

**ENTERPRISE RESOURCE PLANNING IMPLEMENTATION AND
VALUE REALIZATION IN SAVINGS CREDIT CO-OPERATIVE
SOCIETY OF NAIROBI**

By

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DECLARATION

This Research Project is my original work and has not been presented for any other university award.

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DEDICATION

This study is dedicated to my dear husband Duncan Juma for his tireless encouragement, financial support and his time during the research.

To my children Newton, Melycer, Faith and Naomi. Mum could not have gone this far without your understanding.

I love you all.

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LIST OF ABBREVIATIONS AND ACRONYMS

BOSA- Bank Office Service Activity

CBA- Cost-Benefit Analysis

CRM- Customer Relation Management

ERM- Employee Relationship Management

ERP- Enterprise Resource Planning

FOSA- Front Office Service Activity

MRP- Material Requirement Planning

SACCO- Savings Credit Co-Operative Society

PRM- Partner Relationship Management

ABSTRACT

The purpose of the study was to establish the value realizations for SACCO's after the implementation of Enterprise Resource Planning solutions, Nairobi region. Specific objective included: to establish the levels of ERP implementation, to establish the value realized by SACCOs through ERP implementation, to determine the relationship between ERP implementation and business value realization for SACCOs, to establish the challenges faced by SACCOs during the implementation of ERP systems. The researcher administered the questionnaires to the respondents randomly on a drop and pick basis. The data collected was expected to give both quantitative and qualitative results and it was analyzed using descriptive and regression model. It was found out that there was a strong relationship between the implementation level and the benefits of the ERP systems to SACCOs. The findings recommended that ERP systems should for customer relationship management; education, training and mentorship; monitoring and evaluation; and for research and development and for these reason, SACCOs should invest in the ERP systems.

CHAPTER ONE: INTRODUCTION

1.1 Background of the study

Enterprise Resource Planning systems are known to be information technology solutions that integrate and automate administrative and customer functionalities in organizations (Deshmukh, 2014). ERP has its origin in the manufacturing and production sectors where it was used to perform different tasks like manufacturing of the products, marketing the produce through automating the marketing system which has led to the today's e-business, online banking, supply chain management (Swartz & Orgill, 2001).

During its evolution, ERPs were used to phase out cost and efficiency pressures in organization (Wang & Ramiller, 2009). ERPs has a lot of functionalities; administrative functionality includes human resource, accounting, payroll, and billing and customer functionalities which include account opening, account balance checking, online deposit and withdrawals, statement retrieval, money transfer among other services (Deshmukh, 2014)

The Savings Credit Co-operative Society (SACCO) systems were formed through mutual membership organization that involves pooling together of member voluntary savings in form of shares basing on either their geographical area, employment, community or any other affiliation (Olando, Jagongo, & Mbewa, 2013). SACCO's are the micro-financial institutions that provide financial services to low income earner, (Partnerships, 2010). They are formulated with the main objective of investing and accumulating wealth, (Olando, Jagongo, & Mbewa, 2013)

A study done by Kesharwani (2005) on ERP prospects for banks found out that ERPs system's creates a considerable flexibility and ease to various banking functions both internally and

externally. This system has enabled most banks to serve their customers to the best of their capability. However since the SACCOs are banking institutions, then they are deemed to benefit from the systems just like the banks.

1.1.1 Enterprise Resource Planning System

ERP has attracted many definitions from different authors both in business and educational level. O'Brien and Marakas (2008) define ERP as a cross functional enterprise system driven by an integrated suite of software modules that supports the basic internal business process of a company. According to Shoemaker (2003) ERP is a modular software package designed to eliminate the fragmentation of information in large business organization through automating and integrating a firms major business practices, sharing common data and process across the entire enterprise.

ERP is a software that handles the enterprise total information needs in an integrated fashion, by improving its data access and accuracy as well as enhancing other business functionalities, (Hawking & Brendan, 2004). Nah (2003) defines ERP as a multi-modular application software package system that integrates key business enterprise and helps manage the important aspects of the business including procurement, order tracking, material management, product planning, manufacturing human resource and financial management. From the definitions, the researcher defines ERP as system software with different modules that integrates organizations functionality and allows sharing and exchange of information between different levels of the organization for value addition.

1.1.2 Value Realization from Information System

Value refers to the impact of the information system on an organization performance at all levels basing on profitability, reliability of information, adaptability of business process, global

outreach, customer satisfaction, learning and growth both internally and externally (Velcu, 2008). Information systems benefits are not experienced overnight. To achieve the benefits of cost cutting and having a common pool of information all depends on how good the system fits the organizations' functionalities and how well it's tailored and configured to match with the organizations culture, operations strategy and the organizational structure (Rashid, Hossain, & Patrick, 2002). These benefits sometimes cannot be associated with the net income of the organization, mostly like the training of the staff can have an impact on the sales or performance of the organization.

Other organizations however use Information System to facilitate all business aspects from sales through finance, production and dispatch of the products and services (Waring & Skoumpopoulou, 2012). According to Rashid, Hossain and Patrick (2002) Information Systems have a lot of value which can be justified including: cost cutting in terms time of product/service production and delivery, reliable information access to member's and managements, easy adaptability of the business processes, e-marketing, e-conferencing and collaborative culture in the organization. It's therefore because of the many values that outweigh the shortcomings that has streamlined Information Systems activities and better quality information which has led to informed decision for service delivery (Waring & Skoumpopoulou, 2012).

Furthermore, Information Systems have helped organizations to be more efficient in billing and resource allocation, managing work activities (Burton, 2005). These enables members to serve their need online, do their money transfer online, accessing statements online and accessing their records online among many other activities (Burton, 2005). Though quantifying the value for Information System implementation is difficult, the benefits are both tangible and intangible and measures should be put in place for value realization (Murphy & Simon, 2002).

1.1.3 Savings Credit Co-operative Society in Nairobi

SACCO were invented in south Germany in 1846 when agricultural crises and drought were on the peak in Europe, by two community business leaders: Freidrich W. Reinfisen and Herman Schultze-Delitsche, who are considered the founding fathers of the Savings and Credit Cooperatives (SACCO's) (Tache, 2006).

SACCOs in Kenya are growing fast due to changes in the financial environment and are adapting to new approaches to SACCO model. By December 2011 there were 6,902 registered SACCO's but only 3,983 were active. These SACCOs includes the Mwalimu, Waumini, Youth, Matatu, Housing, Education, Biashara Community, Jamii, Hazina SACCO just to mention but a few(Comco, 2015).

Nairobi region has 36 registered and licensed SACCOs which are revolving the economy of this region at a high rate to offer front office service activity (FOSA) and back office activity (BOSA) (Kenya, 2014). They are formulated with the main objective of investing and accumulating wealth, (Olando, Jagongo, & Mbewa, 2013).The SACCO's are cooperatives in nature and are developed through autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs (Pelrine, 2010).

1.2 Research Problem

ERP has facilitated decision making with simulations for enhanced responsiveness and change. It uses portal technology, business intelligence, knowledge management, and mobile technologies that save time and reduce the cost of service delivery (Kesharwani, 2005). Mwangi (2013) notes that the major benefits of implementing the ERPs in SACCO's are: need for common platform, process improvement, increased customer responsiveness and improved strategic decision.

Nairobi region has 265 SACCOs registered and only 36 are registered and licensed to offer both BOSA and FOSA services hence playing a crucial role in empowering its members on services and the finances for wealth creation (Kenya, 2014). With their role, SACCO's are required to train their members on their rights, allow them to have access to their financial information, monitoring and evaluation of SACCO activities among many, are the activities that call for a centralized integrated system that can enable them to deliver to their members demand within a short period and to remain competitive at the market (Peline, 2010)

Many studies have been done to establish the challenges in implementing the ERP systems in large organizations. Despite the challenges, it was found out that greater integration is achieved by the ERP systems (Seo, 2013). Another study done by Mwenje (2013) on the Enterprise Resource Planning Systems implementation strategies in commercial banks in Kenya found out that the implementation strategy is important for banks to get return on their investment. An investigation on the contribution of the financial stewardship on the growth of SACCOs' wealth with a view to improving their operations for the benefit of the members, to be sustainable and interactive, integrated systems were needed to enable improved governance and the provision of wide range of services, a study done by Olando, Jagongo and Mbewa (2013).

The recent study on viable automation solutions for SACCOs by Partnership (2010), these studies found out that integrated systems were needed for SACCO to enable them improve on governance and cut operation cost respectively. Though closer to SACCO's, ERP solutions have not been fully embraced, those that have implemented the ERPs are not able to justify the benefits of the investment (Tache, 2006). Therefore the question is: do SACCOs in Nairobi Region realize values after implementing ERP solutions?

1.3 Research Objective

The study seeks to establish the value realizations for SACCO's after the implementation of Enterprise Resource Planning solutions Nairobi region.

1.3.1 Specific Objectives

Specific objective will include:-

- i) To establish the levels of ERP implementation
- ii) To establish the value realized by SACCOs through ERP implementation.
- iii) To determine the relationship between ERP implementation and business value realization for SACCOs.
- iv) To establish the challenges faced by SACCOs during the implementation of ERPs

1.4 Significance of the Study

The use of ERPs has gained popularity in both small and large businesses for storing a large amount of data and for longer periods. They have proven to be good in data security and for the installation of data recovery tools. The study will therefore have the following significance to different people from different environment.

The study will help public and private, small and large financial institutions to establish the value realized, and yet to be realized after the successful implementation of the ERP solution. It will help organization to view ERP systems as a strategic tool for improving performance and market competitions and not just a technology.

These will further help those upcoming SACCO's to understand the benefits of implementing ERPs and the reasons as to why they should embrace the technology. It will help other microfinance institutions to build, manage and extend their digital interactions where the staff,

customers and the community at large can interact with them in order to improve efficiency, quality service delivery and improved performance, brought forth by the implementation of ERPs.

The study will help both public and private universities, colleges and other institutions of higher learning to understand the benefits, challenges and the critical success factors of ERP implementation in institutions of higher learning so that they can plan and set strategies in place to ensure a successful implementation process, proper student interaction and diversified services are availed to both the student and the management at large.

