ratios are: core capita/total deposits; core capita/total assets; and institutional capital/total assets. In the event a DTS closes shop, members are entitled to a refund of part of their savings and this is done from the core capital. Core capital comprise of Institutional capital mainly made of retained earnings, and share capital.

impact on growth of DTS or they could be affecting growth of savings negatively assuming a negative coefficient of Ø. If Ø=0, DTS Regulations has no impact at all.

Combining equations (7) and (8) we have,

$$S = f(L, P, E) = L^\alpha P^\beta (M, T_a, C_k)^{\emptyset(1-\alpha-\beta)} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{(9)}$$

3.3 Model Specification

By taking logarithms and time derivatives of equation (9) we obtain a standard growth accounting equation below:

$$g_S = [\alpha + \emptyset(1-\alpha-\beta)]g_L + [\beta + \emptyset(1-\alpha-\beta)]g_P + \emptyset(1-\alpha-\beta)g_M + \emptyset(1-\alpha-\beta)g_{T_a} + \emptyset(1-\alpha-\beta)g_{C_k} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.\text{(10)}$$

Where g_i is the growth rate of $i = S, L, P, M, T_a, C_k$. DTS Regulations thus affects the growth of DTS in Kenya by a factor $\emptyset(1-\alpha-\beta)$.

The study therefore estimated the empirical model in equation (10), for within and post DTS Regulations (Sacco Societies Act) period.

In general and for simplicity, the multi-factor savings function of DTSi in year t can be written in the form of the standard (log) linear regression:

$$s_{it} = \alpha_{it} + \beta_1 l_{it} + \beta_2 p_{it} + \beta_3 m_{it} + \beta_4 t_{a_{it}} + \beta_5 c_{k_{it}} + u_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.\text{(11)}$$

where $i = 1,..,N$; $t = 1,\dots,T$ and u_{it} the disturbance term.

3.4 Data Collection and Sampling Design

The study used data obtained from SASRA database and covered the period 2007 to 2016. Though the Sacco Societies Act became operational on September 26th 2009, the year of assent (2008) was assumed to be the implementation year, and thus 2007 became the base year for continuity purposes. A total of 10 DTS SACCOs operating across the country were sampled.

3.4.1 Sampling Frame and Technique

Sample frame is the entire population from which a sample is drawn (Cooper and Schindler, 2003). For this study a total of 176 SACCOs undertaking deposit taking were the whole set.

Sampling refers to a method of picking observations from a larger set (population) (Taherdoost, 2016) since researchers may lack adequate time or resources to use the whole set in analysis.

Where sections of data contain certain attributes specific to a particular sample, a stratified sampling technique presents a most relevant tool of sampling (Sanders, et al, 2003). In this method, data is segmented into stratum (sharing similar characteristics) and observation are picked either randomly or otherwise from each strata. Sekaran (2003) argues that stratified sampling makes it easier for the entire population to be well represented and compare features within groups.

DTS are generally classified by way of initial defined common bond[4] (private sector, community, government, teacher and farmer affiliated) and size of their assets (large, medium, or small). The study adopted the first classification but only considered two sets for size (large and small). A large DTS is a SACCO with asset base above Kes5bn while small refers to a SACCO with asset base below Kes5bn as at 31st December 2017. Data prior to 2010 was very scanty and thus the study only sampled 10DTS which had complete data.

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[4] Common bond refers to a sector or group of members that a SACCO serves.