The government on the other hand will be in a position to build, manage and extend their digital interactions both internally and globally where the staff, business owners and the community at large can interact with them in order to improve efficiency, service delivery and be able to offer quality products and services, free and fair tender allocation and research and innovation with improved performance and better service delivery.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter outlines the literature review on Enterprise Resource Planning systems, Savings Credit Co-operatives information system, value realization, theories of information systems and business value realization, empirical studies and the conceptual framework.

2.2 Enterprise Resource Planning System

The ERP systems have developed in the last decades in the USA, Europe and Australia, and recently in Asian and African countries. During this period, business organization used the Material Requirement Planning (MRP) system to help in inventory and production management (Al, 2000). However MRP was further developed by adding account modules to MRP II (Waring & Skoumpopoulou, 2012).

During these periods, companies expressed a great deal of dismay and lack of satisfaction with the poor functionality of the MRP II. They had to search for and evaluate new enterprise software technologies and three analysts at Gartner created a framework for comparing software packages and called it “Enterprise Resource Planning” (Wang & Ramiller, 2009), which had additional modules around human resource, sales, operations and logistics (Waring & Skoumpopoulou, 2012).

In Kenya, ERP demand has drastically increased especially in manufacturing, hospitals; education and banking sectors with most micro-finance institutions embracing the technology as it offers the opportunity for the provision of high quality services (Hawking & Brendan, 2004). With the advent in e-commerce, information has been creating a behind the scenes revolution in

business that has seen the massive development of ERP and its implementation in banking institutions and more so in the micro-finance enterprises (Shoemaker, 2003).

According to Laudon, Laudon and Dass (2010) the emerging of the ERP solutions has enabled business organizations to globalize their functionalities. It goes without mentioning that much has been achieved with the use of ERPs in micro finance sectors, as it's a wide spread system that helps in automaton and integration of banking processes, throughout the organization (Ansarinejad, Amalnick, Ghadamyari, Ansarinejad, & Hatami-Shirkouhi, 2011). Employees are now able to connect with other employees from within and outside the continent to share their experiences and challenges, they are able to work on a common agenda from different locations and meet their target without struggle (Al, 2000).

Having successfully implemented the ERP in business organizations, SACCO's have also embraced the idea and those that have already implemented the systems have stated experiencing in the advantage of ERPs (Zornada & Velkavrh, 2005). The implementation and adoption of ERPs has improved service delivery for example increasing control and access to information (Partnerships, 2010).

Today the banking world is aware of the benefit of ERP implementation, not only for service delivery and research but also for other value addition. ERP implementations are meant to connect all SACCO units and its functions to ensure that there is a unified computer system that satisfies the needs of the customers, and value addition to the entire SACCO (Nyaga, 2009). It's also noted by Zornada and Velkavrh (2005) that sooner than later, customers will demand services offered by other organizations that are already using the ERP. Just like business organizations, today SACCO's are running up to ensure that they implement the ERP system to

ensure that their service are accessed globally for value realization (Laudon, Laudon, & Dass, 2010),

ERP products and service has become a mature technology since many business companies have already adopted the system and the SACCO's are on the road of evaluating the values realized with the implementation of the ERP system (Wang & Ramiller, 2009) many researches have been done to establish the benefits of the ERP systems to different sectors of business world.

2.3 Savings Credit Co-operative Society's Information System

The Savings Credit Co-operative Society (SACCO) systems are formed through mutual membership organization that involves pooling together of member voluntary savings in form of shares basing on their geographical area, employment, community or any other affiliation, (Olando, Jagongo, & Mbewa, 2013). Implementing ERP systems in SACCO's helps in utilizing the company's wide framework that links all processes together, coordinates information flow to achieve speed and efficiency (Kesharwani, 2005). Furthermore, technical assistance to SACCO covers all areas of operation including accounting, financial management, information management, market research, governance and human resources (Nyaga, 2009).

Most SACCO's have automated their systems for technical purposes, to improve quality of service, timeliness of their information, for budgeting, staff monitoring, internal auditing, accounting and finance, marketing and technology literacy (Partnerships, 2010). In Kenya, many SACCO's still depend on vendor developed systems for their functionalities. These systems have proved to be the backbone to many modern enterprises at Information system and business level (Gupta, 2011) and it has also ensured accuracy in record keeping and other functionalities of SACCO's, (Tradepub.com, 2014). These vendors include the Bankers Realm MFO (craft

silicon), EasySacco (Amtech), FinSacco (Fintech), Abacus (Fern), Orbit (Neptune), and T24 for MCB (Temenos) (Partnerships, 2010). Other major ERP vendors also include SAP, Oracle, PeopleSoft, Baan and J. D. Edwards (Wang & Ramiller, 2009). This software's are developed to touch all banking functionalities for efficiency and effectiveness to be realized (Kesharwani, 2005). Each institution has its own set of needs which helps them (vendors) to develop the right solutions.

Since SACCO's deal with a variety of customers who have different needs, ERPs provides a better solution to them since they cover different processes, from cash accounting, cash management, and security. This calls for use integration, information, process and applications for higher productivity (Kesharwani, 2005). The major difference in the ERP solutions for SACCO's can be realized when it's being used to perform the task (Solano, 2007). As they plan to implement the ERP system, SACCO's should weigh the benefits that the ERP comes with against the cost of implementing them. This will allow them to measure the value of the systems at long range (AVRAM, 2010).

ERP systems are appealing to most SACCO's that already are using them and they have transformed the way institutions go about providing services (Njihia & Mwirigi, 2014). They have helped them to streamline information flows and unifying departments to ensure data connectivity and integration of other modules for improved service delivery (Allen, Kern, & Havenhand, 2002).

2.4 Enterprise Resource Planning System and Value Realization

Proper management and dissemination of information in today's world is the key driver to improved service delivery (Makokha, Musiega, & Juma, 2013). According to Chesoni (2006)

organizations are needed to solve resource management problems. However technology is changing drastically and there is need for organizations to embrace the technology so that they don't lose the market, (Zornada & Velkavrh, 2005). It's important to note that integrated, uniform, relevant and up-to-date information is very important to the existence of any organization that wants to remain relevant to a given market, (Garg & venkitakrishnan, 2003).

Reliable information access to the SACCO member's and managements involves the integrated departments and functions of the SACCO that makes it easier for information sharing (Boguhn, 2011). Easy adaptability of the business processes and global outreach has ensured business process re-engineering and customization (Otieno, 2010), and continuous evaluation on how to optimize their regional, divisional, and service delivery strategies to support strategic goals (Deshmukh, 2014). Reduced data and operations redundancy and improved collaborative culture has helped in data consolidation, office coordination of activities, system synchronization and significant behavioral change (King, Kvavik & Voloudakis, 2002).

Implementing ERP in SACCO will add a lot of values including increased efficiency, reduce manual effort and lower risk for human error, enables management to enforce compliance with agreed business processes and can immediately identify deviation and ensures increased information access by evaluating and supporting audit functions (Partnerships, 2010). Therefore when institutions decide to implement the ERP, they will be buying into the vendor's imagination of how the institutions functionality and best practices should look like, (Bradford, 2010). This means that institutions should identify, understand and match their functionalities with the systems at the market if they are buying the on the shelf system.

Therefore value is the regard that something is held to deserve, the importance, worth or the usefulness of something (CITE, 2002). In information system, value realization is where

organizations or institutions evaluate, estimate the nature, quality, ability, extent or significance of something, or experience the monetary worthiness of Information Systems in achieving greater business results and driving towards operational excellence, identifying opportunities for consolidating and streamlining the organization operations (Neely & Met, 2013).

2.5 Enterprise Resource Planning System Implementation and Value Realization Challenges

ERP is a major investment to any organization as it involves a lot of money in implementation although it helps in automating and integrating the institutions functionalities (Tian & XU, 2015). According to Njihia and Mwirigi, (2014), financial resource availability, organizational complexities, employee perception, regulatory requirement and having top management support affects the effective implementation of ERP system and which in turn affects an organizations performance.

ERP implementation goes through multiple phases; from adoption to implementation. According to Sykes, Venkatesh and Johnson (2014), it's noted that many organizations will always avoid change. ERP implementation will result in process reengineering, which involves changing the current institutions functionality, back filling of the staff, training, recruitment of talent and retention (swartz & orgill, 2001), this involves a lot of cost and many SACCOs do not have the capability. Converting the legacy system into the new user friendly system is a great challenge to most organizations. However configuration process and transformation of key business processes has led to a lot of losses since many organizations do not have proper procedures for this (Lau, 2003).

On the other hand, ERP implementation has also led to a lot of changes in any given organization (Swartz & Orgill, 2001). It's also noted by Allen, Kern and Havenhand (2002) that ERP implementation requires an extensive business re-engineering, revamping old ways of conducting business, redefining job responsibilities and restructuring the organization to ensure that all the needs of the organization are catered for. It's agreed that in order to implement a project successfully, project managers must have both strategic and functional project capabilities, and also the managements and user support, (Allen, Kern, & Havenhand, 2002).

Many companies have spent huge amounts of money in implementing the ERP system although the investment has not yielded the required result due to some challenges (Chang & Chuo, 2011) Rashid, Hossain and Patrick (2002), notes that organizations will face a lot of challenges before they realize the value of the ERP system. This depending on how the system is accepted and supported by both the management and users may take a short or a long period for the benefits to be realized.

Shortage of management support in terms of user training and an incomplete understanding of how the system is used has become a great challenge leading to a lot of rejections (Chang & Chuo, 2011). Training however enables the user to gain operational skills and understand how the ERP system changes the business processes, and the complexity of ERP systems limits the amount of knowledge that user can absorb before the use the system (Chang & Chuo, 2011), but through communication and feedback from users, improvements can be made to enhance its effectiveness for service delivery

According to Pan, Newell, Huang and Galliers (2006) social and cultural barriers, and user's resistance are the major challenges that are encountered during ERP implementation. On the other hand Nah (2003) argues that top management's participation, social, cultural and change

management program are the key challenges that institutions go through during ERP implementation for service delivery.

Therefore not understanding the true significance of the real project you have taken on, not committing the right resources to the project, not managing the change effectively, not managing benefits by reporting on cost, the ultimate system time of completion and identifying the key functionalities of the system, are among the many challenges that most organizations go through during value realization (Solano, 2007).