3.5 Description of Variables

Table 3. 1 Description of Variables

Variable	Definition	Description
Savings(S)	These are remittances done by members of a DTS frequently (mostly on a monthly basis), out which they can either use as a guarantee for loans, use to borrow loans based on a DTS multiplier effect and/or earn interest (rebates).	Savings will be the dependent variable.
Loans(L)	This is the cumulative loans balances (measured on an annual bases) advanced to members of a SACCO.	Can have a positive or negative coefficient where regulations are helpful or detrimental respectively
Rebates(R)	This is the return (annual) paid to members for their regular contributions (savings).	Can have a positive or negative coefficient where regulations are helpful or detrimental respectively
Membership(M)	These are persons (individual, group or companies) belonging to a DTS.	Can have a positive or negative coefficient where regulations are helpful or detrimental respectively
Total Assets(T)	These are properties (both in physical form or otherwise) owned by a DTS.	Can have a positive or negative coefficient where regulations are helpful or detrimental respectively
Core Capital(C)	The minimum amount of capital that DTS must have on hand. Core capital consist of equity capital and institutional capital. For DTS, the minimum is Kes10 million imposed by SASRA regulations. DTS will continue to grow their levels of core capital as they comply with SASRA regulations	Expected to have a positive coefficient

CHAPTER FOUR

DATA ANALYSIS, RESULTS PRESENTATION AND DISCUSSION

4.1 Introduction

This section presents results from the empirical estimation and their economic interpretations. The section begins by reviewing the descriptive statistics of all the variables in the estimable model and then goes further to establish the panel data properties of the variables. Finally, the section presents the resulting Pooled OLS and Random Effect estimation.

4.2 Descriptive statistics

To determine the statistical properties of the data, a descriptive analysis was conducted. The mean, standard deviation, the minimum and maximum values were determined. The mean is the average value of the particular variables over the period under consideration. The standard deviation measures the dispersion from the mean and it captures the degree of variability. The minimum and maximum shows the minimum values and the maximum values of various variables over a given period under which observations under consideration are spread. The results of the descriptive statistics are shown in the table below.

Table 4. 1 Descriptive Statistics

Variable	Obs	Mean	Std. Dev	Min	Max
Savings	100	3.76e+09	4.99e+09	1.48e+08	2.58e+10
Loans	100	3.94e+09	5.45e+09	9.84e+07	2.48e+10
Total Income	100	6.62e+08	9.63e+08	9634000	4.97e+09
Total Assets	100	5.20e+09	7.18e+09	2.12e+08	3.74e+10
Membership	100	25893.87	33511.99	452	134986
Share Capital	100	1.52e+08	2.57e+08	1000	1.25e+09

Source: Owner's Computation

As depicted by table 4.1, column two captures the number of the observations for the variables which was 100 for all the variables.

In the third column which captures the mean values of the variables under study, Membership in SACCOs had the lowest mean of 25893.87 while total assets had the highest with a mean of

5.20e+09. The standard deviation indicates the variation of the observations from the mean of the variables. Total Assets had the highest standard deviation with 7.18e+09 while membership had the lowest standard deviation of 33511.99.

This study also presented the maximum and minimum values of the variables. It was noted that the least value of SACCO membership was 452, 1000 for share capital and 2.12e+08 for total assets. Consequently, total assets had 3.74e+10 as the highest value attainable for all the SACCOs.

4.3 Pre-Estimation Tests

4.3.1   Normality Test

This test was done to test if the data exhibited kurtosis or was skewed in any way.

Table 4. 2 Normality Test Results

Variable	Obs	Test Statistic	Prob>z	Comment
Savings	100	7.201	0.00000	Not-Normal
Loans	100	7.304	0.00000	Not-Normal
Total Income	100	7.535	0.00000	Not-Normal
Total Assets	100	7.360	0.00000	Not-Normal
Membership	100	6.856	0.00000	Not-Normal
Share Capital	100	7.920	0.00000	Not-Normal

Source: Owner's Computation

The study results presented in table 4.2 above were done under the null hypothesis on non-Normality. At 1 percent significance level, the study failed to reject the null hypothesis on non-Normality using the Shapiro - Wilk test, for all variables and concluded that all the variables were not normally distributed.

4.3.2 Omitted Variable Test

Regression models may suffer misspecifications if explanatory variables and the dependent variable are not well accounted for and this may lead to unbiased estimates, and incorrect models (Gelfand et al., 1990). This study used the Ramsey's RESET test under the null hypothesis that the model has no omitted variables to test for omitted variables. The results are shown in figure 4.1 below.