Lau (2003) notes that different organizations have implemented the ERP at different levels depending on their capability. Bigger organizations with complex functionalities have some difficulties in implementing the system and the small with few functions organizations have implemented successfully though some may not have implemented due to the cost (Lau, 2003). However some organizations are still using the traditional approach to gather, store manipulate and disseminating data for they are unable to raise the billions of money to implement the ERP (swartz & orgill, 2001). This has become a stumbling block to many that are ready and willing to integrate their system for improved service delivery, but do not have the capability.

According to Lau 2003, organizations need to create a comprehensive change vision which should be operational, develop a change strategy, establish change governance, manage employees and at the same time managing well the organizational culture and people practices will help in change management. For employees and the organization to gain maximum benefit from installed systems, an institution must support them during implementation and post implementation stage, (Deng & Wang, 2014).

However for organizations to have a smooth ERP implementation it's important that they have the support of top management, have appropriate business plan and vision, perform a business process reengineering, effective project management, user involvement, education and training. This can however be extended to the SACCOs and without which then value realization will be impeded (R.Addo-Tenkorang & Helo, 2011). Institutions having known that ERPS is a system with several modules that that will help them share data and allow connectivity among the members, are working towards developing in-house infrastructure though others opt for on the shelf infrastructures, (Deshmukh, 2014).

2.6 Theories of Information System and Business Value Realization

Information technology has allowed sharing of information between different levels of management both internally and externally (Cachon, 2000). According to Cachon (2000), implementation of an information system for value addition in terms of physical flow of information is better than goods and services expansion. According to Laudon, Laudon and Elragal (2013) companies implementing the enterprise system software must first select the functions of the system then matches them with the business process. This will provide values by increasing the operation efficiency and providing firm wide information for better decision making.

Most businesses including SACCOs have implemented different ERPs with different modules for different functionalities (Laudon, Laudon, & Elragal, Management Information Systems, 2013). Customer Relationship Management (CRM) software is one of the modules that help in integrating customers by capturing, consolidating, analyzing and distributing their data to various systems and customer catch points through the e-mails, telephones, websites and wireless devices (Laudon, Laudon, & Dass, Management Information System, 2010).

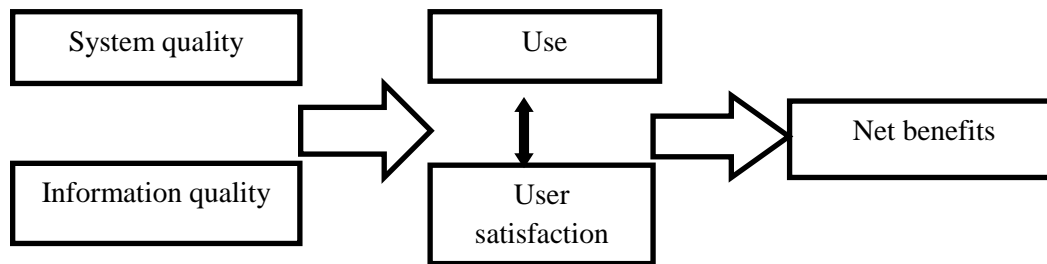
This module is comprehensive in that it contains other modules like the Partner Relationship Management (PRM) for collaboration between the company and its selling partners, and the Employee Relationship Management (ERM) which deals with issues related to employees which includes setting of objectives, employee performance management and training (Laudon, Laudon, & Elragal, Management Information Systems, 2013). Realizing the value of the information system is very key to any given organization as it helps the management to capitalize on the organizational resources, creating the measurement standards and also allows them to take corrective actions (Kohil & Devaraj, 2004).

2.6.1 DeLone and Mclean Information System Success Model

These models help the researcher to understand the value of information system in regard to system investment (DeLone & McLean, 2003). Several success factors will be used to measure the value of the ERP system to SACCOS. The researcher will be measuring the information quality basing on the accessibility of the information both internally and externally, how easy it is for the system to be adapted to business processes and how the system has helped in coordination of different departments to perform different services for better values (Laudon, Laudon, & Elragal, Management Information Systems, 2013)

On the other hand service delivery and quality will be measured against customer satisfaction, improved service delivery and service delivery processes, and system functionality, improved performance and reduced cost respectively (DeLone & McLean, 2003). However the variables will be measured against use of the system and user satisfaction which entirely contributes towards value realization (DeLone & McLean, 2003)

Figure 1: Information System Model



Source: DeLone, W. H., & McLean, E. R. (2003). The DeLone and McLean Model of Information System Success: Ten Year Update. *Journal of Management Information Systems*, 9-30.

2.6.2 Cost-Benefit Analysis Theory

Cost-Benefit Analysis (CBA) is an analytical tool for judging the economic advantages or disadvantages of an investment decision by assessing its costs and benefits in order to assess the welfare change attributable to it (Cretu, 2014). According to Pegut Sound Regional Council (2010) cost-benefit analysis can be used to guide decisions about the relative ranking, or prioritization, of numerous investment options or can be used to determine the economic usefulness of making any given investments in the first place. It's a simple test which consists of accepting only those projects which make a profit at low prices (Dreze & Stern, 1987). It entirely revolves around measuring in "money terms" all the benefits and costs of the project to society' Programs. It's explicitly required, among other elements, as a basis for decision making on the co-financing of major projects included in operational (Cretu, 2014).

The purpose of analysis is to provide a rich body of information assembled in a disciplined manner that can aid decision-makers faced with difficult investment or policy decisions. To this end, cost-benefit analysis must make key analytical assumptions clear and must be able to demonstrate the sensitivity of its findings to these key assumptions (Council, 2010). However, a

standard CBA is structured in seven major steps which include: description of the context, definition of objectives, identification of the project, technical feasibility & Environmental sustainability, financial analysis, economic analysis and risk assessment (Cretu, 2014).

CBA involves comparing values of an activity by assessing the benefits and cost faced by a society with the activity compared to without the activity (Holland, 2012). It follows a framework which includes: Opportunity cost, setting a proper time horizon and forecast future costs and benefits, calculation of economic performance indicators expressed in monetary terms and microeconomic approach which involves the assessment of the project's impact on society as a whole, thereby providing an assessment of expected welfare changes (Cretu, 2014). The formula for Present value criterion is as shown below:

$$PV = \sum_{t=0}^T \frac{B_t - C_t}{(1+r)^t}$$

Where the social discount rate is constant over time denoted as r . B_t and C_t are the benefits and costs of the project in period t , which goes from 0 until the termination date of the project T . If this PV is positive, the project is socially profitable and should be accepted, and if it is negative then the project should be rejected (Boadway, 2006).

The DeLone and McLean IS success model and CBA are good models for measuring the values realized and customer services being offered by the SACCOs now that the ERP system have been implemented. With the models, a researcher can measure if there is an improvement in service delivery process, if there is increased customer satisfaction, reduced direct marketing costs for customers and if there is a reduction in cost for customer acquisition and retention (Laudon, Laudon, & Elragal, Management Information Systems, 2013).

2.7 Empirical Studies

Many studies have been carried out globally, regionally and locally on ERP implementation, adoption and the critical success factors, post implementation challenges in hospitals, banking institutions and more specific the SACCO's. The study therefore sought to outline the relevant studies from university library, private library, public library and the internet search.

Mutongwe and Rahab (2013) in their research on the ERP system solutions for SMEs established that this system enables the full and efficient utilization of resources for its information needs. In this article, they established the major benefit of ERP implementation as being: long term cost reduction, increase in operational efficiency, faster and more accurate information transaction, reduced labor costs, reduced fraud, improved business competition, high return on ERP investment and wide expansions towards the online business environment. This shows that the ERP systems have helped in integrating many business operations and the software also helps in understanding key process and practice in the banking environments (Mutongwe & Rabah, 2013). Therefore the system needs a rigorous evaluation to ascertain its benefits.

A study by Seo (2013) establishes the challenges in implementing the ERP systems in large organizations. Despite the challenges of implementation, organizations are experiencing great benefits of using ERP system. This has made them to be financially competitive and they have also achieved greater integrations of their management system to better manage their processes. On the other hand, a study by Olando, Jagongo and Mbewa (2013) found out that for financial cooperatives to be sustainable and interactive, integrated systems were needed to enable improved governance and the provision of wide range of services.

Tache (2006) conducted a study on the need of a SACCO by farmers to offer financial support to them in running their operation. These move empowered most farmers and many people were

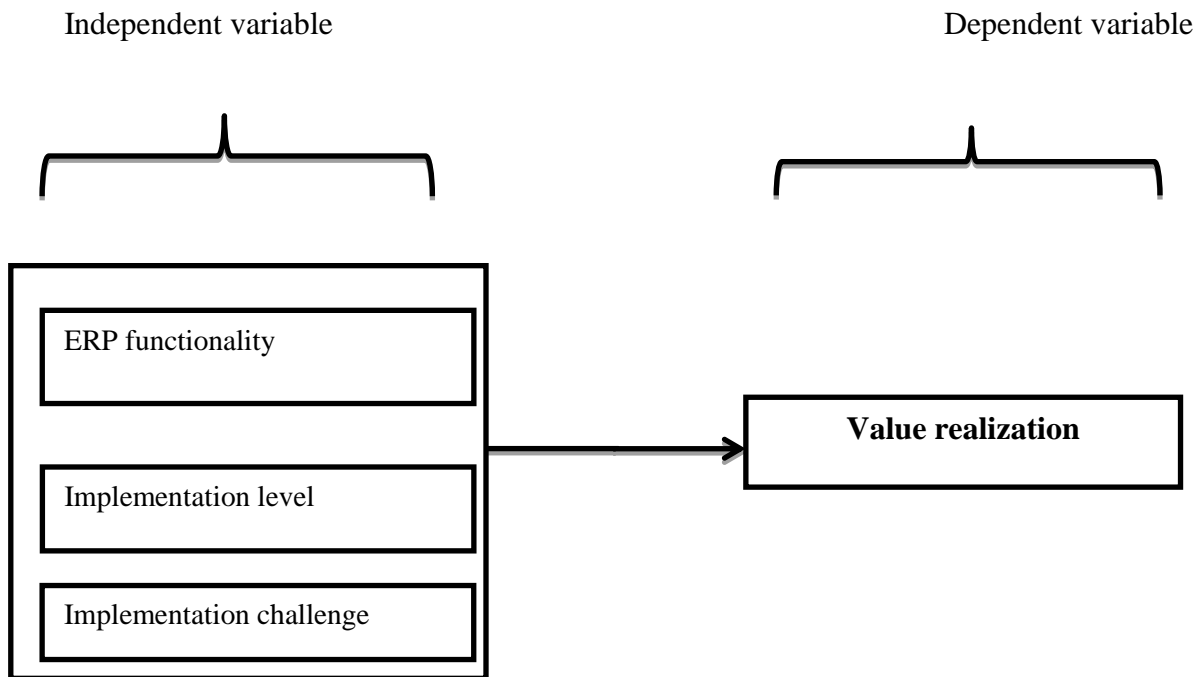
seen engaging in farming activities for they were sure of the finances. The study found out that technical support and system integrations was needed for the SACCO to cut cost, improve on service delivery and incorporate other self-services like online banking, money transfer and also allow easy interaction between the management and the customers.