Figure 4. 1 Ramsey's RESET Test Results

```
Ramsey RESET test using powers of the fitted values of savings
      Ho:  model has no omitted variables
                F(3, 91) =      10.79
                Prob > F =       0.0000
```

Source: Owner's Computation

Based on the test results we rejected the null hypothesis and concluded that the model suffered from an omitted variable problem. To address this problem, auxiliary variables were used to remove omitted-variable and measurement-error biases from the equation coefficients.

4.3.3 Autocorrelation Test

Serial correlation occurs when the current value of a variable determines the value it will assume in the future, and this is normally manifested through error terms. Though serial correlation does not affect unbiasedness of estimators, their efficiency may be affected (Wooldridge, 2002). This study carried out Wooldridge test for autocorrelation in panel data. From the test results in figure 4.2 below, the study did not reject the null hypothesis of no serial correlation and concluded that the data was free of first-order autocorrelation.

Figure 4. 2 Woolridge Test for Autocorrelation Test Results

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      9) =      25.359
           Prob > F =       0.0007
```

Source: Owner's Computation

4.3.4 Model Selection: Fixed and Random Effects

Panel data more often than not make use of Fixed or Random effects models in their analysis. In a fixed effects model, the unobserved variables are assumed to be correlated with the regressors in the model (Nickell, 1981).) Therefore, this model controls for time-invariant unobserved effects (Gujarat, 2004). Unfortunately, the effects of time-invariant variables that are measured cannot be estimated. On the other hand, in a random effects model, the unobserved variables are uncorrelated with other included variables in the model (Allison, 2009).

A Hausman test was carried for the model selection. Under the null hypothesis, individual (or group) effects and other regressors in the model have no correlation whatsoever and thus random effects model is to apply.

The results in figure 4.3 below gave a chi-square probability of 96.04 percent which is far above 5 percent. We therefore failed to reject the null hypothesis and concluded that the random effect model was appropriate. Having selected random effects as the appropriate model, the study proceeded to determine the Lagrange multiplier test for random effect model as discussed below.

Figure 4. 3 Hausman Test Results

```
                 ―――― Coefficients ――――
                 (b)           (B)           (b-B)       sqrt(diag(V_b-V_B))
                 FE            RE            Difference         S.E.

    Ln_Loans       .28048       .2677561       .0127238           .036955
Ln_Total_I~e     -.0680884     -.0759267       .0078383           .014753
Ln_Total_A~s      .7007454      .7280354      -.0272899          .0345233
Ln_Share_C~l      .0115419      .0100648        .001477          .0027577
Ln_Members~p      .0311131      .0386493      -.0075363          .0176152

                          b = consistent under Ho and Ha; obtained from xtreg
               B = inconsistent under Ha, efficient under Ho; obtained from xtreg

      Test:  Ho:  difference in coefficients not systematic

             chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                     =          1.03
             Prob>chi2 =      0.9604
```

Source: Owner's Computation

4.3.5 Heteroscedasticity Test

Cross-sectional data may contain units that have significant variances in size or magnitude. Due to this phenomenon, the scatter of their error terms may exhibit some levels of heteroscedasticity and this affects the standard error in OLS estimator. The study carried out a Breusch and Pagan Lagrangian multiplier test for random effects under the null hypothesis of homoscedasticity.

As presented in figure 4.4 below, we failed to reject the null hypothesis and concluded that the OLS residuals do not contain individual specific error components (no heteroscedasticity).

Figure 4. 4 Breusch and Pagan Lagrangian multiplier Test Results

```
Breusch and Pagan Lagrangian multiplier test for random effects

        ln_Savings[sacco,t] = Xb + u[sacco] + e[sacco,t]

        Estimated results:
                            |       Var        sd = sqrt(Var)
                   ---------+-----------------------------------
            ln_Savi~s       |    1.503895          1.226334
                    e       |     .006068          .0778976
                    u       |    .0237551          .1541268