Another study was conducted by Kuppusamy, Raman, Shanmugam and Solucis (2009) on critical success factors for information system in Islamic financial institutions. The study found out that integrating information systems for financial institution is very paramount for their success. Customers however are looking for banks that can offer unique services and many banks including SACCO's are leveraging on ERPs to maintain their customers. The study also established that ERP systems value can be realized through customer's satisfaction, achieved vision, common data pool and easy interaction (Kuppusamy, Raman, Shanmugam, & Solucis, 2009).

In the study done by Partnerships (2010) on assessment of potential solutions on automation of SACCO's found out that for automation to be done successfully, then the needs of the SACCO must be fully identified, they should have the ability to acquire, customize and implement the system. On the other hand, they should also have the network connectivity for real time data provisions, their ability to manage the system, and their ability to realize the organizational change for effective utilization of the system. Most of the implementation and adoption factors are now in place and fully embraced, but the question remains: have the SACCO realized values after the implementation of the ERP systems.

2.8 Conceptual Framework

Figure 2: Conceptual Framework



CHAPTER THREE: RESEARCH METHODOLOGY

3.0 Introduction

This chapter outlines the research design, population, sampling, data collection methods and data analysis methods.

3.1 Research Design

The researcher used a descriptive cross sectional survey research design. According to Orodho (2003), descriptive research design aimed at answering the questions what, where, when, how much and by what means the system was adding value to the SACCO, and its used mainly when the researcher wants to gain a better understanding of a topic, (Kothari, 2004). One of the main benefits of descriptive research was the fact that it used both quantitative and qualitative data in order to find the solution to whatever was being studied, (Orodho, 2003).

3.2 Population

The target population comprised of 36 registered SACCOs in Nairobi regions, which offer both Bank Office Service Activity (BOSA) and Front Office Service Activity (FOSA) services. However for purposes of the study, the researcher was interested in SACCOs that had been in existence for more than five years, had membership of at least five thousand people and had branches country wide to participate in the study.

3.3 Sampling

The study used stratified sampling method since there were different categories of SACCO in Nairobi region. These strata comprised of the type of formation and the number of years of

operation. However it was noted that for any successful research to be carried out the sample population was to be chosen well, (Khan, 2002). This sampling technique gave equal chances to the potential respondents' SACCO. The sample had a 95% confidence level with a precision of $\pm 10\%$ as shown below:

$$n = \frac{NZ_{\frac{\alpha}{2}}^2 P(1-P)}{e^2(N-1) + Z_{\frac{\alpha}{2}}^2 P(1-P)}$$

$$n = \frac{36(1.96)^2 * 0.05(1-0.05)}{0.01(36-1) + 1.96(0.05)(1-0.05)}$$

$$= 14.825$$

$$\approx 15$$

Where

n =sample size

P =level of significance (5%)

N =population

e =precision (0.01)

Z = statistic used in estimation (1.96)

Where n is the sample size, N is the population size and e is the precision. When this formula is used a sample of 15 SACCOs is achieved. Therefore a sample of 15 SACCOs will be targeted for data collection.

Using the sample size formula, a sample size of 15 SACCOs was achieved. Basing on the requirement of the researcher, only 18 SACCOs qualified even though the formula gave a sample size of 15 SACCOs. Therefore the researcher used the census design for data collection

3.4 Data Collection

The researcher used questionnaires as the instrument for data collection. The questionnaires consisted of structured and non-structured questions. The questionnaire consisted of four sections. Section A: consisted of the SACCO profile, Section B: implementation level, Section C: business value realization, Section D: implementation challenges. These sections helped the research to gather necessary information for analysis concerning the research question. The questionnaires were administered by the researcher to the respondents randomly on a drop and pick basis. In each SACCO, employees were randomly sampled who included the administrator or the information technology manager.

The study used both primary and secondary data. Quantitative and qualitative techniques were used to collect primary data. Secondary data sources were also used to compliment the primary data. This information was obtained from both published and unpublished material like books; reports, journals, thesis and government report and achievements reports from the SACCO's archives was also used to help in comparing the performance in the previous consecutive years of service delivery (Khan, 2002). The researcher personally ensured that the questionnaires were given to the right people, at the right time and place and were later collected after one week (MacDonald & Headlam, 1986).

3.5 Data Analysis

The study was expected to produce both quantitative and qualitative data. Quantitative data was analyzed by employing descriptive statistics to obtain percentages. This technique gave a simple summary about the sample data and present quantitative descriptions in a manageable form (Murphy & Simon, 2002). The analyzed data was presented using tables, charts and figures. To

test the relationship between the depended and the independent variable, graphs and decision tables were used. The analysis of the objectives was done as shown below:

Table 1: Summary of the Objectives

The regression formula used is shown below:

Objectives	Analysis techniques
Levels of ERP implementation	Descriptive statistics
Value realized by SACCOs through ERP implementation	Descriptive statistics
The relationship between ERP implementation and business value realization for SACCOs	Regression model
The challenges faced by SACCOs during the implementation of ERP	Descriptive statistics

$$VR = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

VR=Value Realization

α = constant

β = coefficient of the independent variable

X_1 = functionality

X_2 =implementation level

X_3 = implementation challenges

ϵ = error term

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the findings of the study, data analyses, result presentation and discussion of the findings.

4.1 Response rate

A total of 18 questionnaires were given out to the administrators and or the ICT manager of the SACCO's that were registered and licensed to offer Bank Office Service Activity (BOSA) and Front Office Service Activity (FOSA) and only 13 questionnaires were returned giving a response rate of 72% making it a good response rate for analyzing and reporting the findings.

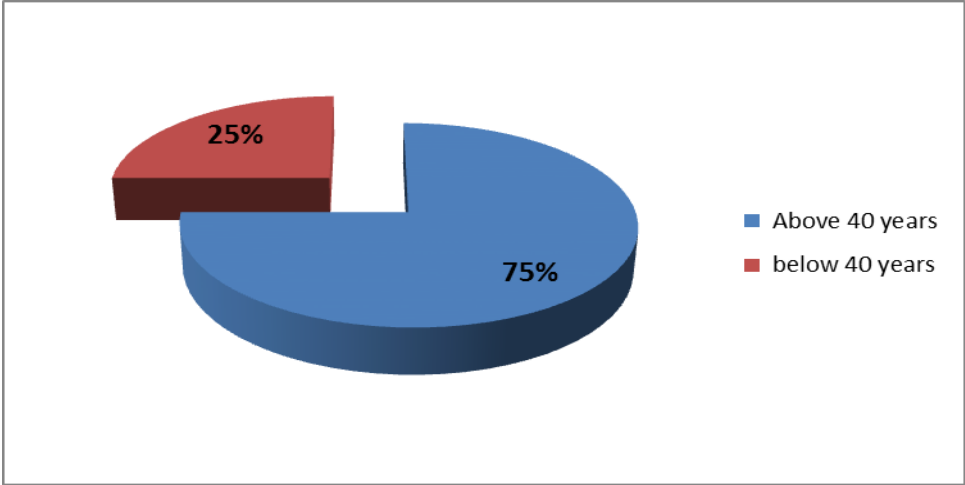
4.2 SACCO demographic information

In assessing the SACCOs Enterprise Resource Planning system Implementation and Value Realization, it was considered important to find out the background information of the SACCOs which was the basis under which the interpretations were made. The study sought to find out the years in which the SACCO societies had been in operation and it was found out that the oldest SACCO that offered BOSA and FOSA had been in operation for above forty years with most of them having operated between thirty and forty years. Many of the SACCO's had been in operation for above 40 years giving a percentage of above 75% years of operation.

Most of the SACCOs know the ERP systems; they were using them in their daily activities. Most SACCOs had implemented the Microsoft Dynamic Navision. According to some SACCO's,

these type of ERP had a good security option and it was user friendly, according to some of the respondents.

Figure 2: SACCO's years of Operation.



4.3 Respondents

The respondents were either the administrators or the ICT manager from SACCOs that had been in operation for more than five years in Nairobi region. The respondents on the other hand, most of them had worked with the SACCO for a period of five years with the majority having worked for the SACCO for between five and ten, and ten to fifteen years and they were able to witness the transition of the SACCO from manual systems to computerized system and finally the Enterprise Resource Planning systems. It was found out that above 50% of the respondents had worked with the SACCO for a period of more than ten years and a smaller percentage had been there for between 5-10 years hence giving us a 25% experience. However, though most of the respondents have worked with the computerized systems and now with the ERP systems they are able to distinguish between the two systems, give the values and the challenges they have experienced. The table below shows the respondents, their experience and the number of years the organization had been in operation.

Table 2: Respondents Experience and Position**Table 2.1 Respondents experience**

Year category	SACCO	No. of respondents
Below 5 years	01,02,04,05,07	5
5-10 years	06, 08, 09, 10, 11, 12	6
10-15 years	03,13	2
Total		13

Table 2.2 Respondents Position

Respondents position	No. of SACCO	Total respondents
ICT manager	09,10,13	3
IT manager	03,04,11,12	4
IT/operations manager	02,05	2
Operations manager	01,08	2
Human resource manager	06	1
Communications manager	07	1
Total		13

4.4 Type of System used by the SACCOs

Most SACCOs use different systems for different purposes. It was found out that 54% of the SACCOs use commercial ERP systems, 38% use applications that share common database and 8% use stand-alone systems as shown on the chart.

Table 3: SACCO system

System used	No. of SACCO	Frequency
Commercial ERP	02,04,06,09,11,13	6
Application that share common database	01,03,05,07,10,12	6
Stand-alone systems	08	1
Total		13

4.5 ERP Adoption and implementation level in SACCOs

In the past five years a number of SACCOs had adopted the ERP system although the system was not implemented in all functional areas. Microsoft Dynamic Navision was the ERP system that had been implemented by most SACCOs in Nairobi region. A few SACCOs use ASAM and the Interactive system and others had a plan of moving to the use of the ERP system.

Financial accounting, management accounting, supply chain, customer care solution and payroll modules had been implemented up to 80%. According to the respondents, these were the key areas where the system had helped them in attaining their objectives for value realization. Human resource management and procurement systems had been implemented to 60% as there wasn't much they could do with these systems. A small percentage of these SACCO's were still dragging behind in the sense that apart from the financial, management, customer care solution and the payroll, the other modules had been implemented only up to 20%.

Table 4: SACCOs and the ERP System Implementation.

SACCO No.	ERP System	Implementati on level (%)	Comments
01	Microsoft Dynamic Navision	40%	Adopted in all departments but at a low rate of 20% and the highest at 80%
02	ASMAS	60%	Moving to Microsoft Dynamics Navision
03	Microsoft Dynamic Navision	100	Adopted in all departments
04	Microsoft Dynamic Navision	91%	Adopted in all key departments
05	Verge Interactive	40%	Adoption in other departments is in the process.
06	Microsoft Dynamic Navision	87%	Adopted in other departments apart from the marketing and procurement department

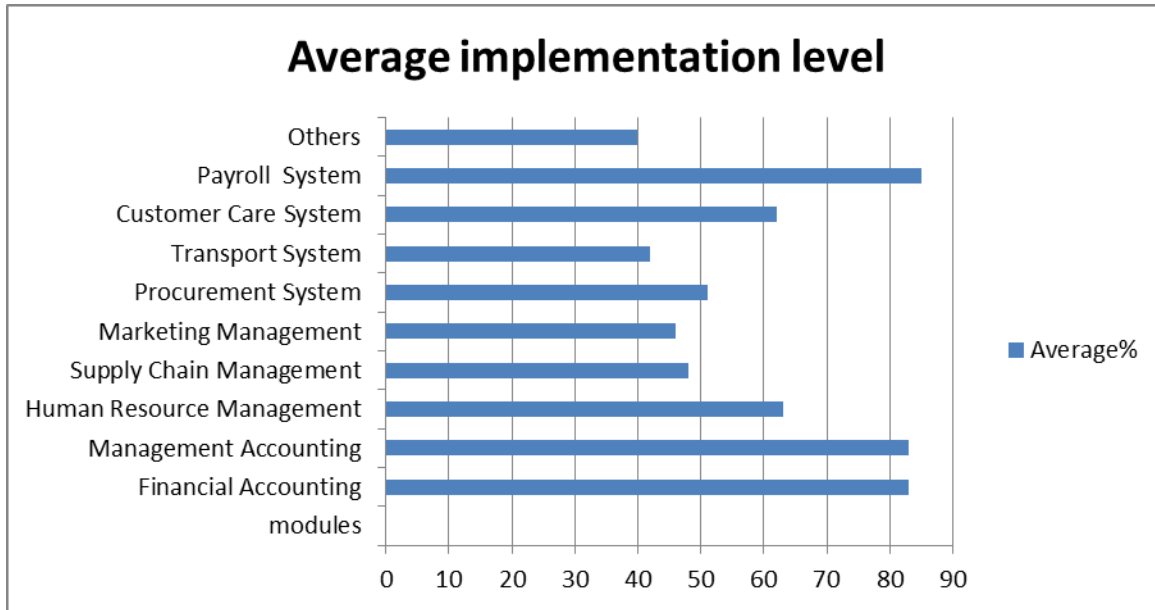
07	Microsoft Dynamic Navision	77%	Not adopted in supply chain, transport and marketing department
08	ASMAS	96%	Adopted in levels of production
09	Microsoft Dynamic Navision	70%	Not adopted in supply chain, transport, customer care and marketing department
10	Microsoft Dynamic Navision	90%	Adopted in all key departments
11	Microsoft Dynamic Navision	65%	Not adopted in supply chain and transport management department
12	Microsoft Dynamic Navision	66%	Adopted in all departments but at a low rate in supply chain, marketing and procurement departments
13	ASMA	45%	Plans underway to shift to Microsoft Dynamic Navision although they use ASMA at only key departments for specific functionalities.
Total average		71%	

The table below gives a summary of the ERP functionality and the implementation levels for individual SACCOs. It was found out that SACCOs had more system functions only if the system was implemented in all departments. These however had to be at a higher level if the SACCO wanted to realize more values. It was found out that most SACCOs with the ERP systems used the system for other functions like mobile banking, online loan processing and statement checking.

Table 5: ERP Functionality and Implementation Levels

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total %	Average %
Financial Accounting	60	60	100	100	40	100	80	100	100	80	100	80	80	1080	83
Management Accounting	40	60	100	100	60	100	80	100	100	80	100	80	80	1080	83
Human Resource Management	20	60	100	80	60	60	80	80	60	20	40	80	80	820	63
Supply Chain Management	20	20	100	80	0	80	80	100	0	20	0	40	80	620	48
Marketing Management	20	20	100	80	60	0	20	100	20	40	40	40	60	600	46
Procurement System	20	20	100	100	0	80	60	80	60	20	20	40	60	660	51
Transport System	20	20	100	80	0	80	0	100	0	20	0	80	40	540	42
Customer Care System	20	20	100	100	80	100	60	100	0	20	60	80	60	800	62
Payroll System	60	60	100	100	80	100	80	100	100	60	100	80	80	1100	85
Others	80	20	100	0	0	0	0	0	100	80	60	0	80	520	40
Total	360	360	1000	820	380	700	480	860	540	440	520	600	700		
Average	36	36	100	82	38	70	48	86	54	44	52	60	70		
Total modules	10	10	10	09	06	08	08	09	07	10	08	09	10		

Figure 3: ERP Functionality and Implementation Levels



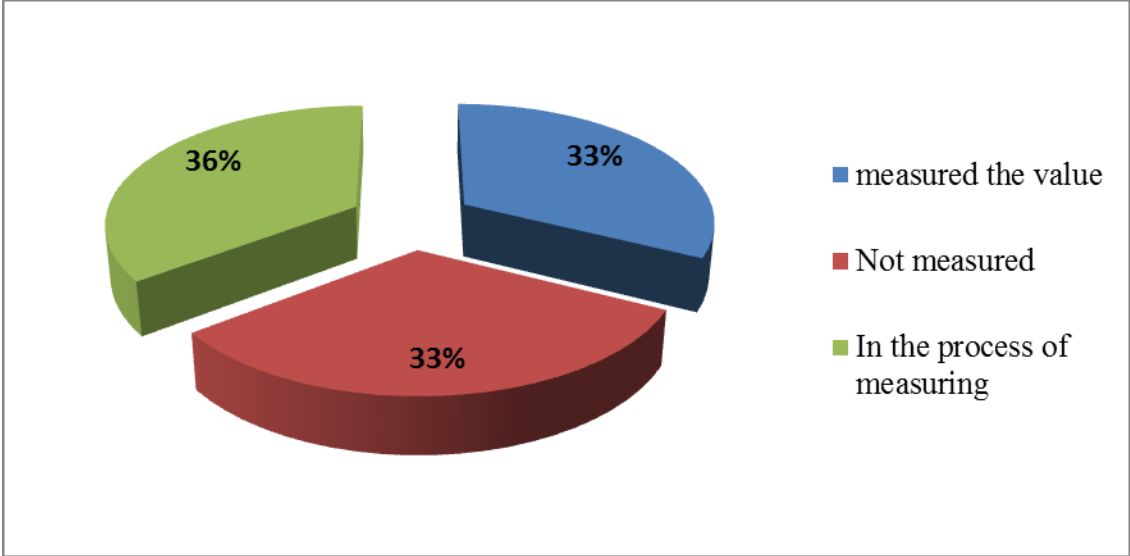
From the figure above, financial and management accounting were implemented to the highest level (83%) while the payroll system was implemented at 85%. Human resource management and customer care were implemented at 65% and 62% respectively. Procurement was implemented at 51% and supply chain management was implemented at 48%. Marketing management was implemented to 46% and transport at 42%.

4.6 Business Value to SACCO

Most SACCOs although they had implemented the ERP system, they had not measured the value. Those that had measured, they used system audit by checking the functionalities and its general performance at large. Customer satisfaction, efficiency in service delivery, data accuracy and timely completion of tasks were other ways of measuring the value as used by some of the SACCO. These gave a percentage of 33% of those that had measured the value of the system 33% of those that had not measured and 34% of those that were in the process measuring the

system value. However some were in the process of measuring the value of those systems. Other SACCOs had not even thought of measuring the value and during our interactions, it was found out from the respondents that it was not necessary to measure the value of ERP systems so long as there was a tangible improvement in their operation.

Figure 4: Business Value Measurement



ERP system comes with many business values. Quick response time reduced manual effort, reduced data and operations redundancy and a variety of services were the key benefits to many SACCOs. According to the findings, 85% of the SACCO experienced increased efficiency, reduced operation costs increased departmental interaction, reliable information access to members and management, improved customer satisfaction, easy adaptability of the business process, improved collaborative culture, improved and timely delivery, competitive advantage and improved coordination are the major values experienced across all sections among the SACCO, giving us an average mean of 2.6. It was also realized that 15% of the SACCO did not have variety of services and social economic benefit as one of the values they had experienced.