        Test:    Var(u) = 0
                               chibar2(01) =    161.82
                             Prob > chibar2 =    0.0000
```

Source: Owner's Computation

4.3.6 Pooled and Random Effects Model Estimations

In a pooled OLS model we ignore individual or group heterogeneity of the data. All observations are pooled and estimated through OLS regression to give consistent and efficient estimates (Gujarat, 2004). On the other hand, random effects model assumes that there exists individual-specific effect or variation across entities but which are uncorrelated with the regressors in the model. This allows for time invariant variables to be included as explanatory variables.

The study estimated both models and the results are presented in table 4.3 below.

Table 4. 3 Pooled and Random Effect Models' Test Results

	Model 1	Model 2
	Pooled OLS	**Random Effect Regression**
Loans	0.139[*]	0.268[***]
	(0.0533)	(0.0794)
Total Income	-0.108[*]	-0.0759[*]
	(0.0447)	(0.0380)
Assets	0.928[***]	0.728[***]
	(0.0727)	(0.0951)
Share Capital	0.0101	0.0101
	(0.00894)	(0.00776)
Membership	0.0356[*]	0.0386
	(0.0136)	(0.0367)
Constant	-0.110	0.818
	(0.281)	(0.977)
Observations	100	100
Adjusted R^2	0.989	-
F-Stat	(5,94)	-
Prob>F	0.0000	-
Root MSE	0.1296	-
Number of Groups	-	10
Wald chi2(5)	-	1548.60
Prob > chi2	-	0.000

Standard errors in parentheses [*]$p< 0.05$, [**]$p< 0.01$, [***]$p< 0.001$

Source: Owner's Computation

From table 4.3 above, the pooled OLS model fitted the study's data very well at 0.05 significance level (F=5,94 and P<.000). This is indicated by R-squared of 0.989 meaning that loans, total income, assets, share capital, and membership explained 98.9 percent of the total variance in savings.

Therefore, the study's pooled OLS model is indicated below:

Savings=-0.110 + 0.139*Loans - 0.108*Total Income + 0.928*Total Assets + 0 .0101*Share Capital + 0.0356*Membership

From the above model, loans, total assets, share capital, and membership were positively related to savings. The study found that the loan disbursement resulted into increased savings accumulation from members. This could be explained to mean that members aspire to access more and more loans for development purposes and since loan limit is pegged to deposits (a certain specified deposits multiplier) a higher savings amount is targeted by members themselves. Equally, the positive correlation between savings and total assets could be attributed to the fact that as more members access loans, the basic assets of DTS (loans) increases. This increase in loans as assets for DTS augments other forms assets held by DTS.

Consequently, the minimum core capital requirements for DTS is attributable to the positive correlation between savings and share capital, indicating that DTSs must continue to grow their capital shares as they mobilize more deposits from members. Also, the number of members per DTS positively influenced savings. This is attributed to the fact that DTSs with a large pool of members are highly likely to mobilize more deposits.

On the other hand, total income (payout to members) were significantly negatively correlated with savings. This could be explained to mean two things. Firstly members are motivated to join and save in a DTS majorly to access loans and not to wait for annual returns since high expected returns may translate to costly loans. Secondly, in a bid to comply with capital adequacy and loan loss provisioning requirements DTS are forced to increase retention of surpluses to grow their general reserves and this reduces annual returns to members.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

5.1 Introduction

The main objective of this study was to determine the impact of DTS Regulations on growth of DTS in Kenya. Specifically, the study sought to determine the extent to which DTS Regulations affect loans, payout to members, membership growth, total assets, and financial disclosures within DTS in Kenya. The study employed a panel regression model and used the simple multi-factor production function model by Becker (1983) to fit the variables. The results revealed that DTS Regulation is a positive externality. Specifically, both financial disclosures, membership growth, loan disbursements and total assets were found to be positively correlated with Regulations.

5.2 Summary of the Key Findings and Conclusion

Data used in this study was obtained from SASRA database and covered a total of 10 DTS. The DTS were selected using stratified sampling technique, and on the basis that they had consistent data on all variables for the study period.

A pooled OLS model fitted the study's data very well at 0.05 significance level. The study's explanatory variables namely loans, total income, total assets, membership, and share capital accounted for 98.9 percent of the total variation in savings of DTS. Loans, total assets, share capital, and membership were positively correlated with the dependent variable.