Figure 5: Business Value to SACCO

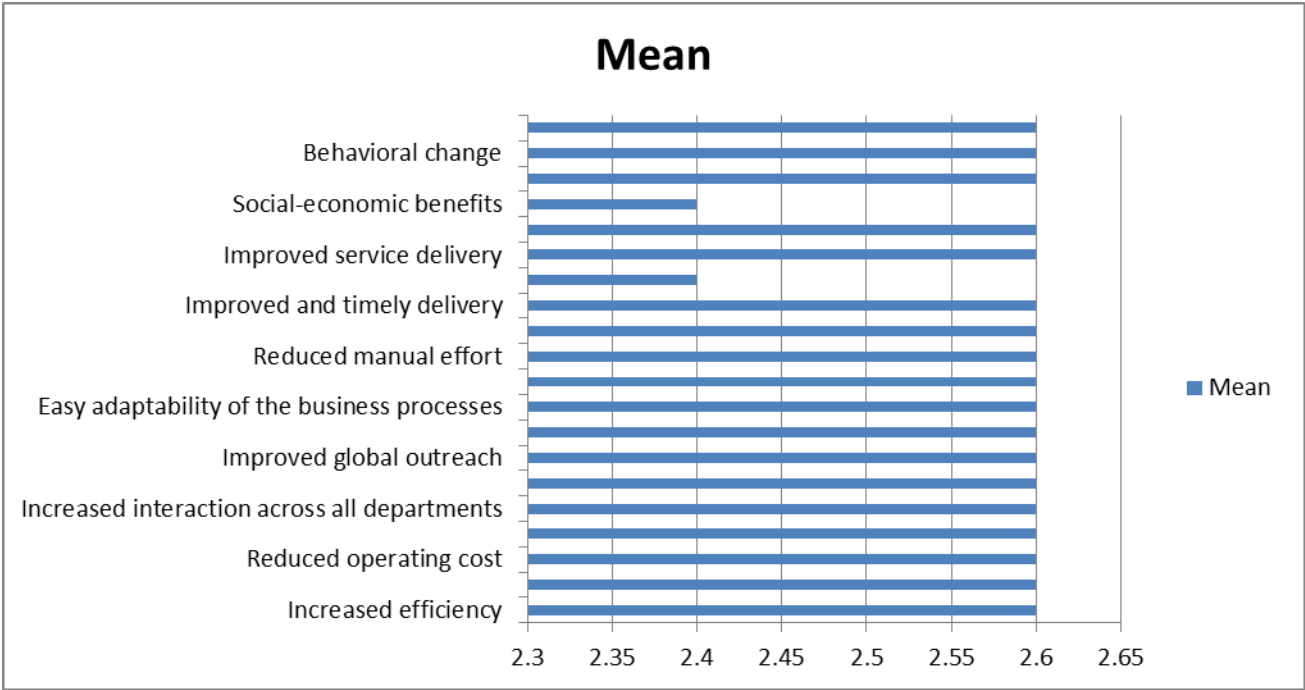


Table 6: Business Value to SACCO Scores

Business Values/SACCOs	1	2	3	4	5	6	7	8	9	10	11	12	13	Total	Mean
Increased efficiency	1	4	5	5	4	5	5	5	4	5	5	4	4	13	2.6
Increased profitability	1	4	4	4	1	5	4	5	4	4	4	1	4	13	2.6
Reduced operating cost	4	4	4	5	4	4	4	5	4	4	4	1	4	13	2.6
Quick response time	1	4	5	5	5	4	5	5	4	5	4	4	4	13	2.6
Increased interaction across all departments	4	4	5	4	4	4	5	5	4	5	4	4	4	13	2.6
Reliable information access	4	4	5	5	4	3	5	4	4	5	4	4	4	13	2.6
Improved global outreach	1	4	5	4	1	4	4	5	1	2	4	1	1	13	2.6
Improved customer satisfaction	1	4	5	4	4	5	5	5	4	4	5	4	4	13	2.6
Easy adaptability of the business processes	1	4	5	5	4	5	5	5	4	4	5	4	5	13	2.6
Improved collaborative culture	4	4	5	4	4	5	4	5	1	4	4	1	5	13	2.6
Reduced manual effort	4	4	5	5	5	5	5	5	4	4	5	4	5	13	2.6
Reduced data and operations redundancy	4	4	5	5	5	5	5	5	1	4	4	5	5	13	2.6
Improved and timely delivery	4	4	5	4	4	4	5	5	4	5	4	4	5	13	2.6
Variety of services	-	4	5	5	5	5	4	5	4	5	4	4	5	12	2.4
Improved service delivery	4	4	5	4	4	4	5	5	4	5	4	4	5	13	2.6
Reduced risk of human error	1	4	5	5	3	4	5	4	5	4	4	1	5	13	2.6
Social-economic benefits	4	4	4	-	4	5	4	5	4	4	4	1	4	12	2.4
Competitive advantage	1	4	5	5	4	5	5	5	4	4	5	4	4	13	2.6
Behavioral change	4	4	4	4	1	4	4	5	4	2	5	1	2	13	2.6
Improved coordination	4	4	5	4	4	5	5	5	4	4	5	4	4	13	2.6
Total	52	80	96	86	90	90	93	98	72	83	87	60	83		
Mean	2.7	4	4.8	4.6	3.7	4.5	4.7	4.9	3.6	4.2	4.4	3	4.15		

4.7 The Relationship between Business Value and ERP Implementation Level

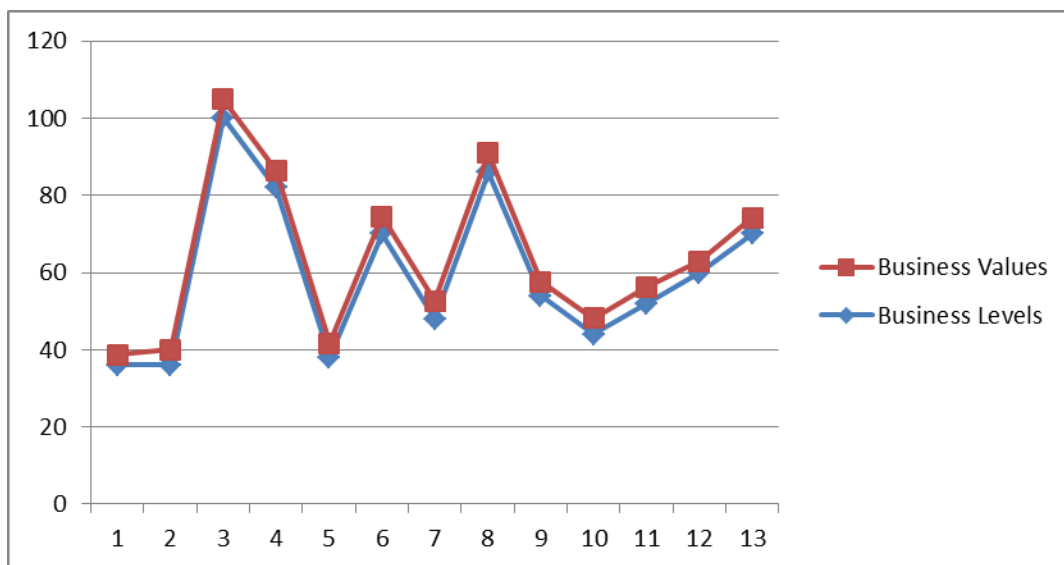
It was found out that the level of ERP implementation determines the value that any SACCO experiences. The following gives a summary of how the business values were influenced by the implementation levels.

Table 7: Business Value and Implementation Levels to SACCO

SACCO	1	2	3	4	5	6	7	8	9	10	11	12	13	
Average	36	36	100	82	38	70	48	86	54	44	52	60	70	776
Average squared	1296	1296	10000	6724	1444	4900	2304	7396	2916	1936	2704	3600	4900	51416
Total	53	82	99	90	79	96	100	106	81	93	98	72	96	1145
	2809	6724	9801	8100	6241	9216	10000	11236	6561	8649	9604	5184	9216	103341
Average * Total	1908	2952	9900	7380	3002	6720	4800	9116	4374	4092	5096	4320	6720	70380

A summary of the table above is as follows:

Figure 6: Business Values and Implementation Levels to SACCO



The scatter plot above indicates that there is positive correlation between levels of implementation a value addition to organization. From the findings, the two variables are exhibiting correlation hence we compute the various Karl Pearson correlation coefficient to further show the correlations.

Calculating Pearson Product Coefficient

Summarize the data into the values needed for the calculation.

- N – the number of data pairs (number of SACCOS is 13).
- $\Sigma(x^2)$ - the sum of the squares of the x values (51416).
- Σx - the sum of all the x values (776).
- $\Sigma(x*y)$ - the sum of each x value multiplied by its corresponding y value (70830).
- Σy - the sum of all the y values (1145).
- $\Sigma(y^2)$ - the sum of the squares of the y values (103341).

Calculate ss_{xy} , ss_{xx} and ss_{yy} using these values.

- $ss_{xy} = \Sigma xy - (\Sigma x \Sigma y \div n) = 70830 - (776 * 1145) / 13 = 2483$
- $ss_{xx} = \Sigma x^2 - (\Sigma x \Sigma x \div n) = 51416 - (776 * 776) / 13 = 5095$
- $ss_{yy} = \Sigma y^2 - (\Sigma y \Sigma y \div n) = 103431 - (1145 * 1145) / 13 = 2583$

The value should be between 1 and -1, inclusive.

- $r = ss_{xy} / (ss_{xx} * ss_{yy})$
- $2483 / (5095 * 2583) = 0.88$

A value close to 1 implies strong positive correlation. (The higher the x, the higher the y).

However, strong positive correlation between levels of implementation and business

value realized. Where r is the Pearson's correlation coefficient between business values and implementation levels.

From the graphs above, there is a positive correlation between ERP implementation and value realization. However, the challenges during implementation of ERP add to costs (due to training of staff.) it's realized that the benefits of ERP implementation far outweighs the cost. It's therefore economical for SACCOs to implement the ERP systems.

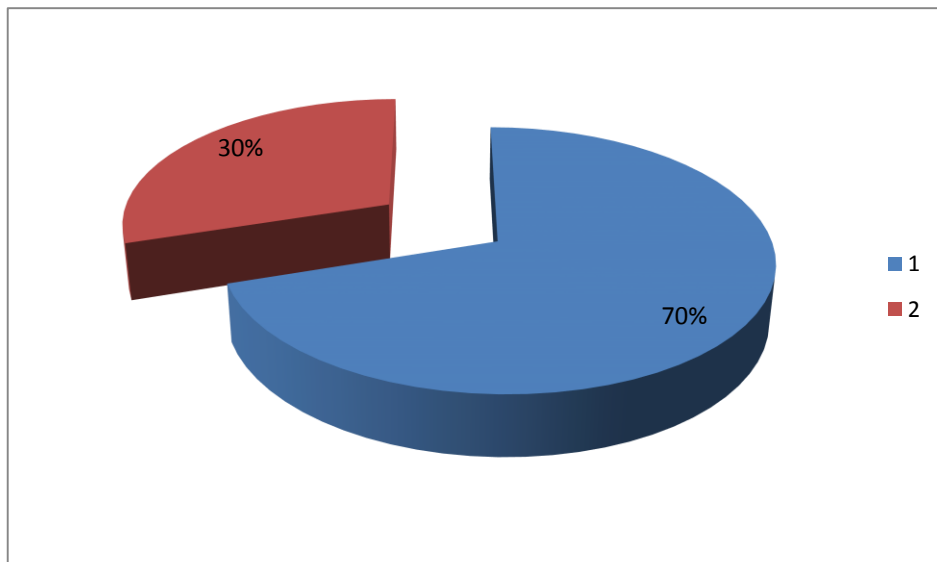
4.8 Implementation Challenge

Every good always has its shortcomings. The ERP system implementation had some challenges that 70% of the SACCOs came across. These challenges included: integration of different types of data, financial resource availability, the system complexity, different change management strategies needed for complete adoption, business process reengineering, revamping old ways of doing business, legacy system conversion, security challenge and restructuring the organizations operation were strongly agreed as the challenges that the SACCO had to go through during and after system implementation.

Other SACCOs didn't find the above challenging. According to some SACCOs, they needed the system and therefore they had to plan enough for the system implementation. This does not mean that they didn't have challenges. 30% of this SACCOs strongly disagreed with the challenges business process reengineering, although with some neutral perspectives. Among the challenges they experienced included; integration of different types of data, installation and maintenance challenge, political interference, employee perception towards the system, employee training and restructuring of the organizations

operations. The neutral challenges include: high resistance to the system, redefining job responsibilities, recruitment of new talented employees, employees training and the system being affected by the social-cultural factors were among the challenges that the respondent was not sure of.

Figure 7: Implementation Challenge



System change was another challenge that the management had to deal with. 90% of the SACCO management fully supported the system change, with a full support from the employees. The management also supported the employees in dealing with change through training and this gave us a 50% support and other SACCOs supported the employees with both training and involving them in the system development giving us 40% and 10% involvement in system development only. 5% partial management support with partial employees support and 5% full management support and a partial support from the employees. This however can be summarized as follows:

Table 8: Management Support

Management support	No. of SACCO	Frequency
Full support with training	01,02,03,04,06,09,13	7
Full support with pay rise	0	0
Full support with system development involvement	05,07,11,12	4
Partial support with training	08,	1
No support	10	1
Total	13	13

Table 9: ERP Implementation challenges

Challenge	1	2	3	4	5	6	7	8	9	10	11	12	13	Total	Mean
Integration of different types of data was a problem	4	3	2	4	5	4	2	5	5	4	3	4	5	50	2.6
Resistance to the system was high	3	4	2	1	2	2	2	5	1	2	4	2	2	13	2.6
Financial resource availability was a problem	1	3	3	4	4	3	2	4	5	4	4	2	4	13	2.6
The system was not supported by management because of the cost	2	2	3	2	2	2	3	3	3	4	3	2	5	13	2.6
The system was complex	4	3	2	2	4	2	2	5	4	4	2	1	4	13	2.6
Employees perception towards the system was negative	-	3	-	4	1	1	3	5	2	4	2	2	4	11	2.2
Organizational complexity	5	3	2	1	4	2	2	3	5	4	4	2	4	13	2.6
The system was affected by the social and cultural factor	2	1	-	1	2	4	3	5	2	4	4	1	4	12	2.4
Different change management strategies were need for complete adoption	4	3	4	1	4	4	4	5	4	4	4	1	5	13	2.6
Users not well trained to use the system	4	3	3	2	4	2	2	4	2	4	3	1	4	13	2.6
Revamping old ways of doing business	4	3	3	4	4	4	2	5	4	4	4	-	4	13	2.6
Business process reengineering	4	3	1	4	4	4	4	5	4	4	4	4	4	13	2.6
Redefining job responsibilities	5	3	1	1	4	4	4	5	1	2	4	4	4	13	2.6
Recruitment of new talented employees	1	2	2	2	1	4	4	5	1	2	4	1	5	13	2.6
Legacy system conversion	4	3	4	1	1	4	4	4	4	4	4	1	5	13	2.6
Political interference	2	2	3	2	2	3	3	3	2	2	2	1	3	13	2.6
Installation and maintenance challenge	2	3	2	2	5	4	2	5	2	4	2	4	4	13	2.6

Security challenges	4	3	4	2	4	2	2	5	4	5	4	2	1	13	2.6
Employee training	4	3	2	4	4	4	4	5	1	1	4	4	1	13	2.6
Restructuring the organization's operations	4	3	2	1	4	5	2	5	4	1	4	4	2	13	2.6
Total	49	58	31	49	70	70	63	99	69	77	80	21	87		
Mean	2.45	2.9	1.55	2.45	3.5	3.5	3.15	4.95	3.45	3.85	4	1.05	4.35		

Key

Strongly agree -5

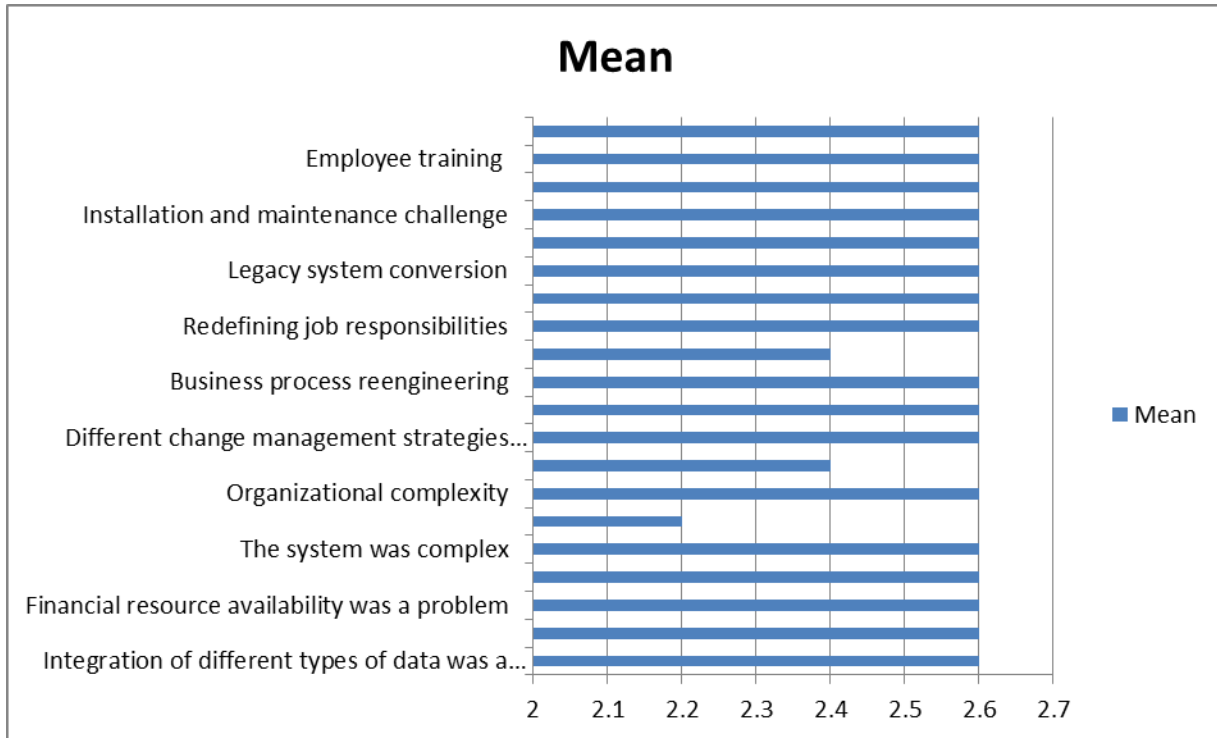
Agree - 4

Strongly disagree – 3

Disagree – 2

Neutral - 1

Figure 8: Implementation challenges



The ERP system implementation had some challenges that 70% of the SACCOs came across. These challenges included: integration of different types of data, financial resource availability, the system complexity, different change management strategies needed for complete adoption, business process reengineering, revamping old ways of doing business, legacy system conversion, security challenge and restructuring the organizations operation were strongly agreed as the challenges that the SACCO had to go through during and after system implementation.

4.8.1 Implementation challenges and business value realization for SACCOs

Most of the SACCOs that have implemented the ERP system above 60% level only 40% of these SACCOs measured the values of the system through system audit basing on the functionalities and the performance of the system; others however have measured customer satisfaction feedback. Accuracy of the data, process completion time system comparison and by looking at

the efficiency in service delivery. In the 40% implementation level, only 20% strongly agreed having enjoyed the benefits of the ERP system implementation, which included: increased efficiency, increased profitability, improved customer satisfaction, easy adaptability to business processes, improved collaborative culture, reduced manual effort, reduced data and operations redundancy, variety of services, social-economic benefits, competitive advantage and improved coordination. 10% agree with the benefits and the remaining 10% had some neutral reactions to some benefit like; reduced operating costs, improved global outreach, quick response time, reduced risk of human error and they also strongly disagreed that reliable information access to members and management was a benefit they have enjoyed.

However, 60% had never measured the system value though they understand perfectly well that once the system had been implemented, more benefits had been experienced. A few of these SACCO were in the process of measuring the value but they don't have an established tool or strategies to help them in carrying out the activity. Those that had measured the values, 20% strongly agreed to having benefited from the system implementation and 40% agreed with some neutral perspective on some of the benefits like; increased profitability, improved global outreach, behavioral change, improved collaborative culture, reduced data and operations redundancy, social-economic benefits, competitive advantage and behavioral change. With the neutral perspective, most of these SACCO are not sure if the value has yet been experienced in their operations.

From the above analysis it's evident that only 40% of the SACCOs that have implemented the system have enjoyed the benefits of the system but they have never measured or are in the process of measuring the values. However 60% of the SACCOs with the system have not realized the values of the systems.