However, the study also found evidence of negative relationship between total income and savings and this is primarily due to crowding out of loans to members. Members' prefer to grow their wealth by accessing loans which they use for development rather than waiting for annual returns to reinvest. Access to loans was therefore found to be more productive at enhancing growth of DTS in Kenya and thus the greatest motivation for individuals joining a SACCO.

Given that savings accumulation is a stimulus for economic growth and development, the study found evidence that self-regulation (or no regulation at all) is detrimental to the growth of DTSs (though not statistically significant). This is evidenced by the negative relationship between

savings and the constant. The study therefore concluded that DTS Regulations impacts positively on growth of DTS in Kenya.

5.3 Policy Implications and Recommendations

From the study findings, it was evident that since inception of DTS Regulations (the SACCO Societies Act (2008)) in Kenya, much growth has been witnessed in the DTS sub sector. The study found that DTS Regulations is an externality which impacts positively on growth of DTS in Kenya and complements both rebates and access to loans.

The study therefore recommends that DTS Regulations should be enhanced for growth and stability of the sub sector. In order to achieve these, there is need for regulatory agencies to develop and enhance effective risk-based strategies and intervention mechanisms aimed at enhancing soundness of DTS while ensuring business continuity. Interventions by the regulatory agencies should focus on;

1. Strengthening governance structures in DTS to ensure sound management of member funds. Owing to the rapid growth of members and deposits, it is imperative that management of DTS be above board. This can be done by setting basic minimum requirements for one to qualify to sit in the Board of directors or senior management such as level of education, level of professional/leadership experience etc. This will complement the proper and fit test requirements currently in practice for Board and senior managers of DTS.

2. Formation of a central liquidity facility or equivalent for DTS. Since growth is majorly motivated by access to loans, loan demand has the potential to exceed deposits mobilization in DTS and this can curtail further growth in the sub sector if cheap funds are not available to cushion DTS against unusual or unexpected shortfalls in liquidity.

3. Enhance full disclosures in DTS by embracing technology driven service provision i.e access to member statements, financial records and statements, by-laws and other operating manuals, access to credit (loans) etc. Due to the significance of financial disclosures on growth of DTS, this openness move has the potential to create and enhance positive perception for well managed DTS and attract more members.

Therefore, this study presents a crucial decision point for management of DTSs, investors, regulatory agencies and other publics on how to not only ensure growth of DTSs in Kenya but also ensuring that the growth momentum is sustainable to an indefinite future.

5.4 Limitations of the Study

The study endeavored to use data for all licensed DTSs in Kenya. Unfortunately, data prior to 2010 was very scanty and inconsistent prompting a sampling approach. Furthermore, there were significant variations across DTSs in terms of date of licensing and this made the range differences big. Only those DTS that had met licensing requirement to undertake deposit-taking business as at December 2011 were sampled. The study was also limited in the number of observations as there was no adequate data especially in the pre-DTS Regulations era.

5.5 Areas for Further Research

There are other factors that greatly promote the growth of DTSs in Kenya besides access to loans, return on investment and constant review of operating legal framework. Therefore, studies to determine these factors would suffice. Additionally, it is also worth studying whether the differences in operating legal frameworks for DTS and non-DTS in Kenya promotes growth or management disparities in the two sub-sectors.

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APPENDIX 1

SAMPLED DEPOSIT TAKING SACCOs

DTS NAME	INITIAL DEFINED COMMON BOND	CATEGORY (LARGE OR SMALL)	
MWALIMU NATIONAL	TEACHER	LARGE	
TRANS NATION	TEACHER		SMALL
UN	PRIVATE	LARGE	
NATION	PRIVATE		SMALL
KENYA POLICE	GOVERNMENT	LARGE	
SHERIA	GOVERNMENT		SMALL
KENYA BANKERS	COMMUNITY	LARGE	
2NK	COMMUNITY		SMALL
CHAI	FARMER*		SMALL
K-UNITY	FARMER*		SMALL

For farmer based, no DTS with above Kes5bn asset base had consistent data prior to 2010. The study therefore randomly sampled an additional small DTS in this category.