Table 10: Summary of the objectives

Objectives	Results
To establish the levels of ERP implementation	Different levels of implementation experience different levels benefits
To establish the value realized by SACCOs through ERP implementation.	ERP adds value to SACCO but most of them have not realized values
To determine the relationship between ERP implementation and business value realization for SACCO	The levels of implementation determines the values realized by SACCO
To establish the challenges faced by SACCOs during the implementation of ERPs	A large number of SACCOs face a lot of challenges during and after implementation of the ERP system. If the challenges are addressed, then the value outweighs the cost.

Conclusion

From the graphs above, there is a positive correlation between ERP implementation and value realization. However, the challenges during implementation of ERP add to costs (due to training of staff.) it's realized that the benefits of ERP implementation far outweighs the cost. It's therefore economical for SACCOs to implement the ERP systems.

4.9 Discussion of the findings

Enterprise Resource Planning systems are very important to SACCOs as it helps them achieve a lot of values although it depends on the level of implementation. It was found out that most SACCOs had implemented the ERP systems and those that didn't have, were in the process of implementing them. The finding agrees with the Mutongwe and Rahab (2013) study that sought to establish that the ERP enables the full and efficient utilization of the resources for a SACCOs information needs hence giving them a lot of benefits.

SACCOs were aware of the ERP system and those that had started using the system had experienced a lot of values though they had not stopped to measure the values. It's evident from the responses that these systems are very important to any SACCO that want to compete at the market. From the study done by Olando, Jagongo and Mbewa (2013) established that for financial cooperatives to be sustainable and interactive the ERP systems were needed. These means that few benefits will be experienced if few modules have been implemented or implementing all modules across the SACCO but at the lowest percentage.

The ERP system implementation level had a lot of challenges. It was found out that only 20% of the SACCOs had mild challenges but 80% encountered a lot of challenges during system implementation and system use. It was realized that the lower the implementation level, the higher the challenges and the lower the benefit. As the system implementation level is improved, it reaches a point where the challenges are outweighed leading to a lot benefits being experienced. These can be summarized as different levels of implementation come with different levels of challenges and also different levels of benefits.

According to the study one by Seo (2013) on implementation challenges, it's true that more challenges will be encountered with the implementation of more modules but at a certain point, more benefits will be experienced.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the Findings

It was found out that 54% of the SACCOs use commercial ERP systems, 38% use applications that share common database and 8% use standalone systems. Most of the SACCOs that have implemented the ERP system above 60% level only 40% of these SACCOs measured the values of the system through system audit basing on the functionalities and the performance of the system; others however have measured customer satisfaction feedback. ERP system comes with many business values. Quick response time reduced manual effort, reduced data and operations redundancy and a variety of services are the key benefits to many SACCOs.

According to the findings, 60% of the SACCO experienced increased efficiency, reduced operation costs increased departmental interaction, reliable information access to members and management, improved customer satisfaction, easy adaptability of the business process, improved collaborative culture, improved and timely delivery, competitive advantage and improved coordination are the major values experienced across all sections among the SACCO. It was also realized that 30% did not benefit from the system implementation, profitability and behavioral change being among the benefits that were refuted as the benefits of the ERP system implementation in some sections. Since most SACCOs do not have their clients outside Kenya, 10% of the SACCO did not agree with global outreach as a benefit in the department.

The ERP system implementation had some challenges that 70% of the SACCOs came across. These challenges included: integration of different types of data, financial resource availability, the system complexity, different change management strategies needed for complete adoption,

business process reengineering, revamping old ways of doing business, legacy system conversion, security challenge and restructuring the organizations operation were strongly agreed as the challenges that the SACCO had to go through during and after system implementation. System change was another challenge that the management had to deal with. 90% of the SACCO management fully supported the system change, with a full support from the employees.

5.2 Conclusion

In conclusion, the study found that ERP implementation is very key to SACCOs and most of this SACCOs have not realized the value of this system. The study also shows that SACCOs depend on the ERP system for many benefits including; increased efficiency, reduced operation costs increased departmental interaction, reliable information access to members and management, improved customer satisfaction, easy adaptability of the business process, improved collaborative culture, improved and timely delivery, competitive advantage and improved coordination are among the major values that most SACCOs have experienced. Technology is a tool that should be exploited to enhance service delivery in SACCOs. It not only creates competitive advantage but also enhances business growth and stability. Inco-operation of technology in SACCO operations has seen SACCOs improve efficiency, curb fraud and improve service efficiency to clients.

5.3 Recommendations

Customer relationship management (CRM) system is one of the ERP modules for managing a company's interactions with current and future customers. It often involves using technology to organize, automate and synchronize sales, marketing, customer service, and technical support. SACCOS need to put in place a CRM system. These module can enable SACCOS to come up

with e-profiles of its members, create awareness through its website and e-newsletter, provide feedback online through the website interface and SMS system, mobilize members to save by inculcating a savings culture through public awareness campaigns that could involve online campaigns, etc.

SACCOS should lead by example and start an online course in savings and cooperatives. This would enhance the skills of its prospective and current members. These days it is possible to have effective online mentorship programs and SACCOS should explore starting online mentorship for its staff and the board.

For a large SACCO, ERP module should be used in some of the monitoring and/or evaluation activities. Interface SACCO systems with other critical systems like Credit Reference Bureau that issues Financial Cards and the National ID System that issues National ID Cards would enhance the SACCOs operations by getting to know more about the members. An Accounting Information System (AIS), subset of a Management Information System (MIS), is responsible for collection, storage and processing of financial and accounting data that is used by decision makers. It provides timely and accurate financial and statistical reports for internal management decision-making, and for external parties such as creditors, investors, and regulatory and taxation authorities. AIS is a structure that a business uses to collect, store, manage, process, retrieve and report its financial data so that it can be used by accountants, consultants, business analysts, managers, chief financial officers (CFOs), auditors and regulatory and tax agencies.

ERP modules make it easier for a large company or organization to do market research at a competitive price. Also SACCOs should invest in relevant modules for innovations that have the potential to drive economic growth and stability.

5.4 Limitations of the Study

The researcher encountered a lot of limitations during data collection. It was hard to control the attitudes of the respondents towards the study as some of the administrators were skeptical about the research. The researcher however assured them of the anonymity of their identity as well as explaining the need of the study.

The research was also limited with the resources since there was a lot of bureaucracy to be followed, limited access to the information, time and sample size taken led to a lot of delay in releasing the information.

Some of the respondents although few didn't return the questions given to them for data collection.

5.5 Suggestions for Further Research

The findings of the study showed that there is a strong relationship between ERP implementation level and business values. The study therefore recommends that more research needs to be done to show the challenges affecting the ERP implementation and the various measures to overcome these challenges. This is because many SACCOs have taken long to embrace the use of ERP systems.

The study also recommends that a similar study should be done on a wider scale say in the whole country and should focus more on business value measurement.

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APPENDIX: QUESTIONNAIRE

Section A: SACCO Profile

1) What is the name of your SACCO? -----

Kindly tick the information that applies to you;

2) How old is your SACCO? Below 5years [] 5-10 years [] 10-15 years []
15-20years [] 30-40years [] Above 40years []

3) How long have you worked in the organization?

Below 5 years [] 5-10 years []
10-15 years [] 15-20 years [] above 20 years []

4) How many members does your SACCO have? Below 5,000 members []

5,000-10,000members [] 10,000-15,000members []

15,000-20,000members [] above 20,000 members []

5) Are you aware of Enterprise Resource Planning Systems

Yes [] No []

6) Has your company adopted the ERP systems?

Yes [] No [] If yes, which one. -----

7) What type of systems does your SACCO use? (Tick where applicable).

- Commercial ERP systems []

- Applications that share common database []
- Standalone systems []

8) If commercial ERP Systems, specify-----

9) Which ERP system did your SACCO implement?

EasySacco []

FinSacco []

Abacus []

Orbit []

SAP []

Oracle []

Baan []

PeopleSoft []

J. D Edwards []

Bankers Realm MFO []

Others, specify, -----

Section B: Implementation Levels

10) What ERP functions/modules are currently implemented at your SACCO? (Tick on all that apply)

Function/ modules	20%	40%	60%	80%	100%
Financial accounting					
Management accounting					
Human resource management					
Supply chain system					
Marketing management					
Procurement systems					
Transport management					
Customer care solutions					
Payroll					
Others, specify					

Section C: Business Value to SACCO's

11) Has your institution been able to measure the values added by the ERP system?

Yes [] No []

If yes, explain how-----

12) What was the customer's response or opinion on the use of ERP Systems?

Excellent []

Good []

Very good []

Average []

13) State agreement whether ERP implementation has led to the following business value/benefits.

Values	Strongly agree	Agree	Strongly disagree	Disagree	Neutral
Increased efficiency					
Increased profitability					
Reduced operating cost					
Quick response time					
Increased interaction across all departments					
Reliable information access to members and management					
Improved global outreach					
Improved customer satisfaction					
Easy adaptability of the business processes					
Improved collaborative culture					
Reduced manual effort					
Reduced data and operations redundancy					
Improved and timely delivery					
Variety of services					
Improved service delivery					
Reduced risk of human error					
Social-economic benefits					

Competitive advantage					
Behavioral change					
Improved coordination					

Section D: Implementation Challenges

14) How much do you agree with the following statements about the challenges faced by the SACCO during and after ERP Implementation?

Challenge	Strongly agree	Agree	Strongly disagree	Disagree	Neutral
Integration of different types of data was a problem					
Resistance to the system was high					
Financial resource availability was a problem					
The system was not supported by management because of the cost					
The system was complex					
Employees perception towards the system was negative					
Organizational complexity					
The system was affected by the social and cultural factor					
Different change management strategies were need for complete adoption					
Users not well trained to use the system					
Business process reengineering					

revamping old ways of doing business					
Redefining job responsibilities					
Recruitment of new talented employees					
Legacy system conversion					
Political interference					
Installation and maintenance challenge					
Security challenges					
Employee training					
Restructuring the organization's operations					

15) How did the management deal with the system change?

Fully supported []

Partially supported []

Didn't support []

16) How did the employees deal with the system change?

Fully supported []

Partially supported []

Didn't support []

17) How did the management support the employees to deal with the change?

Training []

Pay rise []

Promotions []

Involved in system development []

Others specify-----
